# PRODUCT CATALOGUE



GB



# **Business** aim

"The business aim of the Elpress Group is to provide, primarily to professional users, qualified material and knowledge concerning electrical applications, with a high level of service and product expertise."

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Elpress has been developing, manufacturing and marketing complete cable crimping systems for electrical connectors since 1959.

The Elpress Group, consisting of Elpress and ABIKO business areas, is owned by Lagercrantz Group AB. Elpress head office, factory and warehouse are located in Kramfors, Sweden. Subsidiaries Elpress GmbH, Elpress A/S, Elpress AS, Elpress (Beijing) Ltd. and Elpress Inc. with local warehouses in Silkeborg/Denmark, Beijing/China and Chicago/USA.

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# Certification and standards





Elpress products and services, are designed to minimise environmental impact, to protect limited resources and to take the life-cycle perspective into consideration in connection with:

- Product development.
- Manufacturing.
- Use and withdrawal of products.

Each and every Elpress employee shall prioritize the personal responsibility for safety, quality and the environment within his daily work routine. Information and education will constitute normal activity for increased awareness.

Our suppliers and commissioned partners are chosen and influenced in such a way that they can comply with and add value to our Policy.

Our customers are informed about our environmental dedication and our partners have all the necessary knowledge to assist and advise all parties of the distribution chain and safeguard the proper use, stocking and final disposal of our products.

We continuously evaluate the results of our Policy and openly distribute information on our work and impact on the environment.

Our environment work has resulted in Elpress being certified to ISO 14001 since 2004. Our certificate, with number EMS 531083, is issued by the internationally recognized BSI, British Standards Institution, of England.



### Quality

For us, quality means trying all the time to be the best in the business. That's why we are constantly developing our products, methods and ourselves, since knowledge is perhaps the most important component for achieving the highest quality. Our work on quality has resulted in Elpress being certified to ISO 9001 since 1992. Our certificate, with number FM20987, is issued by the internationally recognized BSI, British Standards Institution, of England.

### Verification of products

There are quite a lot of different test standards and approval routines that may be applied on cable connectors and terminations. Due to this and the variation in contents between standards from different countries one has to make a selection. Elpress had previously applied primarily Swedish, UK and German standards but lately IEC and EN Standards, where the latter rapidly will substitute the old national standards. In many cases, there are also UL, DNV-Det Norske Veritas or other approvals on our products.



IEC - International Electrical Commission - issues international standards which, although not always compulsory, do have strong influence and are used as a basis

within the international terminal trade.



#### **DNV - Det Norske Veritas**

Elpress KR/KS, KRF/KSF and KRT/KST terminals meet DNV's rules for classification of ships and Det Norske Veritas' Offshore Standards. The terminals are approved for installations on ships and mobile "offshore" units.



**UL** is an American standard which is also internationally accepted. KR/KS, KRF/KSF, KRFS, KRFN, KRT/KST UL approved in accordance with file no. E205350.



### Pre-insulated 0.1 - 6 mm<sup>2</sup> terminals with associated tools

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### General information about pre-insulated terminals



#### **System Elpress**

System Elpress consists of terminals and tools that are designed and tested together to give a certified crimping result. This ensures that users will feel confident when using our systems, and that a secure connection will be achieved through the proper handling of our products.

#### **Pre-insulated terminals**

Elpress ring, fork and pin terminals are made of high-class copper 99.95%. The tab and bullet terminals are made of brass or tin-bronze. All terminals are then electrolytically tin-plated for maximum corrosion protection. The terminal's neck is brazed and annealed, which means it can be crimped in any direction. The metal in the receptacles' neck is double folded. This means that the finished terminal has excellent mechanical strength and low resistance.

#### Insulation material

Elpress insulation sleeves are usually made from halogen-free polycarbonate, PC, which has excellent deformation properties. Furthermore, it maintains its vibration support up to high temperatures. Caution must be exercised in case of alkaline exposure. Some types of terminals have insulation of PA, nylon, which is also halogen-free, or PVC (not halogen free. The colour of the insulation sleeve indicates the cross-sectional area that the terminal is intended for:

25 - 0.75 mm
5 - 1.5 mm²
5 - 2.5 mm²
5 mm²

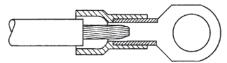
\* or transparent white

The table below shows properties for Elpress pre-insulated terminals insulation. Note the properties are general since the influences of environment, temperature, etc. can affect the terminals. Polycarbonate, PC, and polyamide, PA, are halogen-free, i.e. they do not contain any of the substances fluoride, chlorine, bromide or iodine.

Insulation material	Max. tem- perature	Halogen -free	Flammability class, UL94
PA (Polya- mide)	105°	Yes	V0
PC (Poly- carbonate)	115°	Yes	V2
PVC (Polyvinyl chloride)	60°	No, chlorine	V0

#### **Easy-entry**

Elpress insulation sleeves are usually of the easy-entry type, which means it guides the conductor strands properly into the terminal neck. The risk of back-folded and stray strands, possibly resulting in flash-overs or reduced electrical properties, is therefore eliminated.



Easy-entry.

# Labelling of pre-insulated terminals

Elpress pre-insulated terminals are labelled with logo, cross sectional area and any applicable screw diameter to facilitate work and controllability. When contact crimping pre-insulated terminals, Elpress crimping dies/tools leave an imprint in the insulation sleeve so that all crimped terminals can be inspected retrospectively in accordance with the requirements of many standards.



Samples of Elpress crimped preinsulated terminals.

#### Designation example

#### Cat no. A1532R (E, FLS, G etc.)

A = pre-insulated

15 = cross sectional area (1.5 mm2)

32 = characteristic size (Hole 3.2 mm)

E = end connectors

FLS = receptacles, rolled type

FLSF = receptacles, fully insulated rolled type

FLSH = multiple tabs, rolled type (piggy back)

FLST = receptacles, rolled type, tin-bronze

G = fork terminals

GB = flanged fork terminals

H = tabs (male)

HA = bullets (male)

HO = sockets (female)

K = hook terminals

PSK = parallel connectors

R = ring terminals

SF = blade terminals

SFB = blade terminals, flanged

SFK = blade terminals, short pin

SFL = blade terminals, long pin

SFN = blade terminals, with tab

SR = pin terminals

SRK = pin terminals, short pin

SK = through connectors

SKW = through connectors with heat shrink insulation



Crimping of Elpress pre-insulated ring terminal with hand tool GSA0760.

### Hand tools for pre-insulated terminals

#### Mechanical tools

In the development of a mechanical crimping tool at Elpress, we strive for the best quality and ergonomics in the actual tool, and the best characteristics in the crimped terminal. The tools have a built-in locking system (not the hobby tools) that ensures that the entire crimping process is completed - a prerequisite for professional and quality-assured work.



Elpress Mobile, professional tool with interchangeable dies for the installer or service technician.

#### Miniforce-tools

With the unique Miniforce tools, a new level has been established regarding ergonomic adaptation to the user and low force requirements. This has resulted in a decrease in the grip forces by up to 45% and is the result of an advanced development process where minimisation of the risks of work-related injuries and the best ergonomics have been the deciding factors.



Miniforce type C has longer handles to facilitate two-handed operation, which is often a simple and natural way to reduce the loads. Electrical crimping tools and terminals together constitute a contact crimping system where crimping results are continuously checked against the requirements of established standards such as IEC 60352-2, SEN 245010, DIN 46429, IEC 61238-1 etc. Many of the manual tools have symmetrical crimp positions that make it possible to work from both sides - something that is important for left-handed users. The tools in the Miniforce, D and 50 series are made of very high-grade hardened steel with a black oxide finish and are laser marked.



#### Certification of crimping tools

For quality assurance of our tools, we certify the manufacture of our crimping tools, both hand tools, type Gxx, i.e. Miniforce tools, and type Dxx.



#### What do we certify?

Certification of the crimping tools means that each individual tool is documented at the final assembly and inspection stage with respect to:

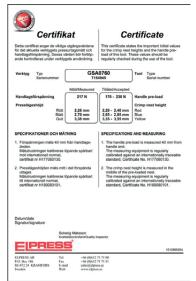
- handle pre-load, which is the force needed to ensure that the lock, which prevents a crimp from being interrupted, is not released too early.
- crimp die nest heights, i.e. the maximum height measurements which can be measured in each indentation with the dies pressed together.

#### Why certification?

The certificate that accompanies the tool serves several functions:

- crimping tools are often directly introduced upon procurement in a quality management system. The tool's status at procurement shall of course be the first thing noted, to then be followed by regular checks where potential changes can be discovered and addressed.
- the certificate shows that each individual tool meets the requirements of the tool's basic specifications.
- the certificate states what the most important characteristics are that shall be followed up.

Elpress' service department offers the possibility of continued follow-up of the quality of the tools.



Certificate that accompanies the tool.



Get your certificate.

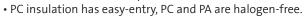


Elpress ergonomic Miniforce tool.



# Ring terminals 0.1 - 6 mm<sup>2</sup>

• Material: Cu 99.95%, tin plated Cu/Sn, brazed neck.



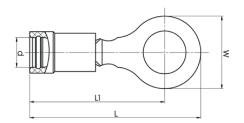












mm² (Cu)	AWG Cu	Name	Screw	W mm	d	L	L1	t	s	Tool	Insulation material	Easy Entry	Pcs/pack
0,1-0,5	26-20	A0522R	M2,5	5,4	2	16	14	0,5	6	DSA0115	PA	No	100
0,1-0,5	26-20	A0532R	M3	5,4	2	16	14	0,5	6	DSA0115	PA	No	100
0,1-0,5	26-20	A0543R	M4	6,5	3	19	16	0,5	6	DSA0115	PA	Yes	100
0,1-0,5	26-20	A0553R	M5	8	2	19	16	0,5	6	DSA0115	PA	Yes	100
0,25-0,75	24-20	A0832R	M3	5,5	3,2	18	15	0,5	7	DSA0115	PC	Yes	100
0,25-0,75	24-20	A0837R	M3,5	6,2	3,2	21	17,5	0,5	7	DSA0115	PC	Yes	100
0,25-0,75	24-20	A0843R	M4	7,5	3,2	21	17,5	0,5	7	DSA0115	PC	Yes	100
0,25-0,75	24-20	A0853R	M5	9	3,2	22	17,5	0,5	7	DSA0115	PC	Yes	100
0,5-1,5	20-16	A1532R	M3	5,5	4	19	16	0,7	7	GSA0760	PC	Yes	100
0,5-1,5	20-16	A1537R	M3,5	6	4	19	16	0,7	7	GSA0760	PC	Yes	100
0,5-1,5	20-16	A1543R	M4	7	4	20,5	17	0,7	7	GSA0760	PC	Yes	100
0,5-1,5	20-16	A1553R	M5	9	4	22,5	18	0,7	7	GSA0760	PC	Yes	100
0,5-1,5	20-16	A1565R	M6	11	4	26,5	21	0,7	7	GSA0760	PC	Yes	100
0,5-1,5	20-16	A1585R	M8	14	4	27,5	20	0,7	7	GSA0760	PC	Yes	100
0,5-1,5	20-16	A1510R	M10	16,5	4	30,5	22	0,7	7	GSA0760	PC	Yes	100
1,5-2,5	15-14	A2532R	M3	5,5	4,5	19	16	0,8	8	GSA0760	PC	Yes	100
1,5-2,5	15-14	A2537R	M3,5	6,2	4,5	19	16	0,8	8	GSA0760	PC	Yes	100
1,5-2,5	15-14	A2543R	M4	7	4,5	21	17,5	0,8	8	GSA0760	PC	Yes	100
1,5-2,5	15-14	A2553R	M5	9	4,5	23	18	0,8	8	GSA0760	PC	Yes	100
1,5-2,5	15-14	A2565R	M6	11	4,5	26	20,5	0,8	8	GSA0760	PC	Yes	100
1,5-2,5	15-14	A2585R	M8	14	4,5	28	21	0,8	8	GSA0760	PC	Yes	100
1,5-2,5	15-14	A2510R	M10	16,5	4,5	30,5	22	0,75	8	GSA0760	PC	Yes	100
1,5-2,5	15-14	A2513R	M12	18	4,3	34	26	0,75	8	GSA0760	PA	Yes	100
4-6	12-10	A4643R	M4	7,8	6,4	24,5	20,5	1	9	GSA0760	PC	Yes	100
4-6	12-10	A4653R	M5	9	6,4	25	20,5	1	9	GSA0760	PC	Yes	100
4-6	12-10	A4665R	M6	11	6,4	28,5	23	1	9	GSA0760	PC	Yes	100
4-6	12-10	A4685R	M8	14	6,4	30,5	23,5	1	9	GSA0760	PC	Yes	100
4-6	12-10	A4610R	M10	17	6,4	34	25,5	1	9	GSA0760	PC	Yes	50
4-6	12-10	A4613R	M12	19,2	6,8	40	31	1	9	GSA0760	PC	Yes	50

t = palm thickness, s = strip length

### Fork terminals 0.1 - 6 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn, brazed neck.
- PC insulation has easy-entry, PC and PA are halogen-free.

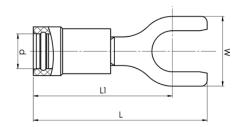












mm² (Cu)	AWG Cu	Name	Screw	W mm	d	L	L1	t	s	Tool	Insulation material	Easy Entry	Pcs/pack
0,1-0,5	26-20	A0532G	M3	5,5	3,2	18	15	0,5	6	DSA0115	PA	No	100
0,25-0,75	24-20	A0832G	M3	5,5	3,2	18	15	0,5	7	DSA0115	PC	Yes	100
0,25-0,75	24-20	A0837G	M3,5	6,2	3,2	21	17,5	0,5	7	DSA0115	PC	Yes	100
0,25-0,75	24-20	A0843G	M4	6,2	3,2	21	17,5	0,5	7	DSA0115	PC	Yes	100
0,5-1,5	20-16	A1532G	M3	5,5	4	19	16	0,7	7	GSA0760	PC	Yes	100
0,5-1,5	20-16	A1537G	M3,5	6,2	4	21	17,5	0,7	7	GSA0760	PC	Yes	100
0,5-1,5	20-16	A1537GS	M3,5	5,5	4	21,2	17	0,7	7	GSA0760	PC	Yes	100
0,5-1,5	20-16	A1543G	M4	7	4	21	17,5	0,7	7	GSA0760	PC	Yes	100
0,5-1,5	20-16	A1553G	M5	9	4	22,5	18	0,7	7	GSA0760	PC	Yes	100
0,5-1,5	20-16	A1565G	M6	11	4	26,5	21	0,7	7	GSA0760	PC	Yes	100
1,5-2,5	16-14	A2532G	M3	5,5	4,5	18	15	0,8	8	GSA0760	PC	Yes	100
1,5-2,5	16-14	A2537G	M3,5	6,2	4,5	21	17,5	0,8	8	GSA0760	PC	Yes	100
1,5-2,5	16-14	A2537GS	M3,5	5,5	4,5	21,2	17	0,8	8	GSA0760	PC	Yes	100
1,5-2,5	16-14	A2543G	M4	7	4,5	21	17,5	0,8	8	GSA0760	PC	Yes	100
1,5-2,5	16-14	A2553G	M5	9	4,5	23	18	0,8	8	GSA0760	PC	Yes	100
1,5-2,5	16-14	A2565G	M6	11	4,5	25	19,5	0,8	8	GSA0760	PC	Yes	100
4-6	12-10	A4643G	M4	7,8	6,4	24	20	1	9	GSA0760	PC	Yes	100
4-6	12-10	A4653G	M5	9	6,4	25	20,5	1	9	GSA0760	PC	Yes	100
4-6	12-10	A4665G	M6	11	6,4	27	21,5	1	9	GSA0760	PC	Yes	100
4-6	12-10	A4685G	M8	14	6,4	30	23	1	9	GSA0760	PC	Yes	100
4-6	12-10	A4610G	M10	18	6,4	36	27,5	1	9	GSA0760	PA	Yes	100

t = palm thickness, s = strip length

# Flanged fork terminals 0.5 - 2.5 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn, brazed neck.
- PC insulation has easy-entry, PC is halogen free.

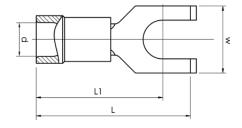












mm² (Cu)	AWG Cu	Name	Screw	W mm	d	L	L1	t	s	Tool	Insulation material	Easy Entry	Pcs/pack
0,5-1,5	20-16	A1537GB	M3,5	6,2	4	21	17,5	0,7	7	GSA0760	PC	Yes	100
0,5-1,5	20-16	A1543GB	M4	6,2	4	21	17,5	0,7	7	GSA0760	PC	Yes	100
1,5-2,5	16-14	A2543GB	M4	6,2	4,5	21	17,5	0,8	7	GSA0760	PC	Yes	100
1,5-2,5	16-14	A2553GB	M5	9	4,5	22,5	17,5	0,8	7	GSA0760	PC	Yes	100

t = palm thickness, s = strip length



### Hook terminals 0.5 - 2.5 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn, brazed neck.
- PC insulation has easy-entry, PC is halogen free.

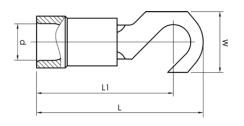












mm² (Cu)	AWG Cu	Name	Screw	W mm	d	L	L1	t	s	Tool	Insulation material	Easy Entry	Pcs/pack
0,5-1,5	20-16	A1543K	M4	7	4	20,5	17	0,7	7	GSA0760	PC	Yes	100
1,5-2,5	16-14	A2543K	M4	7,5	4,5	21	17	0,8	8	GSA0760	PC	Yes	100

t = palm thickness, s = strip length

### Pin terminals 0.1 - 6 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn, brazed neck.
- PC insulation has easy-entry, PC and PA are halogen-free.

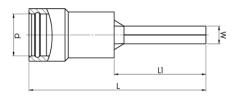












mm² (Cu)	AWG Cu	Name	W mm	d	L	L1	s	Tool	Insulation material	Easy Entry	Pcs/pack
0,1-0,5	26-20	A0514SR	1,2	2,2	18	8	6	DSA0115	PA	No	100
0,25-0,75	24-20	A0819SR	1,8	3,2	22	12	7	DSA0115	PC	Yes	100
0,25-0,75	24-20	A0819SRK	1,8	3,2	18,5	8,5	7	DSA0115	PC	Yes	100
0,5-1,5	20-16	A1519SR	1,7	4	22	12	7	GSA0760	PC	Yes	100
0,5-1,5	20-16	A1519SRK	1,7	4	18,5	8,5	7	GSA0760	PC	Yes	100
1,5-2,5	16-14	A2519SR	1,9	4,5	21,5	11,5	8	GSA0760	PC	Yes	100
1,5-2,5	16-14	A2519SRK	1,9	4,5	18,5	8,5	8	GSA0760	PC	Yes	100
4-6	12-10	A4630SR	2,7	6,4	27	14	9	GSA0760	PC	Yes	100



### Blade terminals 0.25 - 6 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn, brazed neck.
- PC insulation has easy-entry, PC is halogen free.

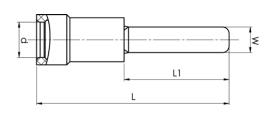












mm² (Cu)	AWG Cu	Name	W mm	d	L	L1	t	s	Insulation material	Easy Entry	Tab	Tool	Pcs/pack
0,25-0,75	24-20	A0825SFK	2,5	3,2	20	10	0,5	7	PC	Yes	No	DSA0115	100
0,5-1,5	20-16	A1518SFL	2,3	4,0	27,2	18	0,8	7	PVC	Yes	No	GSA0760	100
0,5-1,5	20-16	A1529SF	2,9	4	22	12	0,7	7	PC	Yes	No	GSA0760	100
0,5-1,5	20-16	A1529SFN	2,9	4	22	12	0,7	7	PC	Yes	Yes	GSA0760	100
0,5-1,5	20-16	A1530SFB	3	4	25,8	16,8	0,8	7	PVC	Yes	No	GSA0760	100
1,5-2,5	16-14	A2524SFL	2,3	4,5	27,2	18	0,8	8	PVC	Yes	No	GSA0760	100
1,5-2,5	16-14	A2529SF	2,9	4,3	21,5	11,5	0,8	8	PC	Yes	No	GSA0760	100
1,5-2,5	16-14	A2529SFN	2,9	4,3	22	12	0,8	8	PC	Yes	Yes	GSA0760	100
1,5-2,5	16-14	A2530SFB	3	4,5	25,8	16,8	0,7	8	PVC	Yes	No	GSA0760	100
4-6	12-10	A4640SF	4	6,8	27,5	13,5	1	9	PVC	Yes	No	GSA0760	100
4-6	12-10	A4645SFB	4,6	6,8	30,3	16,8	1	9	PVC	No	No	GSA0760	100

t = palm thickness, s = strip length

# Through connectors 0.25 - 6 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn, contact sleeve of Cu pipe
- Halogen-free PC insulation without Easy-entry.

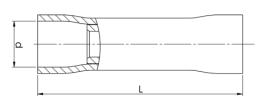












	mm² (Cu)	AWG Cu	Name	d mm	L	S	Tool	Insulation material	Easy Entry	Pcs/pack
	0,25-0,75	24-20	A0824SK	2,9	24,5	7	DSA0115	PC	No	100
	0,5-1,5	20-16	A1525SK	3,4	24	7	GSA0760	PC	No	100
	1,5-2,5	16-14	A2527SK	4,3	26	8	GSA0760	PC	No	100
	4-6	12-10	A4652SK	6,5	33	9	GSA0760	PC	No	50

s = strip length

# Through connectors with heat shrink insulation 0.5 - 6 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn, contact sleeve of Cu pipe.
- Insulation of halogen-free PA, hot melt adhesive inside the insulation.

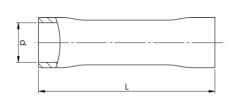












	mm² (Cu)	AWG Cu	Name	d mm	L	s	Tool	Insulation material	Pcs/pack
	0,5-1,5	20-16	A1535SKW	3,7	31,5	8	GSW0560C	PA	25
	1,5-2,5	16-14	A2535SKW	4,6	31,5	8	GSW0560C	PA	25
	4-6	12-10	A4650SKW	6,5	37,5	9	GSW0560C	PA	25

s = strip length

After crimping and heating with a hot air gun, a water proof terminal, glued to the cable and the connector, is achieved.

### Parallel through connectors 0.5 - 6 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn, contact sleeve of Cu pipe.
- Insulation of halogen-free PA.

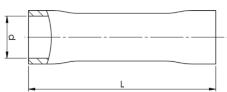












	mm² (Cu)	AWG Cu	Name	d mm	L	s	Tool	Insulation material	Pcs/pack
	0,5-1,5	20-20	A1515PSK	3,2	17	7	GSA0760	PA	100
	1,5-2,5	16-16	A2517PSK	4	17	8	GSA0760	PA	100
	4-6	12-10	A4634PSK	5,6	21	9	GSA0760	PA	100

s = strip length

Type PSK must be crimped with GSA0760 (C) and with two crimps.

# Receptacles rolled type 0.1 - 6 mm<sup>2</sup>

- Material: brass, tin plated Cu/Sn, brazed neck.
- PC and PA insulation have easy-entry, PC and PA are halogen-free.

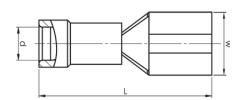












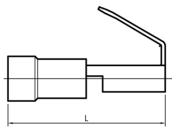
mm² (Cu)	AWG Cu	Name	W mm	d	L	s	For tab	Tool	Insulation material	Neck type	Easy Entry	,	Pcs/ pack
0,1-0,5	26-20	A0503FLS5	3,7	2,2	16,4	7	2,8x0,5	DSA0115	PVC	Brazed	Yes	Brass, Cu/Sn	100
0,1-0,5	26-20	A0503FLS8	3,7	2,2	16,4	7	2,8x0,8	DSA0115	PVC	Brazed	Yes	Brass, Cu/Sn	100
0,5-1,5	20-16	A1503FLS5	3,2	4	18	7	2,8x0,5	GSA0760	PC	Brazed	Yes	Brass, Cu/Sn	100
0,5-1,5	20-16	A1503FLS8	3,2	4,0	18	7	2,8x0,8	GSA0760	PC	Brazed	Yes	Brass, Cu/Sn	100
0,5-1,5	20-16	A1505FLS5	5	3,2	19,5	7	4,8x0,5	GSA0760	PA	Brazed	Yes	Brass, Cu/Sn	100
0,5-1,5	20-16	A1505FLS8	5	3,2	19,5	7	4,8x0,8	GSA0760	PA	Brazed	Yes	Brass, Cu/Sn	100
0,5-1,5	20-16	A1507FLS	7,6	4	20,5	7	6,3x0,8	GSA0760	PC	Brazed	Yes	Brass, Cu/Sn	100
0,5-1,5	20-16	A1507FLST	7,6	4	20,5	7	6,3x0,8	GSA0760	PC	Brazed	Yes	Tin bronze (phosphor bronze), Cu/S	n 100
1,5-2,5	16-14	A2505FLS5	5,6	4,5	20	8	4,8x0,5	GSA0760	PA	Brazed	Yes	Brass, Cu/Sn	100
1,5-2,5	16-14	A2505FLS8	5	3,9	19,5	8	4,8x0,8	GSA0760	PA	Brazed	Yes	Brass, Cu/Sn	100
1,5-2,5	16-14	A2507FLS	7,6	4,5	20,5	8	6,3x0,8	GSA0760	PC	Brazed	Yes	Brass, Cu/Sn	100
1,5-2,5	16-14	A2507FLST	7,6	4,5	20,5	8	6,3x0,8	GSA0760	PC	Brazed	Yes	Tin bronze (phosphor bronze), Cu/S	n 100
4-6	12-10	A4607FLS	7,6	6,4	24	9	6,3x0,8	GSA0760	PC	Brazed	Yes	Brass, Cu/Sn	100
4-6	12-10	A4609FLS	10,9	6,6	30,1	9	9,5x1,2	GSA0760	PA	Reinforcement sleeve	Yes	Brass, Cu/Sn	100

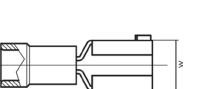
s = strip length

# Multiple tabs rolled type (piggy back) 0.5 - 2.5 mm<sup>2</sup>

• Material: brass/Cu, tin plated Cu/Sn.







mm² (Cu)	AWG Cu	Name	W mm	d	L	s	For tab	Insulation material	Neck type	Easy Entry	Pcs/pack
		A1507FLSH A2507FLSH							Reinforcement sleeve Reinforcement sleeve		100 100



# Receptacles fully insulated rolled type 0.5 - 6 mm<sup>2</sup>

- Material: brass, tin plated Cu/Sn, brazed neck.
- PC and PA insulation has easy-entry, PC and PA are halogen-free.

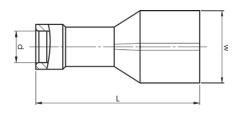












mm² (Cu)	AWG Cu	Name	W mm	d	L	s	For tab	Insulation material	Neck type	Easy Entry	Pcs/pack
0,5-1,5	20-16	A1503FLSF5	5,5	3,4	19,5	7	2,8x0,5	PA	Reinforcement sleeve	Yes	100
0,5-1,5	20-16	A1503FLSF8	5	3,4	19,5	7	2,8x0,8	PA	Reinforcement sleeve	Yes	100
0,5-1,5	20-16	A1505FLSF5	7,2	4,1	19,5	7	4,8x0,5	PA	Reinforcement sleeve	Yes	100
0,5-1,5	20-16	A1505FLSF8	7,2	4,1	19,5	7	4,8x0,8	PA	Reinforcement sleeve	Yes	100
0,5-1,5	20-16	A1507FLSF	8,8	4	21,3	7	6,3x0,8	PC	Brazed	Yes	100
1,5-2,5	16-14	A2505FLSF5	7,2	4,5	19,5	8	4,8x0,5	PA	Reinforcement sleeve	Yes	100
1,5-2,5	16-14	A2505FLSF8	7	3,9	19,5	8	4,8x0,8	PA	Reinforcement sleeve	Yes	100
1,5-2,5	16-14	A2507FLSF	8,8	4,5	21,3	8	6,3x0,8	PC	Brazed	Yes	100
4-6	12-10	A4607FLSF	9,2	5,4	26	9	6,3x0,8	PA	Reinforcement sleeve	Yes	100

s = strip length

### Blade 0.5 - 6 mm<sup>2</sup>

- Material: brass, tin plated Cu/Sn, brazed neck.
- PC and PA insulation have easy-entry, PC and PA are halogen-free.

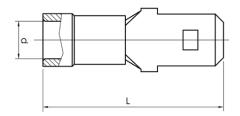












mm² (Cu)	AWG Cu	Name	d mm	L	s	Tab	Insulation material	Neck type	Easy Entry	Pcs/pack
0,5-1,5	20-16	A1507H	4,1	22	7	6,3x0,8	PC	Brazed	Yes	100
1,5-2,5	16-14	A2507H	5	22,5	8	6,3x0,8	PC	Brazed	Yes	100
4-6	12-10	A4607H	6,6	24,5	9	6,3x0,8	PA	Reinforcement sleeve	No	100

### End connector sleeves fully insulated 1 - 6 mm<sup>2</sup>

- Material: Cu, tin plated Cu/Sn.
- Insulation of halogen-free PA. Easy-entry.

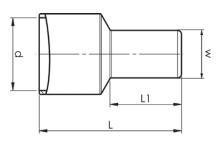












mm² (Cu)	AWG Cu	Name	d mm	L	L1	s	Tool	Insulation material	Easy Entry	Pcs/pack
1-3	18-13	A2500E	6,4	15,2	8	8	GSA0760	PA	Yes	100
4-6	12-10	A4600E	9,2	17,7	9	9	GSA0760	PA	Yes	100

s = strip length

### Bullet 0.25 - 6 mm<sup>2</sup>

- Material: brass/Cu, tin plated Cu/Sn.
- PC insulation has easy-entry, PC and PA are halogen-free.

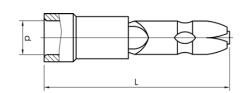












mm² (Cu)	AWG Cu	Name	d mm	L	S	Bullet	Tool	Insulation material	Neck type	Easy Entry	Pcs/pack
0,25-0,75	24-20	A0802HA	3,1	26	7	2,0	DSA0115	PA	Reinforcement sleeve	No	100
0,5-1,5	20-16	A1504HA	4	22	7	4,0	GSA0760	PC	Brazed	Yes	100
1,5-2,5	16-14	A2505HA	4,3	20,7	8	5,0	GSA0760	PVC	Reinforcement sleeve	No	100
4-6	12-10	A4605HA	6,6	25,7	9	5,0	GSA0760	PA	Reinforcement sleeve	No	100

s = strip length

### End connector sleeves fully insulated 0.25 - 6 mm<sup>2</sup>

• Material: brass/Cu, tin plated Cu/Sn.

• PC insulation has easy-entry, PC and PA are halogen-free.

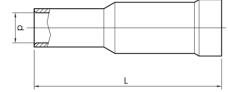












	mm² (Cu)	AWG Cu	Name	d mm	L	s	For bullets	Tool	Insulation material	Neck type	Easy Entry	Material	Pcs/ pack
	0,25-0,75	24-20	A0802HO	3,1	24,5	7	2	DSA0115	PA	Reinforcement sleeve	No	Brass/Cu, Cu/Sn	100
	0,5-1,5	20-16	A1504HO	4	25	7	4	GSA0760	PC	Brazed	Yes	Tin bronze (phosphor bronze), Cu/Sn	100
	, ,		A2505HO	,	25	8	-			Reinforcement sleeve		Brass/Cu, Cu/Sn	100
	4-6	12-10	A4605HO	5,7	27	9	5	GSA0760	PA	Reinforcement sleeve	No	Brass/Cu, Cu/Sn	100

### Assortment boxes - pre-insulated terminals







# **C** € RPL605



RPL605 is a complete assortment box for professional work, containing terminals and tools.

#### **Properties:**

- certified crimping tool GSA0760, crimp area 0.5-6 mm²
- stripping tool SCT001, cuts and strips 0.5-6 mm<sup>2</sup>
- 605 x Elpress pre-insulated 0.5-6 mm² terminals

mm²	AWG	Name	Net weight (kg)	Length mm	Width	Height	
0,5-6	20-10	RPL605	2,05	261	338	57	













- box made of ABS plastic, inserts made of polystyrene
- 29 compartments
- 997 pre-insulated 0.5-6 mm² terminals
- 4 connection blocks
- crimping tool GSA0760 Miniforce
- stripping tool SCT001

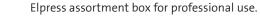
mm²	AWG	Name	Net weight (kg)	Length mm	Width	Height	
0,5-6	20-10	PL1001	2,94	380	285	55	







# **C** € PL451M



#### **Properties:**

- box made of polypropylene, insert made of polystyrene
- 11 compartments
- 346 pre-insulated 0.5-6 mm² terminals
- 3 connection blocks
- crimping tool GSA0760 Miniforce
- stripping tool SCT001

mm²	AWG	Name	Net weight (kg)	Length mm	Width	Height
0,5-6	20-10	PL451M	1,275	245,5	215	56,5













### **PL450**

Elpress assortment box designed for hobby use.

#### **Properties:**

- box made of polypropylene, insert made of polystyrene
- 11 compartments
- 346 pre-insulated 0.5-6 mm² terminals
- 3 connection blocks
- $\bullet$  crimping tool hobby T50, which contact crimps, cuts and strips up to and including 6 mm² and cuts M2.5-M5 screws

mm²	AWG	Name	Net weight (kg)	Length mm	Width	Height
0,5-6	20-10	PL450	1,019	245,5	215	56,5









### **HB150**

Elpress assortment box designed for hobby use.

#### **Properties:**

- box made of polypropylene, insert made of polystyrene
- 11 compartments
- 147 pre-insulated 0.5 6 mm² terminals
- 2 connection blocks
- crimping tool hobby T50, which contact crimps, cuts and strips up to and including 6 mm² and cuts M2.5-M5 screws

mm²	AWG	Name	Net weight (kg)	Length mm	Width	Height
0,5-6	20-10	HB150	0,781	245,5	215	56,5



# Hobby tools for pre-insulated and uninsulated 0.5 - 6 mm<sup>2</sup> terminals as well as cutting and stripping

#### **Properties:**

- made of high-grade steel with semi-soft handles
- crimping positions are clearly marked
- the tools do not have a locking function
- cuts up to and including 6 mm<sup>2</sup>
- strips up to and including 6 mm<sup>2</sup>
- cuts screws M2.5-M5







### T50 Hobby tool



#### **Special properties:**

- contact crimps pre-insulated 0.5 6 mm² terminals and tab crimps uninsulated 1.5 6 mm² terminals
- red handle

Crimp geometries





mm²	AWG	Name	Crimp geometries	Net weight (kg)	Length mm
0,5-6	20-10	T50	Tab, Oval	0,268	225







### T51 Hobby tool



#### Special properties:

- contact crimps pre-insulated 0.5 6 mm² terminals and roll crimps uninsulated 0.5 - 2.5 mm² terminals
- · yellow handle

Crimp geometries





mm²	AWG	Name	Crimp geometries	Net weight (kg)	Length mm
0,5-6	20-10	T51	Oval, Roll	0,268	225







### T52 Hobby tool



#### **Special properties:**

- roll crimps uninsulated 0.5 6 mm² terminals
- green handle

Crimp geometry



mm²	AWG	Name	Crimp geometry	Net weight (kg)	Length mm
0,5-6	20-10	T52	Roll	0,268	225



### Tools for pre-insulated 0.14 - 2.5 mm<sup>2</sup> terminals with measuring certificates



#### **Properties:**

- crimping positions are clearly marked
- adjustable for changes after long use
- tested with Elpress terminals
- locking function that ensures a complete crimp
- emergency release if the crimping process has to be interrupted
- unique design that makes the tools thin and versatile
- minimal muscle strength required for complete crimp
- suitable for both right and left-handed users
- withstands at least 50,000 crimps

supplied with certificate for basic quality monitoring









### **DSA0115**

Tested and certified mechanical hand tool for symmetrical crimping of pre-insulated terminals 0.14-1.5 mm<sup>2</sup>.



Crimp geometry



#### Special properties:

· easy to check red die nests easily with die nest gauge, ESAQ0760

mm²	AWG	Name	Crimp geometry	Net weight (kg)	Length mm	Width
0,14-1,5	26-16	DSA0115	Oval	0,445	192	66

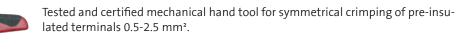








### **C** € DSA0725





#### Special properties:

· die nests are easily checked with die nest gauge, ESAQ0760



mm²	AWG	Name	Crimp geometry	Net weight (kg)	Length mm	Width
0,5-2,5	20-14	DSA0725	Oval	0,449	192	66



### ESAQ0760 - die nest gauge

Go/no-go gauge for inspection of die nests in the following tools: DSA0115, DSA0725, GSA0760(C), GSEA0340C.

#### Special properties:

- handle part Ø 8 mm
- easy to check tool die nest
- The go and no go dimensions are checked in the die nests upon calibration. Contact Elpress for more information on calibration and quality management

mm²	AWG	Name	Net weight (kg)	Shaft ø	Length mm
0,5-2,5	20-14	ESAQ0760	0,024	8	55
Tool	Die	e nests			
DSA0115	5				
DSA0725					
GSA0760	` '				
GSEA034	10(C)				



# Miniforce tools for pre-insulated 0.5 - 6 mm<sup>2</sup> terminals and 0.25 - 4 mm<sup>2</sup> end casings with measuring certificates



#### **Properties:**

- locking function which only releases once crimping is complete
- emergency release if the crimping process has to be interrupted
- symmetrical and clearly marked crimping positions
- adjustable for changes after long use
- tested with Elpress terminals
- unique mechanism that reduces maximum handle force from 450 N right down to 250 N (model C)
- ergonomic handle suitable for all users
- maximises the quality of work
- reduces the risk of occupational injuries
- light and versatile design without sacrificing on strength
- model C has extra long handles for the use of two hands
- withstands at least 80,000 crimps
- supplied with certificate for basic quality monitoring









# **C** € GSEA0340C



Tested and certified mechanical Miniforce hand tool for crimping pre-insulated terminals 0.5-2.5 mm<sup>2</sup> as well as pre-insulated and uninsulated end sleeves 0.25-4 mm<sup>2</sup>.

mm²	AWG	Name	Crimp geometries	Net weight (kg)	Length mm	Width
0,5-2,5	/ 20-14 /				256	80
0.25.4	22 12					

Crimp geometries











### GSW0560C



Tested and certified mechanical Miniforce hand tool for crimping 0.5-6 mm<sup>2</sup> through connectors with heat shrink insulation of the SKW type.

mm²	AWG	Name	Crimp geometry	Net weight (kg)	Length mm	Width
0,5-6	20-10	GSW0560C	Oval	0,612	256	80

Crimp geometry



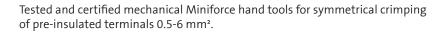








### **GSA0760** and **GSA0760C**

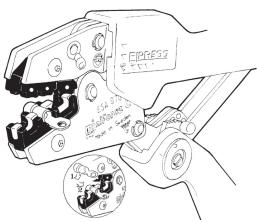


#### Special properties:

- locator that holds the terminal in the right position when crimping and facilitates work in, for example, tight spaces
- die nests are easily checked with die nest gauge, ESAQ0760

mm²	AWG	Name	Crimp geometry	Net weight (kg)	Length	Width
0,5-6	20-10	GSA0760	Oval	0,548	203	76
0,5-6	20-10	GSA0760C	Oval	0,607	256	80





Follow procedures (1) and (2) when attaching the terminal in the locator on tool GSA0760(C).

#### Crimp geometry



### Battery-powered crimping tools for pre-insulated 0.5 - 6 mm² terminals, uninsulated 0.25 - 10 mm² terminals and 0.5 - 50 mm<sup>2</sup> end sleeves

#### **Properties:**

- Li-ion battery powered (10.8 V and 2 Ah), charging time about 40 min
- very good accessibility and ergonomics
- service and installation tools
- fast crimping process 2 4 sec
- · approximately 230 crimps/battery charge
- dies for the tool sold separately









# CE PVL130P - Elpress Mini



PVL130P - Elpress MINI, dies sold separately.

PVL130P, case and charger.

Elpress mini tool with a sleek design with a high performance Li-lon battery that facilitates your work with its improved battery capacity. Crimping force max. 13 kN. 1 x Li-ion battery and charger included.

#### **Properties:**

- one-handed operation for easy control of all tool functions
- durable crimping head for long service life
- optimal crimping thanks to parallel-moving dies
- easy to use due to its low weight
- high-performance 10.8 V Li-lon battery with indication of charge status
- · open head, rotating
- easy and comfortable to use one handed thanks to its ergonomic 2-component housing with grip-friendly protection
- automatic return of dies when crimping is complete

mm² (Cu)	AWG (Cu)	Name	Net weight (kg)	Length mm	Width	Height	Note
0,25-50	24-1/0	PVL130P	1,5	330	85	60	Charger: 230VAC
0,25-50	24-1/0	PVL130P-US	1,5	330	85	60	Charger: 115VAC
0,25-50	24-1/0	PVL130P-WOBC	0,91	330	85	60	without Battery/
							Charger











# PVL130S - Elpress Mini

Elpress mini tools with intuitive PowerSense function combine the benefits of manual crimping tools with the benefits of battery-powered hydraulic crimping

Crimping force max. 15 kN. 1 x Li-ion battery and charger included.



PVL130S - Elpress MINI, supplied with die pair SA0760.

#### **Properties:**

- one-handed operation for easy control of all tool functions
- electronic control with locking function and monitoring for complete closure of
- safety loop used as fall protection when used outdoors
- motor protection ensures safety in case of overload
- easy and comfortable to use one handed thanks to its ergonomic 2-component housing with grip-friendly protection
- very low weight and fast crimping process for maximum efficiency

Crimp geometry

Oval

Tab

W

Roll

Trapezoid

Trapezoid

Trapezoid

Trapezoid

- powerful driving technology allows for easy crimps
- high-performance 10.8 V Li-Ion battery with indication of charge status
- LED work lighting

AWG

(Cu)

0,25-2,5 22-14

20-10

12-8

20-10

12-8

6-4

2-0

Name

SA0760

KB0325

WB4099

EB0560

EB4010

FB1025

EB3550

20-10 RB0560

mm²

(Cu)

0,5-6

4-10

0,5-6

0,5-6

4-10

10-25

35-50

• Die pair SA0760 comes with the tool

mm² (Cu)	AWG (Cu)	Name	Net weight (kg)	Length mm	Width	Height	Note
0,25-50	24-1/0	PVL130S	1,5	58	92	250	Charger: 230VAC
0,25-50	24-1/0	PVL130S-US	0,96	58	92	250	Charger: 115VAC
0.25-50	24-1/0	PVL130S-WOBC	0.91	58	92	250	without Battery/Charger

Net weight

(kg)

0,05

0.039

0,05

0,05

0,05

0,05

0,05

0,057

**Application** 

End sleeves

End sleeves

End sleeves

End sleeves

Pre-insulated terminals

Uninsulated terminals

Uninsulated terminals

Uninsulated terminals









### Dies for PVL130P/PVL130S









EB0560





EB4010

RB0560



SA0760



### Elpress Mobile - tool with interchangeable dies



Professional contact crimping tool with interchangeable dies for the installer or service technician.

#### **Properties:**

- reliable, safe, economic and ergonomic tools
- parallel-moving crimping movement with 10 kN crimping force, tested for 20,000 crimps
- change crimping dies quickly and easily in one operation
- the crimping dies are kept together in pairs and stored in custom holders
- wide selection of dies allows you to use one tool frame for 19 different crimping applications!



### **Elpress Mobile**

Mobile hand tool (frame only). Dies are supplementary.

mm²	AWG	Name	Net weight (kg)	Length mm	Width	
0,25-10	24-8	MOBILE	0,554	234	64	_



Elpress Mobile + dies OAA0525 and OEB0210.

### **Mobile Installation**

Mobile hand tool with two interchangeable dies:

- Die OAA0525 for crimping pre-insulated 0.5 2.5 mm² terminals.
- Die OEB0210 for crimping end sleeves 0.25 10 mm².
- The tool comes with associated dies in blister packaging.

Name	Net weight (kg)	Length mm	Width
MOBILE INSTALLATION	0,695	234	64



Elpress Mobile + dies OMP45 and OCC1113.

### Mobile DataCom

Mobile hand tool with two interchangeable dies:

- OMP45 for crimping modular plug RJ45.
- OCC1113 for crimping coaxial contacts RG58, RG59, RG62 and RG71.
- The tool comes with associated dies in blister packaging.

Name	Net weight (kg)	Length mm	Width
MOBILE DATA/COM	0,667	234	64











Elpress Mobile + dies OMS4, OMS3 and OMSL.



Cable stripper LOKE.

### **Mobile Solar Kit**

Mobile hand tool with three interchangeable dies and cable stripper LOKE for stripping solar panel cable with extra thick insulation:

- OMS4, roll crimping of contacts with sleeve Ø 4 mm, 2.5 6.0 mm<sup>2</sup>.
- OMS3, square crimping of contacts with sleeve Ø 3 mm, 2.5 6.0 mm<sup>2</sup>.
- OMSL, square crimping of contacts, 2.5 6.0 mm<sup>2</sup>.

Name	Net weight (kg)	Length mm	Width
MOBILE SOLAR	0,772	234	64









### **Mobile Box**

Box for the mobile tool with room for the tool as well as 5-6 associated dies. Tools and dies are ordered separately.

Name	Net weight (kg)	Length mm	Width	Height
MOBILE BOX	0.32	246	218	57



### Additional dies for Elpress Mobile

All dies have the same quick and easy way of being inserted into the tool frame. The dies are kept together in pairs and supplied in a cassette that can be docked to other cassettes.



**OAA0160** Crimping die for Elpress MOBILE tool for asymmetric crimping of pre-insulated terminals 0.1-4 mm<sup>2</sup> and 4-6 mm<sup>2</sup>. AWG 11-9



OAA0525 Crimping die for Elpress MOBILE tool for asymmetric crimping of pre-insulated terminals 0.5-2.5 mm<sup>2</sup>. AWG 20-13.



OSW0360 Crimping die for Elpress MOBILE tool for crimping through connectors with heat shrink insulation 0.3-0.75 mm<sup>2</sup> and 4-6 mm<sup>2</sup>. AWG 11-9.



OSW0525 Crimping die for Elpress MOBILE tool for crimping through connectors with heat shrink insulation 0.5-1.5 mm<sup>2</sup> and 1.5-2.5 mm<sup>2</sup>. AWG 15-13.



**OPB0140** Crimping die for Elpress MOBILE tool for crimping global power connectors, GPC connectors.



**OPB6099** Crimping die for Elpress MOBILE tool for crimping global power connectors, . GPC connectors.





OWB4099 Crimping die for Elpress MOBILE tool for W crimping of uninsulated terminals 4-10 mm<sup>2</sup>. AWG 11-7.



OKB0725 Crimping die for Elpress MOBILE tool for punch crimping uninsulated terminals 0.75-2.5 mm<sup>2</sup>. AWG 18-13.



OKB0560 Crimping die for Elpress MOBILE tool for punch crimping uninsulated terminals 0.5-6 mm<sup>2</sup>. AWG 20-9.





OEB0210 Crimping die for Elpress MOBILE tool for crimping end sleeves 0.25-10 mm<sup>2</sup>. AWG 24-7.



**OEB1625** Crimping die for Elpress MOBILE tool for crimping end sleeves 16-25  $mm^2$ AWG 5-3.



OEB3550 Crimping die for Elpress MOBILE tool for crimping end sleeves 35-50  $mm^2$ AWG 2-1/0.



OMP11 modular plug



ORB0110 Crimping die for Elpress MOBILE tool for roll crimping uninsulated terminals 0.1-1 mm<sup>2</sup>. AWG 26-17.



ORB0560 Crimping die for Elpress MOBILE tool for roll crimping uninsulated terminals 0.5-6 mm<sup>2</sup>. AWG 20-9.



OMP45 Crimping die for Elpress MOBILE tool for crimping modular plug RJ45.



Crimping die for Elpress MOBILE tool for crimping RJ11.



OFO5432 Crimping die for Elpress MOBILE tool for crimping fibre optic contacts.



OCC0908 Crimping die for Elpress MOBILE tool for crimping coaxial contacts RG174, 179.



OCC1113 Crimping die for Elpress MOBILE tool for crimping coaxial contacts RG58, 59, 62, 71.



OCC4755 Crimping die for Elpress MOBILE tool for crimping coaxial contacts RG6, 59.



OMS4 Dies for Mobile tools for roll crimping contacts with sleeve diameter 4 mm, 2.5-6.0 mm<sup>2</sup>. AWG 13-19.



OMSL Die for square crimping contacts 2.5-6.0 mm<sup>2</sup>. AWG 13-9.





### End terminals 0.14 - 50 mm<sup>2</sup> with associated tool

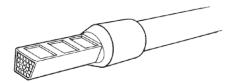
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### General information about end terminals



With Elpress end terminals you avoid splayed conductors and reduce the risk of cable breaks. Moreover, they create a lasting contact pressure and a large contact area.



Crimped End terminal.

### Designation example

Cat. no. A4-12ET

A = pre-insulated

B = uninsulated

4 = area (4 mm<sup>2</sup>)

12 = Length metal sleeve

ET = end terminal

ET2 = TWIN end terminal

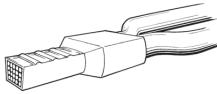


#### **System Elpress**

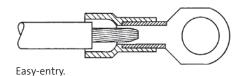
System Elpress consists of terminals and tools that are adapted and tested together for best performance. This ensures that users will feel confident when using our systems, and that a secure terminal is achieved through the proper handling of our products. Using an Elpress crimping tool when crimping an Elpress end terminal means that a terminal is obtained according to DIN 57609.

#### **End sleeves**

Elpress pre-insulated and uninsulated end terminals are made of 99.95% copper and are tin plated. The end terminals have dimensions according to DIN 46228 with a few exceptions (see note in tables). The insulation boot is made of PP (polypropylene) and has a shape comparable to easy-entry, see image. Elpress end terminals are used when you need a perfect connection for the cable end .



Crimped TWIN end terminal.



CSA certification

CSA, Canadian Standards Association, is a Canadian organisation that certifies products according to US standards. Elpress end sleeves of type A..ET / ETT / ETD, B. .. ET, A...ET2/ETT2/ETW2 is CSA certified according to US standard C22.2 No 158 and UL 1059 according to file No. 247206. End terminals of the type A..ET/B...ET/A...ET2 are intended for stranded Cu-conductors 26 AWG to 500 MCM, equivalent to the metric sizes 0.14 mm² to 240 mm². To be used together with Elpress crimping tool.

#### Colour codes for pre-insulated end terminals and TWIN-end terminals

AWG Area mm² Standard colour W Elpress type ET		Colours acc. to DIN 46228 Elpress type ETD	Alternative colour T type ETT	
26	0,14	grey	grey	brown
24	0,25	light blue	yellow	violet
22	0,34	turquoise	turquoise	pink
20	0,50	orange	white	white
18	0,75	white	grey	blue
17	1	yellow	red	red
15	1,5	red	black	black
13	2,5	blue	blue	grey
11	4	grey	grey	orange
9	6	black	yellow	green
7	10	ivory	red	brown
5	16	green	blue	white
3	25	brown	yellow	black
2	35	beige	red	red
1/0	50	olive-green	blue	blue
2/0	70	yellow	yellow	yellow
3/0	95	red	red	red
250	120	blue	blue	blue
300	150	yellow	yellow	yellow



### Hand tools for end terminals

#### Mechanical tools

In the development of a mechanical crimping tool at Elpress, we strive for the best quality and ergonomics in the actual tool, and the best characteristics in the crimped terminal. The tools have a built-in locking system (not the hobby tools) that ensures that the entire crimping process is completed - a prerequisite for professional and quality-assured work.



Elpress Mobile, professional tool with interchangeable dies for the installer or service technician.

#### Miniforce-tools

With the unique Miniforce tools, a new level has been established regarding ergonomic adaptation to the user and low force requirements. This has resulted in a decrease in the grip forces by up to 45% and is the result of an advanced development process where minimisation of the risks of work-related injuries and the best ergonomics have been the deciding factors.



Miniforce type C has longer handles to facilitate two-handed operation, which is often a simple and natural way to reduce the loads. Electrical crimping tools and terminals together constitute a contact crimping system where crimping results are continuously checked against the requirements of established standards such as IEC 60352-2, SEN 245010, DIN 46429, IEC 61238-1 etc. Many of the manual tools have symmetrical crimp positions that make it possible to work from both sides - something that is important for left-handed users. The tools in the Miniforce, D and 50 series are made of very high-grade hardened steel with a black oxide finish and are laser marked.



#### Certification of crimping tools

For quality assurance of our tools, we already certify the manufacture of our crimping tools, both hand tools, type Gxx, i.e. Miniforce tools, and type Dxx.



#### What do we certify?

Certification of the crimping tools means that each individual tool is documented at the final assembly and inspection stage with respect to:

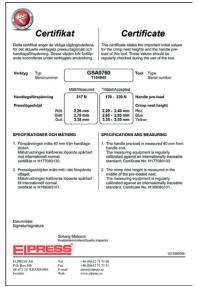
- handle pre-load, which is the force needed to ensure that the lock, which prevents a crimp from being interrupted, is not released too early.
- crimp die nest heights, i.e. the maximum height measurements which can be measured in each indentation with the dies pressed together.

#### Why certification?

The certificate that accompanies the tool serves several functions:

- crimping tools are often directly introduced upon procurement in a quality management system. The tool's status at procurement shall of course be the first thing noted, to then be followed by regular checks where potential changes can be discovered and addressed.
- the certificate shows that each individual tool meets the requirements of the tool's basic specifications.
- the certificate states what the most important characteristics are that shall be followed up.

Elpress' service department offers the possibility of continued follow-up of the quality of the tools.



Certificate that accompanies the tool.



Get your certificate.



Elpress ergonomic Miniforce tool.



# Pre-insulated end terminals 0.14 - 50 mm<sup>2</sup> ET standard colour











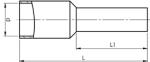


• Material: Cu 99.95%, tin plated Cu/Sn, CSA a	pproved.
------------------------------------------------	----------

D 1				
<ul> <li>Polypropy</li> </ul>	lene insula	ation col	lour code \	N.

	mm² (Cu)	AWG Cu	Name	d mm	L	L1	s	Measures acc DIN46228	Tool	Pcs/pack	
	0,14	26	A0,14-6ET	1,9	10	6	8	Yes	PEB0110T	500	
	0,14	26	A0,14-8ET	1,9	12	8	10	No	PEB0110T	500	
	0,25	24	A0,25-6ET	1,9	10	6	8	No	PEB0110T	100	
	0,25	24	A0,25-8ET	1,9	12	8	10	No	PEB0110T	500	
	0,34	22	A0,34-6ET	1,9	10	6	8	No	PEB0110T	100	
	0,34	22	A0,34-8ET	1,9	12	8	10	No	PEB0110T	100	
	0,5	20	A0,5-6ET	2,4	12	6	8	Yes	PEB0110T	100	
	0,5	20	A0,5-8ET	2,4	14	8	10	Yes	PEB0110T	100	
	0,5	20	A0,5-10ET	2,4	156	10	12	Yes	PEB0110T	100	
	0,75	20	A0,75-6ET	2,8	12	6	8	Yes	PEB0110T	100	
	0,75	20	A0,75-8ET	2,8	14	8	10	Yes	PEB0110T	100	
	0,75	20	A0,75-10ET		16	10	12	Yes	PEB0110T	100	
	0,75	20	A0,75-12ET	2,8	18	12	14	Yes	PEB0110T	100	
	1	18	A1-6ET	3	12	6	8	Yes	PEB0110T	100	
	1	18	A1-8ET	3	14	8	10	Yes	PEB0110T	100	
	1	18	A1-10ET	3	16	10	12	Yes	PEB0110T	100	
	1	18	A1-12ET	3	18	12	14	Yes	PEB0110T	100	
	1,5	16	A1,5-6ET	3,3	12	6	8	No	PEB0110T	500	
	1,5	16	A1,5-8ET	3,3	14	8	10	Yes	PEB0110T	100	
	1,5	16	A1,5-10ET	3,3	16	10	12	Yes	PEB0110T	100	
	1,5	16	A1,5-12ET	3,3	18	12	14	Yes	PEB0110T	500	
	1,5	16	A1,5-18ET	3,3	24	18	20	Yes	PEB0110T18	100	
	2,08	14	A2,08-8ET	3,5	14	8	10	No	PEB0110T	500	
	2,5	14	A2,5-8ET	4,2	15	8	10	Yes	PEB0110T	100	
	2,5	14	A2,5-10ET	4,1	17	10	12	Yes	PEB0110T	500	
	2,5	14	A2,5-12ET	4,2	19	12	14	Yes	PEB0110T	100	
	2,5	14	A2,5-18ET	4,2	25	18	20	Yes	PEB0110T18	100	
ı	4	12	A4-10ET	4,8	17	10	12	Yes	PEB0110T	100	
ı	4	12	A4-12ET	4,8	20	12	14	Yes	PEB0110T	100	
	4	12	A4-18ET	4,8	26	18	20	Yes	PEB0110T18	100	
	6	10	A6-12ET	6,1	20	12	14	Yes	PEB0110T	100	
	6	10	A6-18ET	6,1	26	18	20	Yes	PEB0110T18	100	
	10	8	A10-12ET	7,4	21	12	14	Yes	GEB1025	100	
	10	8	A10-18ET	7,4	27	18	20	Yes	GEB1025	100	
	16	6	A16-12ET	8,8	23	12	14	Yes	GEB1025	100	
	16	6	A16-18ET	8,8	29	18	20	Yes	GEB1025	100	
	25	4	A25-16ET	10,9		16	18	Yes	GEB1025	50	
	25	4	A25-18ET	10,9	31	18	20	Yes	GEB1025	50	
	25	4	A25-22ET	,	35	22	24	Yes	GEB1025	50	
	35	2	A35-16ET	12,3	30	16	18	Yes	GEB3550	50	
	35	2	A35-18ET	12,3	32	18	20	Yes	GEB3550	50	
	35	2	A35-25ET	12,3		25	27	Yes	GEB3550	50	
	50	1/0	A50-20ET	15	36	20	22	Yes	GEB3550	50	
	50	1/0	A50-25ET	15	41	25	27	Yes	GEB3550	25	
ς :	s = strip length										

 $s=strip\ length$  We can also offer end terminals with other colour codes and areas over 50 mm².





### Pre-insulated end terminals 0.14 - 50 mm<sup>2</sup> ETT alternative colour













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- Material: Cu 99.95%, tin plated Cu/Sn, CSA approved.
  Polypropylene insulation, colour code T.

mm² (Cu)	AWG Cu	Name	d mm	L	L1	s	Measures acc DIN46228	Tool	Pcs/ pack
0,14	26	A0,14-6ETT	1,9	10	6	8	No	PEB0110T	500
0,14	26	A0,14-8ETT	1,9	12	8	10	No	PEB0110T	500
0,25	24	A0,25-6ETT	1,9	10	6	8	No	PEB0110T	500
0,25	24	A0,25-8ETT	1,9	12	8	10	No	PEB0110T	500
0,34	22	A0,34-6ETT	1,9	10	6	8	No	PEB0110T	500
0,34	22	A0,34-8ETT	1,9	12	8	10	No	PEB0110T	500
0,5	20	A0,5-6ETT	2,4	12	6	8	No	PEB0110T	500
0,5	20	A0,5-8ETT	2,4	14	8	10	No	PEB0110T	500
0,5	20	A0,5-10ETT	2,4	16	10	12	Yes	PEB0110T	500
0,75	20	A0,75-6ETT	2,8	12	6	8	Yes	PEB0110T	500
0,75	20	A0,75-8ETT	2,8	14	8	10	Yes	PEB0110T	500
0,75	20	A0,75-10ETT	2,8	16	10	12	No	PEB0110T	500
0,75	20	A0,75-12ETT	2,8	18	12	14	No	PEB0110T	500
1	18	A1-6ETT	23	12	6	8	No	PEB0110T	500
1	18	A1-8ETT	3	14	8	10	No	PEB0110T	500
1	18	A1-10ETT	3	16	10	12	No	PEB0110T	500
1	18	A1-12ETT	3	18	12	14	No	PEB0110T	500
1,5	16	A1,5-6ETT	3,3	12	6	8	No	PEB0110T	500
1,5	16	A1,5-8ETT	3,3	14	8	10	No	PEB0110T	500
1,5	16	A1,5-10ETT	3,3	16	10	12	No	PEB0110T	500
1,5	16	A1,5-12ETT	3,3	18	12	14	No	PEB0110T	500
1,5	16	A1,5-18ETT	3,3	24	18	20	No	PEB0110T18	500
2,08	14	A2,08-8ETT	3,5	14	8	10	No	PEB0110T	500
2,5	14	A2,5-8ETT	4,2	15	8	10	No	PEB0110T	500
2,5	14	A2,5-10ETT	4,1	17	10	12	No	PEB0110T	500
2,5	14	A2,5-12ETT	4,2	19	12	14	No	PEB0110T	500
2,5	14	A2,5-18ETT	4,2	25	18	20	No	PEB0110T18	500
4	12	A4-10ETT	4,8	17	10	12	No	PEB0110T	500
4	12	A4-12ETT	4,8	20	12	14	No	PEB0110T	100
4	12	A4-18ETT	4,8	26	18	20	No	PEB0110T18	100
6	10	A6-12ETT	6,1	20	12	14	No	PEB0110T	100
6	10	A6-18ETT	6,1	26	18	20	No	PEB0110T18	100
10	8	A10-12ETT	7,4	21	12	14	No	GEB1025	100
10	8	A10-18ETT	7,4	27	18	20	No	GEB1025	100
16	6	A16-12ETT	8,8	23	12	14	No	GEB1025	100
16	6	A16-18ETT	8,8	29	18	20	No	GEB1025	100
25	4	A25-16ETT	10,9	29	16	18	No	GEB1025	50
25	4	A25-18ETT	10,9	31	18	20	No	GEB1025	50
25	4	A25-22ETT	10,9	35	22	24	No	GEB1025	50
35	2	A35-16ETT	12,3	30	16	18	No	GEB3550	50
35	2	A35-18ETT	12,3	32	18	20	No	GEB3550	50
35	2	A35-25ETT	12,3	39	25	27	No	GEB3550	50
50	1/0	A50-20ETT	15	36	20	22	No	GEB3550	50
50	1/0	A50-25ETT	15	41	25	27	No	GEB3550	25

 $s=strip\ length$  We can also offer end terminals with other colour codes and areas over 50 mm².



# Pre-insulated end terminals 0.14 - 50 mm<sup>2</sup> ETD alternative colour













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<ul> <li>Material: Cu 99.95%, tin plated Cu/Sn. CSA app</li> </ul>	proved.
--------------------------------------------------------------------	---------

Polypropylene insulation, size and colour code according to DIN46228 (see table).

	mm² (Cu)	AWG Cu	Name	d mm	L	L1	s	Measures acc DIN46228	Tool	Pcs/ pack
1	0,14	26	A0,14-6ETD	1,9	10	6	8	No	PEB0110T	500
	0,14	26	A0,14-8ETD	1,9	12	8	10	No	PEB0110T	500
	0,25	24	A0,25-8ETD	1,9	12	8	10	No	PEB0110T	500
	0,34	22	A0,34-6ETD	1,9	10	6	8	No	PEB0110T	500
	0,34	22	A0,34-8ETD	1,9	12	8	10	No	PEB0110T	500
	0,5	20	A0,5-6ETD	2,4	12	6	8	No	PEB0110T	500
	0,5	20	A0,5-8ETD	2,4	14	8	10	No	PEB0110T	500
	0,5	20	A0,5-10ETD	2,4	16	10	12	No	PEB0110T	500
1	0,75	20	A0,75-6ETD	2,8	12	6	8	Yes	PEB0110T	500
1	0,75	20	A0,75-8ETD	2,8	14	8	10	Yes	PEB0110T	100
1	0,75	20	A0,75-10ETD	2,8	16	10	12	Yes	PEB0110T	500
	0,75	20	A0,75-12ETD	2,8	18	12	14	Yes	PEB0110T	500
	1	18	A1-6ETD	3	12	6	8	No	PEB0110T	500
	1	18	A1-8ETD	3	14	8	10	No	PEB0110T	100
	1	18	A1-10ETD	3	16	10	12	No	PEB0110T	500
	1	18	A1-12ETD	3	18	12	14	No	PEB0110T	500
١	1,5	16	A1,5-6ETD	3,3	12	6	8	No	PEB0110T	500
١	1,5	16	A1,5-8ETD	3,3	14	8	10	No	PEB0110T	100
١	1,5	16	A1,5-10ETD	3,3	16	10	12	No	PEB0110T	500
١	1,5	16	A1,5-12ETD	3,3	18	12	14	No	PEB0110T	500
	1,5	16	A1,5-18ETD	3,3	24	18	20	No	PEB0110T18	500
	2,08	14	A2,08-8ETD	3,5	14	8	10	No	PEB0110T	500
	2,5	14	A2,5-8ETD	4,2	15	8	10	No	PEB0110T	500
	2,5	14	A2,5-10ETD	4,1	17	10	12	No	PEB0110T	500
	2,5	14	A2,5-12ETD	4,2	19	12	14	No	PEB0110T	500
	2,5	14	A2,5-18ETD	4,2	25	18	20	No	PEB0110T18	500
1	4	12	A4-10ETD	4,8	17	10	12	No	PEB0110T	500
1	4	12	A4-12ETD	4,8	20	12	14	Yes	PEB0110T	100
ı	4	12	A4-18ETD	4,8	26	18	20	Yes	PEB0110T18	100
	6	10	A6-12ETD	6,1	20	12	14	No	PEB0110T	100
ı	6	10	A6-18ETD	6,1	26	18	20	No	PEB0110T18	100
	10	8	A10-12ETD	7,4	21	12	14	No	GEB1025	100
	10	8	A10-18ETD	7,4	27	18	20	No	GEB1025	100
	16	6	A16-12ETD	8,8	23	12	14	No	GEB1025	100
	16	6	A16-18ETD	8,8	29	18	20	No	GEB1025	100
	25	4	A25-16ETD	10,9		16	18	No	GEB1025	50
	25	4	A25-18ETD	10,9	31	18	20	No	GEB1025	50
	25	4	A25-22ETD	10,9	35	22	24	No	GEB1025	50
	35	2	A35-16ETD	12,3	30	16	18	No	GEB3550	50
	35	2	A35-18ETD	12,3	32	18	20	No	GEB3550	50
	35	2	A35-25ETD	12,3	39	25	27	No	GEB3550	50
	50	1/0	A50-20ETD	15	36	20	22	Yes	GEB3550	50
	50	1/0	A50-25ETD	15	41	25	27	No	GEB3550	25

 $s=strip\ length$  We can also offer end terminals with other colour codes and areas over 50 mm².

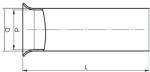
### Uninsulated end terminals 0.25 - 50 mm<sup>2</sup>











• Material: Cu 99.95 %, tin plated Cu/Sn, dimension according to DIN 46228 (see table).

mm²	AWG	Name	d mm	D	L	s	Tool	Measures acc	Pcs/pack
0,25	24	B0,25-5ET	0,8	1,7	5	5	PEB0110T	No	1000
0,25	24	B0,25-7ET	0,8	1,7	7	7	PEB0110T	No	1000
0,34	22	B0,34-5ET	0,9	1,8	5	5	PEB0110T	No	1000
0,34	22	B0,34-7ET	0,9	1,8	7	7	PEB0110T	No	1000
0,5	20	B0,5-6ET	1	2,1	6	6	PEB0110T	Yes	1000
0,5	20	B0,5-8ET	1	2,1	8	8	PEB0110T	No	1000
0,5	20	B0,5-10ET	1	2,1	10	10	PEB0110T	Yes	1000
0,75	20	B0,75-6ET	1,2	2,3	6	6	PEB0110T	Yes	1000
0,75	20	B0,75-8ET	1,2	2,3	8	8	PEB0110T	No	1000
0,75	20	B0,75-10ET	1,2	2,3	10	10	PEB0110T	Yes	1000
0,75	20	B0,75-12ET	1,2	2,3	12	12 6	PEB0110T	No	1000
1 1	18 18	B1-6ET B1-8ET	1,4 1,4	2,5 2,5	6 8	8	PEB0110T PEB0110T	Yes No	1000 1000
1	18	B1-3LT	1,4	2,5	10	10	PEB0110T	Yes	1000
1	18	B1-12ET	1,4	2,5	12	12	PEB0110T	No	1000
1,5	16	B1,5-7ET	1,7	2,8	7	7	PEB0110T	Yes	1000
1,5	16	B1,5-8ET	1,7	2,8	8	8	PEB0110T	No	1000
1,5	16	B1,5-10ET	1,7	2,8	10	10	PEB0110T	Yes	1000
1,5	16	B1,5-12ET	1,7	2,8	12	12	PEB0110T	Yes	1000
1,5	16	B1,5-15ET	1,7	2,8	15	15	PEB0110T	No	1000
1,5	16	B1,5-18ET	1,7	2,8	18	18	PEB0110T	Yes	1000
1,5	16	B1,5-20ET	1,7	2,8	20	20	PEB0110T	No	1000
2,5	14	B2,5-7ET	2,2	3,4	7	7	PEB0110T	Yes	1000
2,5	14	B2,5-8ET	2,2	3,4	8	8	PEB0110T	No	1000
2,5	14	B2,5-10ET	2,2	3,4	10	10	PEB0110T	Yes	1000
2,5	14	B2,5-12ET	2,2	3,4	12	12	PEB0110T	Yes	1000
2,5	14	B2,5-15ET	2,2	3,4	15	15	PEB0110T	No	1000
2,5	14	B2,5-18ET	2,2	3,4	18	18	PEB0110T	Yes	1000
2,5 4	14 12	B2,5-20ET B4-9ET	2,2 2,8	3,4 4	20 9	20 9	PEB0110T	No Yes	1000
4	12	B4-9ET	2,8	4	10	10	PEB0110T PEB0110T	No	1000 1000
4	12	B4-10ET	2,8	4	12	12	PEB0110T	Yes	1000
4	12	B4-15ET	2,8	4	15	15	PEB0110T	Yes	1000
4	12	B4-18ET	2,8	4	18	18	PEB0110T		1000
4	12	B4-20ET	2,8	4	20	20	PEB0110T	No	1000
6	10	B6-10ET	3,5	4,7	10	10	PEB0110T	Yes	250
6	10	B6-12ET	3,5	4,7	12	12	PEB0110T	Yes	250
6	10	B6-15ET	3,5	4,7	15	15	PEB0110T	Yes	250
6	10	B6-18ET	3,5	4,7	18	18	PEB0110T	Yes	250
6	10	B6-20ET	3,5	4,7	20	20	PEB0110T	No	250
6	10	B6-25ET	3,5	4,7	25	25	PEB0110T	No	250
10	8	B10-12ET	4,5	4,7	12	12	GEB1025	No	250
10	8	B10-15ET	4,5	4,7	15	15	GEB1025	No	250
10	8	B10-18ET	4,5	4,7	18	18	GEB1025	No	250
10	8	B10-20ET	4,5	4,7	20	20	GEB1025	No No	250
10 16	8 6	B10-25ET B16-12ET	4,5 5,8	4,7 7,5	25 12	25 12	GEB1025 GEB1025	Yes	250 250
16	6	B16-15ET	5,8	7,5 7,5	15	15	GEB1025	Yes	250
16	6	B16-18ET	5,8	7,5 7,5	18	18	GEB1025	Yes	250
16	6	B16-20ET	5,8	7,5	20	20	GEB1025	No	250
16	6	B16-25ET	5,8	7,5	25	25	GEB1025	Yes	250
16	6	B16-32ET	5,8	7,5	32	32	GEB1025	Yes	250
25	4	B25-12ET	7,3	9,5	12	12	GEB1025	No	250
25	4	B25-15ET	7,3	9,5	15	15	GEB1025	Yes	250
25	4	B25-18ET	7,3	9,5	18	18	GEB1025	Yes	250
25	4	B25-25ET	7,3	9,5	25	25	GEB1025	Yes	100
25	4	B25-32ET	7,3	9,5	32	32	GEB1025	Yes	100
35	2	B35-18ET	8,3	11	18	18	GEB3550	Yes	100
35	2	B35-20ET	8,3	11	20	20	GEB3550	No	100
35	2	B35-22ET	8,3	11	22	22	GEB3550	No	100
35 2E	2	B35-25ET	8,3	11	25	25	GEB3550	Yes	100
35 50	2 1/0	B35-32ET	8,3	11	32 10	32 10	GEB3550	Yes	100 100
50 50	1/0	B50-18ET B50-22ET	10,3 10,3	13 13	18 22	18 22	GEB3550 GEB3550	Yes No	100
50	1/0	B50-25ET	10,3	13	25	25	GEB3550	Yes	100
50	1/0	B50-32ET	10,3	13	32	32	GEB3550	Yes	100
			- /-	-					
s = stri	p length								

s = strip length We can also offer areas over 50 mm².



# Pre-insulated TWIN-end terminals 2 x 0.5 - 2 x 10 mm<sup>2</sup> ET2 standard colour code













• Polypropylene insulation, colour code according to DIN 46228.

	mm² (Cu)	AWG Cu	Name	d mm	D	Н	L	L1	s	Tool	Pcs/ pack
	2 x 0,5	2x20	A0,5-6ET2	1,5	4,5	2,3	13	6	8	PEB0110T	100
	2 x 0,5	2x20	A0,5-8ET2	1,5	4,5	2,3	15	8	10	PEB0110T	100
ı	2 x 0,75	2x20	A0,75-8ET2	1,8	5,1	2,6	15	8	10	PEB0110T	100
ı	2 x 0,75	2x20	A0,75-10ET2	1,8	5,1	2,6	17	10	12	PEB0110T	100
	2 x 0,75	2x20	A0,75-12ET2	1,8	5,1	2,6	19	12	14	PEB0110T	100
	2 x 1	2x18	A1-8ET2	2	5,1	3	15	8	10	PEB0110T	100
	2 x 1	2x18	A1-10ET2	2	5,1	3	17	10	12	PEB0110T	100
	2 x 1	2x18	A1-12ET2	2	5,1	3	19	12	14	PEB0110T	100
	2 x 1,5	2x16	A1,5-8ET2	2,3	6,4	3,5	16	8	10	PEB0110T	100
	2 x 1,5	2x16	A1,5-12ET2	2,3	6,4	3,5	20	12	14	PEB0110T	100
	2 x 2,5	2x14	A2,5-10ET2	2,9	7,5	4	18,5	10	12	PEB0110T	100
	2 x 2,5	2x14	A2,5-13ET2	2,9	7,5	4	21,5	13	15	PEB0110T18	100
ı	2 x 4	2x12	A4-12ET2	3,8	8,6	4,9	23	12	14	GEB4010C-TWIN, PEB0110T	100
	2 x 4	2x12	A4-18ET2	3,8	8,6	4,9	29	18	20	GEB4010C-TWIN, PEB0110T18	100
	2 x 6	2x10	A6-14ET2	4,6	9,6	5,8	25	14	16	GEB4010C-TWIN, PEB0110T18	100
	2 x 6	2x10	A6-18ET2	4,6	9,6	5,8	29	18	20	GEB4010C-TWIN, PEB0110T18	100
	2 x 10	2x8	A10-14ET2	6,5	12,6	7	26	14	16	GEB4010C-TWIN	100

s = strip length

Use the tool socket closest to the total area of the sleeve.

<sup>•</sup> Material: Cu 99.95%, tin plated Cu/Sn. CSA approved.

# Pre-insulated TWIN-end terminals 2 x 0.5 - 2 x 10 mm<sup>2</sup> ETT2 alternative colour code











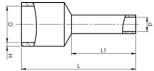


• Polypropylene insulation, colour code type T.

	mm² (Cu)	AWG Cu	Name	d mm	D	Н	L	L1	S	Tool	Pcs/ pack
	2 x 0,5	2x20	A0,5-6ETT2	1,5	4,5	2,3	13	6	8	PEB0110T	500
	2 x 0,5	2x20	A0,5-8ETT2	1,5	4,5	2,3	15	8	10	PEB0110T	500
	2 x 0,75	2x20	A0,75-8ETT2	1,8	5,1	2,6	15	8	10	PEB0110T	500
	2 x 0,75	2x20	A0,75-10ETT2	1,8	5,1	2,6	17	10	12	PEB0110T	500
	2 x 0,75	2x20	A0,75-12ETT2	1,8	5,1	2,6	19	12	14	PEB0110T	500
	2 x 1	2x18	A1-8ETT2	2	5,1	3	15	8	10	PEB0110T	500
	2 x 1	2x18	A1-10ETT2	2	5,1	3	17	10	12	PEB0110T	500
	2 x 1	2x18	A1-12ETT2	2	5,1	3	19	12	14	PEB0110T	500
	2 x 1,5	2x16	A1,5-8ETT2	2,3	6,4	3,5	16	8	10	PEB0110T	500
	2 x 1,5	2x16	A1,5-12ETT2	2,3	6,4	3,5	20	12	14	PEB0110T	500
ı	2 x 2,5	2x14	A2,5-10ETT2	2,9	7,5	4	18,5	10	12	PEB0110T	250
	2 x 2,5	2x14	A2,5-13ETT2	2,9	7,5	4	21,5	13	15	PEB0110T18	250
	2 x 4	2x12	A4-12ETT2	3,8	8,6	4,9	23	12	14	GEB4010C-TWIN, PEB0110T	100
	2 x 4	2x12	A4-18ETT2	3,8	8,6	4,9	29	18	20	GEB4010C-TWIN, PEB0110T18	100
	2 x 6	2x10	A6-14ETT2	4,6	9,6	5,8	25	14	16	GEB4010C-TWIN, PEB0110T18	100
	2 x 6	2x10	A6-18ETT2	4,6	9,6	5,8	26	18	20	GEB4010C-TWIN, PEB0110T18	100
	2 x 10	2x8	A10-14ETT2	6,5	12,6	7	26	14	16	GEB4010C-TWIN	100

s = strip length

Use the tool socket closest to the total area of the sleeve.



<sup>•</sup> Material: Cu 99.95%, tin plated Cu/Sn. CSA approved.

# Pre-insulated TWIN-end terminals 2 x 0.5 - 2 x 10 mm<sup>2</sup> ETW2 alternative colour code

• Material: Cu 99.95%, tin plated Cu/Sn. CSA approved. • Polypropylene insulation, colour code type W.









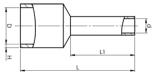




mm² (Cu)	AWG Cu	Name	d mm	D	Н	L	L1	s	Tool	Pcs/ pack
2 x 0,5	2x20	A0,5-6ETW2	1,5	4,5	2,3	13	6	8	PEB0110T	500
2 x 0,5	2x20	A0,5-8ETW2	1,5	4,5	2,3	15	8	10	PEB0110T	500
2 x 0,75	2x20	A0,75-8ETW2	1,8	5,1	2,6	15	8	10	PEB0110T	500
2 x 0,75	2x20	A0,75-10ETW2	1,8	5,1	2,6	17	10	12	PEB0110T	500
2 x 0,75	2x20	A0,75-12ETW2	1,8	5,1	2,6	19	12	14	PEB0110T	500
2 x 1	2x18	A1-8ETW2	2	5,1	3	15	8	10	PEB0110T	500
2 x 1	2x18	A1-10ETW2	2	5,1	3	17	10	12	PEB0110T	500
2 x 1	2x18	A1-12ETW2	2	5,1	3	19	12	14	PEB0110T	500
2 x 1,5	2x16	A1,5-8ETW2	2,3	6,4	3,5	16	8	10	PEB0110T	500
2 x 1,5	2x16	A1,5-12ETW2	2,3	6,4	3,5	20	12	14	PEB0110T	500
2 x 2,5	2x14	A2,5-10ETW2	2,9	7,5	4	18,5	10	12	PEB0110T	250
2 x 2,5	2x14	A2,5-13ETW2	2,9	7,5	4	21,5	13	15	PEB0110T18	250
2 x 4	2x12	A4-12ETW2	3,8	8,6	4,9	23	12	14	GEB4010C-TWIN, PEB0110T	100
2 x 4	2x12	A4-18ETW2	3,8	8,6	4,9	26	18	20	GEB4010C-TWIN, PEB0110T18	100
2 x 6	2x10	A6-14ETW2	4,6	9,6	5,8	25	14	16	GEB4010C-TWIN, PEB0110T18	100
2 x 6	2x10	A6-18ETW2	4,6	9,6	5,8	29	18	20	GEB4010C-TWIN, PEB0110T18	100
2 x 10	2x8	A10-14ETW2	6,5	12,6	7	26	14	16	GEB4010C-TWIN	100

Use the tool socket closest to the total area of the terminal.





### Assortment boxes - end terminals













### **PL800ET with tools**

Elpress assortment boxes for professional use.

#### **Properties:**

- made of polypropylene, insert made of polystyrene
- 11 compartments
- 800 pre-insulated end sleeves 0.5-16 mm² type ET, colour code W
- stripping tool SCT001

mm²	AWG	Name	Net weight (kg)	Length mm	Width	Height
0,5-16	20-6	PL800ET-PEB0116H	0,993	245,5	215,0	56,5
0,5-16	20-6	PL800ET-PEB0116S	0,9885	245,5	215,0	56,5











 $\epsilon$ 



### **RPL5548**

RPL5548 is a complete assortment box for electricians who like to keep things neat and tidy. A system solution for stroring high quality tools and end sleeves that are used daily.

#### **Properties:**

- practical and safe design for stacking. Comes with removable inserts, perfect for easy refilling of terminals.
- $\bullet$  the box contains 1550 end terminals 0.14-10 mm², the PEB0110T crimping tool and the CT10 stripping tool.

mm²	AWG	Name	Net weight (kg)	Length mm	Width	Height	
0,14-10	26-8	RPL5548	1,46	261	338	57	













#### **SD4016**

Elpress hanging assortment box.

#### **Properties:**

- made of plastic
- 5 compartments
- 100 pre-insulated end sleeves 4 16 mm² type ET, colour code W

mm²	AWG	Name	Net weight (kg)	Length mm	Width	Height	
4-16	12-6	SD4016	0,104	165,0	58,0	38,0	













#### SD0525

Elpress hanging assortment box.

#### **Properties:**

- made of plastic
- 5 compartments
- 400 pre-insulated end sleeves 0.5 2.5 mm² type ET, colour code W

mm²	AWG	Name	Net weight (kg)	Length mm	Width	Height
0,5-2,5	20-14	SD0525	0,106	165,0	58,0	38,0



# Miniforce tool for end terminals 0.14 - 16 mm<sup>2</sup> with measuring certificate





- small and compact, ideal for confined spaces
- locking function which only releases once crimping is complete
- well balanced so the tool does not slip out of your hand
- high friction grip allows the tool to be used with a table as support
- custom hole to attach a safety line
- ergonomically designed handle made of grip friendly material
- minimum handle force required when crimping larger areas
- emergency release if the crimping process has to be interrupted
- tested with Elpress terminals
- supplied with certificate for basic quality monitoring



#### **PEB0116S**

Tested and certified mechanical Miniforce hand tool for crimping end terminals 0.14-16 mm<sup>2</sup> with square crimping.

mm²	AWG	Name	Crimp geometry	Net weight (kg)	Length	Width
0,14-16,0	26-6	PEB0116S	Square	0,371	176	62







#### PEB0116H

Tested and certified mechanical Miniforce hand tool for crimping end terminals 0.14-16 mm<sup>2</sup> with hexagonal crimping.

mm²	AWG	Name	Crimp geometry	Net weight (kg)	Length	Width
0,14-16,0	26-6	PEB0116H	Hexagonal	0,379	176	62

Crimp geometry





### PEB0110T and PEB0110T18

Tested and certified mechanical Miniforce hand tools for crimping end terminals 0.14-10 mm².

#### Special properties:

- Rotating die
- Front and side feed

n	nm²	AWG/ MCM (Cu)	Name	Crimp geometry	Net weight (kg)	Length	Width
0	,14-10	26-8			0,385	180	65
0	,14-10	26-8	PEB0110T18	Trapezoid	0,300	180	25





## Miniforce-tool for end terminals 0.25 - 4 mm<sup>2</sup> with measurement certificates



#### **Properties:**

- locking function which only releases once crimping is complete
- emergency release if the crimping process has to be interrupted
- symmetrical and clearly marked crimping positions
- adjustable for changes after long use
- tested with Elpress terminals
- unique mechanism that reduces maximum handle force from 450 N right down to 250 N (model C)
- ergonomic handle suitable for all users
- maximises the quality of work
- reduces the risk of occupational injuries
- $\bullet$  light and versatile design without sacrificing on strength
- model C has extra long handles for the use of both hands
- withstands at least 80,000 crimps
- supplied with certificate for basic quality monitoring





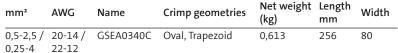


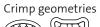


#### GSEA0340C



Tested and certified mechanical Miniforce hand tool for crimping pre-insulated terminals 0.5-2.5 mm<sup>2</sup> as well as pre-insulated and uninsulated end sleeves 0.25-4 mm<sup>2</sup>.







## Miniforce tool for end terminals 0.1 - 6 mm<sup>2</sup> and TWIN end terminals 2 x 0.5 - 2 x 10 mm<sup>2</sup>



#### **Properties**

- locking function which only releases once crimping is complete
- emergency release if the crimping process has to be interrupted
- clearly marked crimping positions
- adjustable in case of changes due to long-term use
- tested with Elpress terminals
- ergonomic handle suitable for all users
- maximises the quality of work
- reduces the risk of occupational injuries
- light and versatile design without compromising durability
- model C has extra long handles for the use of both hands
- withstands at least 80,000 crimps
- supplied with certificate for basic quality monitoring









#### **GEB4010C-TWIN**



Tested and certified mechanical Miniforce hand tool for crimping pre-insulated TWIN end terminals  $2 \times 4-2 \times 10 \text{ mm}^2$ .

mm²	AWG	Name	Crimp geometry	Net weight (kg)	Length mm	Width
4-10	12-8	GEB4010C-TWIN	Trapezoid	0,618	256	80











#### PZD3



Tested and certified mechanical hand tool for crimping end terminals  $0.5-6 \text{ mm}^2$  and insulated TWIN end terminals  $2 \times 0.5-2 \times 4 \text{ mm}^2$ .

#### Special properties:

- a crimp mode that automatically adjusts itself
- front-fed
- can handle crimp lengths up to 17 mm

mm²	AWG	Name	Crimp geometry	Net weight (kg)	Length mm	Width
0,5-6	20-10	PZD3	Rectangle	0,472	192	66





### Miniforce tool for end terminals 4 - 50 mm<sup>2</sup> with measurement certificate



#### **Properties:**

- locking function which only releases once crimping is complete
- emergency release if the crimping process has to be interrupted
- clearly marked crimping positions
- adjustable in case of changes due to long-term use
- tested with Elpress terminals
- ergonomic handle suitable for all users
- maximises the quality of work
- reduces the risk of occupational injuries
- light and versatile design without compromising durability
- model C has extra long handles for the use of both hands
- withstands at least 80,000 crimps
- supplied with certificate for basic quality monitoring









#### **GEB4010C**



Tested and certified mechanical Miniforce hand tool for crimping end terminals 4-10 mm<sup>2</sup>.

mm²	AWG	Name	Crimp geometry	Net weight (kg)	Length mm	Width
4-10	12-8	GEB4010C	Trapezoid	0,615	256	80

#### Crimp geometry



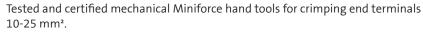


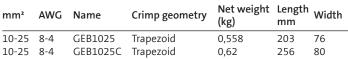






### **GEB1025** and **GEB1025C**

















Crimp geometry













### GEB3550 and GEB3550C





Tested and certified mechanical Miniforce hand tools for crimping end terminals 35-50 mm<sup>2</sup>.

mm²	AWG	Name	Crimp geometry	Net weight (kg)	Length mm	Width
35-50	2	GEB3550	Trapezoid	0,558	203	76
35-50	2	GEB3550C	Trapezoid	0,614	256	80





### Battery-powered crimping tools for pre-insulated 0.5 - 6 mm² terminals, uninsulated 0.25 - 10 mm² terminals and 0.5 - 50 mm<sup>2</sup> end sleeves

#### **Properties:**

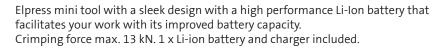
- Li-ion battery powered (10.8 V and 2 Ah), charging time about 40 min
- very good accessibility and ergonomics
- service and installation tools
- fast crimping process 2 4 sec
- approximately 230 crimps/battery charge
- dies for the tool sold separately







## **C** € PVL130P - Elpress Mini



#### **Properties:**

- · one-handed operation for easy control of all tool functions
- · durable crimping head for long service life
- optimal crimping thanks to parallel-moving dies
- easy to use due to its low weight
- high-performance 10.8 V Li-Ion battery with indication of charge status
- · open head, rotating
- easy and comfortable to use one handed thanks to its ergonomic 2-component housing with grip-friendly protection
- · automatic return of dies when crimping is complete

mm² (Cu)	AWG (Cu)	Name	Net weight (kg)	Length	Width	Height	Note
0,25-50	24-1/0	PVL130P	1,5	330	85	60	Charger: 230VAC
0,25-50	24-1/0	PVL130P-US	1,5	330	85	60	Charger: 115VAC
0,25-50	24-1/0	PVL130P-WOBC	0,91	330	85	60	without Battery/ Charger









PVL130P - Elpress MINI, dies sold separately.



PVL130P, case and charger.







### PVL130S - Elpress Mini

Elpress mini tools with intuitive PowerSense function combine the benefits of manual crimping tools with the benefits of battery-powered hydraulic crimping

Crimping force max. 15 kN. 1 x Li-ion battery and charger included.



- one-handed operation for easy control of all tool functions
- electronic control with locking function and monitoring for complete closure of
- safety loop used as fall protection when used outdoors
- motor protection ensures safety in case of overload
- easy and comfortable to use one handed thanks to its ergonomic 2-component housing with grip-friendly protection
- very low weight and fast crimping process for maximum efficiency
- powerful driving technology allows for easy crimps
- high-performance 10.8 V Li-Ion battery with indication of charge status
- LED work lighting
- Die pair SA0760 comes with the tool

mm² (Cu)	AWG (Cu)	Name	Net weight (kg)	Length	Width	Height	Note
0,25-50	24-1/0	PVL130S	1,5	58	92	250	Charger: 230VAC
0,25-50	24-1/0	PVL130S-US	1,5	58	92	250	Charger: 115VAC
0,25-50	24-1/0	PVL130S-WOBC	0,91	58	92	250	without Battery/ Charger



PVL130S - Elpress MINI, supplied with die pair SA0760.







### Dies for PVL130P/PVL130S







KB0325



FB3550

RB0560

EB0560



WB4099



EB4010



mm<sup>2</sup> AWG Net weight **Application** Name Crimp geometry (Cu) (Cu) (kg) 0,5-6 20-10 SA0760 Oval 0,05 Pre-insulated terminals 0,25-2,5 22-14 KB0325 Tab 0,039 Uninsulated terminals Uninsulated terminals WB4099 0,05 4-10 12-8 W 0,5-6 20-10 RB0560 Roll 0,05 Uninsulated terminals Trapezoid End sleeves 0,5-6 20-10 EB0560 0,057 Trapezoid End sleeves 4-10 12-8 EB4010 0,05 10-25 6-4 EB1025 Trapezoid 0,05 End sleeves 0,05 35-50 EB3550 Trapezoid End sleeves 2-0



### Elpress Mobile - tool with interchangeable dies



Professional contact crimping tool with interchangeable dies for the installer or service technician.

#### **Properties:**

- reliable, safe, economic and ergonomic tools
- parallel-moving crimping movement with 10 kN crimping force, tested for 20,000 crimps
- change crimping dies quickly and easily in one operation
- the crimping dies are kept together in pairs and stored in custom holders
- wide selection of dies allows you to use one tool frame for 19 different crimping applications!



### **Elpress Mobile**

Mobile hand tool (frame only). Dies are supplementary.

mm²	AWG	Name	Net weight (kg)	Length mm	Width
0,25-10	24-8	MOBILE	0,554	234	64



Elpress Mobile + dies OAA0525 and OEB0210.

### **Mobile Installation**

Mobile hand tool with two interchangeable dies:

- Die OAA0525 for crimping pre-insulated 0.5 2.5 mm² terminals.
- Die OEB0210 for crimping end sleeves 0.25 10 mm².
- The tool comes with associated dies in blister packaging.

Name	Net weight (kg)	Length mm	Width
MOBILE INSTALLATION	0,695	234	64



Elpress Mobile + dies OMP45 and OCC1113.

### Mobile DataCom

Mobile hand tool with two interchangeable dies:

- OMP45 for crimping modular plug RJ45.
- OCC1113 for crimping coaxial contacts RG58, RG59, RG62 and RG71.
- The tool comes with associated dies in blister packaging.

Name	Net weight (kg)	Length mm	Width
MOBILE DATA/COM	0,667	234	64











### **Mobile Box**

Box for the mobile tool with room for the tool as well as 5-6 associated dies. Tools and dies are ordered separately.

Name	Net weight (kg)	Length mm	Width	Height
MOBILE BOX	0,32	246	218	57



### Additional dies for Elpress Mobile

All dies have the same quick and easy way of being inserted into the tool frame. The dies are kept together in pairs and supplied in a cassette that can be docked to other cassettes.



**OAA0160** Crimping die for Elpress MOBILE tool for asymmetric crimping of pre-insulated terminals 0.1-4 mm<sup>2</sup> and 4-6 mm<sup>2</sup>. AWG 11-9



OAA0525 Crimping die for Elpress MOBILE tool for asymmetric crimping of pre-insulated terminals 0.5-2.5 mm<sup>2</sup>. AWG 20-13.



OSW0360 Crimping die for Elpress MOBILE tool for crimping through connectors with heat shrink insulation 0.3-0.75 mm<sup>2</sup> and 4-6 mm<sup>2</sup>. AWG 11-9.



OSW0525 Crimping die for Elpress MOBILE tool for crimping through connectors with heat shrink insulation 0.5-1.5 mm<sup>2</sup> and 1.5-2.5 mm<sup>2</sup>. AWG 15-13.



**OPB0140** Crimping die for Elpress MOBILE tool for crimping global power connectors, GPC connectors.



**OPB6099** Crimping die for Elpress MOBILE tool for crimping global power connectors, . GPC connectors.





OWB4099 Crimping die for Elpress MOBILE tool for W crimping of uninsulated terminals 4-10 mm<sup>2</sup>. AWG 11-7.



OKB0725 Crimping die for Elpress MOBILE tool for punch crimping uninsulated terminals 0.75-2.5 mm<sup>2</sup>. AWG 18-13.



OKB0560 Crimping die for Elpress MOBILE tool for punch crimping uninsulated terminals 0.5-6 mm<sup>2</sup>. AWG 20-9.





**OEB0210** Crimping die for Elpress MOBILE tool for crimping end sleeves 0.25-10 mm<sup>2</sup>. AWG 24-7.



**OEB1625** Crimping die for Elpress MOBILE tool for crimping end sleeves 16-25  $mm^2$ AWG 5-3.



OEB3550 Crimping die for Elpress MOBILE tool for crimping end sleeves 35-50  $mm^2$ AWG 2-1/0.



OMP11 Crimping die for Elpress MOBILE tool for crimping modular plug RJ11.



ORB0110 Crimping die for Elpress MOBILE tool for roll crimping uninsulated terminals 0.1-1 mm<sup>2</sup>. AWG 26-17.



ORB0560 Crimping die for Elpress MOBILE tool for roll crimping uninsulated terminals 0.5-6 mm<sup>2</sup>. AWG 20-9.



OMP45 Crimping die for Elpress MOBILE tool for crimping modular plug RJ45.





OFO5432 Crimping die for Elpress MOBILE tool for crimping fibre optic contacts.



OCC0908 Crimping die for Elpress MOBILE tool for crimping coaxial contacts RG174, 179.



OCC1113 Crimping die for Elpress MOBILE tool for crimping coaxial contacts RG58, 59, 62, 71.



OCC4755 Crimping die for Elpress MOBILE tool for crimping coaxial contacts RG6, 59.



OMS4 Dies for Mobile tools for roll crimping contacts with sleeve diameter 4 mm, 2.5-6.0 mm<sup>2</sup>. AWG 13-19.



OMSL Die for square crimping contacts 2.5-6.0 mm<sup>2</sup>. AWG 13-9.





### Uninsulated terminals 0.15 - 10 mm<sup>2</sup> with associated tools

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Hobby tools for pre-insulated and uninsulated 0.5 - 6 mm² terminals	
T50, T51 and T52 Hobby tool	
Tool for uninsulated terminals 0.15 - 6 mm²	
TRB0515B, DRB0115 and DKB0325	
DKB0760	
Miniforce tool for uninsulated terminals 0.5 - 10 mm²	
GRB0560L and GRB0560LC	
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### General information about uninsulated terminals



#### **System Elpress**

System Elpress consists of terminals and tools that are designed and tested together to give a certified crimping result. This ensures that users will feel confident when using our systems, and that a secure connection will be achieved through the proper handling of our products.

#### **Uninsulated terminals**

Elpress through connectors, ring, pipe, fork and pin terminals are made of high-quality copper 99.95%. The receptacles and sockets are made of brass. All terminals are then electro-tin plated for maximum corrosion protection. Terminals made of copper bands have a brazed neck which is soldered, which means that it can be crimped in any direction.



Examples of crimps using Elpress uninsulated terminals.

#### Marking of uninsulated terminals

Elpress uninsulated terminals are marked with logotype, area and any screw diameter to facilitate work and checkability.

#### Designation example

Cat no B1532R (G, HO, FLS etc)

B = uninsulated

15 = Area (1.5 mm<sup>2</sup>)

32 = Characteristic dimension (Hole 3.2 mm)

G = fork terminals

GS = fork terminal

H = tabs (male)

HN = tab with locking lip

HA = bullet

HO = socket

R = ring terminals

SR = pin terminal

FLS = receptacle, rolled type

FLSB = receptacle 90 rolled type FLSH = receptacle w male rolled type

FLSN = receptacle w locking lip rolled model

FLSV = receptacle angled rolled model

#### Screw and washer

The following apply for bright galvanized type nuts and screws, with strength class 8.8, used for connecting terminals with Cu and Al palms:

- Always use a torque wrench to be certain the right torque is achieved. Make sure it is calibrated at regular intervals according to the supplier's instructions.
- Use the recommended torque according to the screw manufacturer's instructions
- Always use a hard flat washer to reduce friction against the connection surface and the edge pressure, hardness min HB200.
- Install as illustrated.

#### **IEC** recommendations

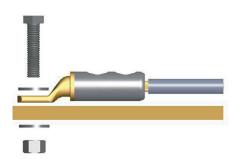
IEC - The International Electrical Commission - publishes internationally viable standards which, although not directly binding, often have great impact and are used as the basis for international deliveries. A technical report, IEC 61238-2, sets out the following recommendations regarding screw sizes for connecting terminals with Cu and Al plate provided that mounting takes place with a washer and with the correct tightening torque.

Conductor area, mm <sup>2</sup>	Screw	
10	M6	
16-50	M8	
70-95	M10	
120-300	M12	
400-500	M16	



#### **UL-approved terminals**

UL is a US standard that is also internationally accepted. Elpress standard Cu-terminals type KR/KS, KRF/KSF are UL approved acc. to file no. E205350.



#### Hand tools for uninsulated terminals

#### Mechanical tools

In the development of a mechanical crimping tool at Elpress, we strive for the best quality and ergonomics in the actual tool, and the best characteristics in the crimped terminal. The tools have a built-in locking system (not the hobby tools) that ensures that the entire crimping process is completed - a prerequisite for professional and quality-assured work.



Elpress Mobile, professional tool with interchangeable dies for the installer or service technician.

#### Miniforce-tools

With the unique Miniforce tools, a new level has been established regarding ergonomic adaptation to the user and low force requirements. This has meant a decrease in the grip forces by up to 45% and is the result of an advanced development process where minimisation of the risks of work-related injuries and the best ergonomics have been the deciding factors.



Miniforce type C has longer handles to facilitate two-handed operation, which is often a simple and natural way to reduce the loads. Electrical crimping tools and terminals together constitute a contact crimping system where crimping results are continuously checked against the requirements of established standards such as IEC 60352-2, SEN 245010, DIN 46429, IEC 61238-1 etc. Many of the manual tools have symmetrical crimp positions that make it possible to work from both sides - something that is important for left-handed users. The tools in the Miniforce, D and 50 series are made of very high-grade hardened steel with a black oxide finish and are laser marked.



#### Certification of crimping tools

For quality assurance of our tools, we already certify the manufacture of our crimping tools, both hand tools, type Gxx, i.e. Miniforce tools, and type Dxx.



#### What do we certify?

Certification of the crimping tools means that each individual tool is documented at the final assembly and inspection stage with respect to:

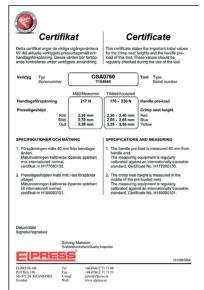
- handle pre-load, which is the force needed to ensure that the lock, which prevents a crimp from being interrupted, is not released too early.
- crimp die nest heights, i.e. the maximum height measurements which can be measured in each indentation with the dies pressed together.

#### Why certification?

The certificate that accompanies the tool serves several functions:

- crimping tools are often directly introduced upon procurement in a quality management system. The tool's status at procurement shall of course be the first thing noted, to then be followed by regular checks where potential changes can be discovered and addressed.
- the certificate shows that each individual tool meets the requirements of the tool's basic specifications.
- the certificate states what the most important characteristics are that shall be followed up.

Elpress' service department offers the possibility of continued follow-up of the quality of the tools.



Certificate that accompanies the tool.



Get your certificate.



Elpress ergonomic Miniforce tool.



### Ring terminal 0.25 - 6 mm²

• Material: Cu 99.95%, tin plated, brazed neck.

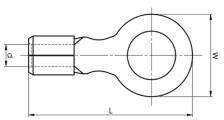










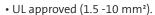


mm² (Cu)	AWG Cu	Name	Screw	W mm	d	L	t	s	Neck type	Tool	Pcs/pack
0,25-0,75	24-20	B0832R	M3	5,5	1,3	13	0,5	7	Brazed	DKB0325	100
0,25-0,75	24-20	B0843R	M4	7,5	1,3	16,2	0,5	7	Brazed	DKB0325	100
0,25-0,75	24-20	B0853R	M5	9	1,3	17	0,5	7	Brazed	DKB0325	100
0,75-1,5	20-16	B1532R	M3	5,5	1,8	14	0,7	7	Brazed	DKB0325, DKB0760	100
0,75-1,5	20-16	B1543R	M4	7	1,8	16	0,7	7	Brazed	DKB0325, DKB0760	100
0,75-1,5	20-16	B1553R	M5	9	1,8	18	0,7	7	Brazed	DKB0325, DKB0760	100
0,75-1,5	20-16	B1565R	M6	11	1,8	21,5	0,7	7	Brazed	DKB0325, DKB0760	100
0,75-1,5	20-16	B1585R	M8	14	1,8	23	0,7	7	Brazed	DKB0325, DKB0760	100
0,75-1,5	20-16	B1510R	M10	16,5	1,8	25,8	0,7	7	Brazed	DKB0325, DKB0760	100
1,5-2,5	16-14	B2532R	M3	6	2,3	15	0,8	8	Brazed	DKB0325, DKB0760	100
1,5-2,5	16-14	B2537R	M3,5	6	2,4	14	0,8	7	Brazed	DKB0325, DKB0760	100
1,5-2,5	16-14	B2543R	M4	7	2,4	16	0,8	8	Brazed	DKB0325, DKB0760	100
1,5-2,5	16-14	B2553R	M5	9	2,4	18	0,8	8	Brazed	DKB0325, DKB0760	100
1,5-2,5	16-14	B2565R	M6	11	2,4	21,5	0,8	8	Brazed	DKB0325, DKB0760	100
1,5-2,5	16-14	B2585R	M8	14	2,4	23	0,8	8	Brazed	DKB0325, DKB0760	100
1,5-2,5	16-14	B2510R	M10	16,5	2,4	25,75	0,7	8	Brazed	DKB0325, DKB0760	100
4-6	12-10	B4643R	M4	7,8	3,4	17,5	1	9	Brazed	DKB0760	100
4-6	12-10	B4653R	M5	9	3,4	18	1	9	Brazed	DKB0760	100
4-6	12-10	B4665R	M6	11	3,4	21,5	1	9	Brazed	DKB0760	100
4-6	12-10	B4685R	M8	14	3,4	24	1	9	Brazed	DKB0760	100
4-6	12-10	B4610R	M10	17	3,4	27,5	1	9	Brazed	DKB0760	100
4-6	12-10	B4613R	M13	19,2	3,4	32,5	1	9	Brazed	DKB0760	100

 $t = palm \ thickness, \ s = strip \ length$ 

#### Tube terminal 0.75 - 10 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn.
- For multi-stranded (Class 5) and get-stranded (Class 2) Cu conductors.













### Examples of plate marking KR: 10 10 10 = mm<sup>2</sup> 10 = Plate hole for M10



mm²	AWG	Manaa	C = = = =	W	_	N	N14	Р		t	_	Tool	Inspection	Pcs/	Die
(Cu)	Cu	Name	Screw	mm	d	IN	N1	Р	L	·	S	Tool	hole	pack	Die
0,75	(22)-18	KR0,75-3	M3	6	1,3	3,2	3,8	7	17	0,85	7,5	DKB0325, DKB0760	No	100	
0,75	(22)-18	KR0,75-4	M4	6	1,3	3,2	3,5	6,7	17	0,8	7,5	DKB0325, DKB0760	No	100	
1,5	(18)-16	KR1,5-3	M3	6,5	1,8	3,4	3,6	7	16	1	7,5	DKB0325, DKB0760	No	100	
1,5	(18)-16	KR1,5-4	M4	6,5	1,8	4,2	3,8	8	17	0,9	7,5	DKB0325, DKB0760	No	100	
1,5	(18)-16	KR1,5-5	M5	7,5	1,8	4,8	4,7	9,5	18	0,85	7,5	DKB0325, DKB0760	No	100	
2,5	(16)-14	KR2,5-3	M3	7,5	2,3	3,5	4,1	7,6	17	1,3	7	DKB0325, DKB0760	No	100	
2,5	(16)-14	KR2,5-4	M4	7,5	2,3	4,2	4,1	8,3	18	1,3	7	DKB0325, DKB0760	No	100	
2,5	(16)-14	KR2,5-5	M5	8,5	2,3	4,8	4,8	9,6	19	1,1	7	DKB0325, DKB0760	No	100	
2,5	(16)-14	KR2,5-6	M6	8,5	2,4	5,1	5,8	10,9	19	1,1	7	DKB0325, DKB0760	No	100	
4	12	KR4-3	M3	8,5	3	4,2	5,8	10	21	1,5	8,5	GWB4099, ES2258	Yes	100	
4	12	KR4-4	M4	8,5	3	4,2	5,8	10	22	1,5	8,5	GWB4099, ES2258	Yes	100	
4	12	KR4-5	M5	9	3	4,8	5,2	10	22	1,5	8,5	GWB4099, ES2258	Yes	100	
4	12	KR4-6	M6	9,9	3	5	7	12	23	1,3	8,5	GWB4099, ES2258	Yes	100	
6	10	KR6-4	M4	9,5	4	4	6	10	22	1,7	8,5	GWB4099, ES2258	Yes	100	
6	10	KR6-5	M5	9,5	4	5	6	11	22	1,7	8,5	GWB4099, ES2258	Yes	100	
6	10	KR6-6	M6	9,9	4	5,5	6,5	12	23	1,6	8,5	GWB4099, ES2258	Yes	100	
6	10	KR6-8	M8	13	4	7	10	17	30	1,2	8,5	GWB4099, ES2258	Yes	100	
10	8	KR10-4	M4	11,5	5	6	8	14	29	2,9	11	GWB4099, ES2258, PVL350, V600, DV1300	Yes	100	8
10	8	KR10-5	M5	11,5	5	6	7,5	13,5	29	2,9	11	GWB4099, ES2258, PVL350, V600, DV1300	Yes	100	8
10	8	KR10-6	M6	11,5	5	6	7,5	13,5	29	3	11	GWB4099, ES2258, PVL350, V600, DV1300	Yes	100	8
10	8	KR10-8	M8	13,5	5	7,5	8,5	16	33	2,3	11	GWB4099, ES2258, PVL350, V600, DV1300	Yes	100	8
10	8	KR10-10	M10	16	5	8	10	18	34	2	11	GWB4099, ES2258, PVL350, V600, DV1300	Yes	100	8
10	8	KR10-12	M12	18,5	5	10	13,5	23,5	41	1,7	11	GWB4099, ES2258, PVL350, V600, DV1300	Yes	100	8

t = palm thickness, s = strip length



#### Fork terminals 0.25 - 10 mm<sup>2</sup>

• Material: Cu 99.95%, tin plated Cu/Sn, brazed neck.

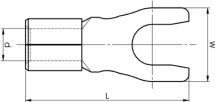












mm² (Cu)	AWG Cu	Name	Screw	W mm	d	L	t	s	Neck type	Tool	Pcs/ pack
0,25-0,75	24-20	B0832G	M3	5,5	1,3	13	0,5	7	Brazed	DKB0325	100
0,25-0,75	24-20	B0843G	M4	6,2	1,3	16,2	0,5	7	Brazed	DKB0325	100
0,75-1,5	20-16	B1532G	M3	5,5	1,8	14	0,7	7	Brazed	DKB0325, DKB0760	100
0,75-1,5	20-16	B1537GS	M3,5	5,5	1,8	16,2	0,7	7	Brazed	DKB0325, DKB0760	100
0,75-1,5	20-16	B1543G	M4	7	1,8	16,2	0,7	7	Brazed	DKB0325, DKB0760	100
0,75-1,5	20-16	B1553G	M5	9	1,8	18	0,7	7	Brazed	DKB0325, DKB0760	100
1,5-2,5	16-14	B2532G	M3	5,5	2,4	13	0,8	8	Brazed	DKB0325, DKB0760	100
1,5-2,5	16-14	B2543G	M4	7	2,4	16,2	0,8	8	Brazed	DKB0325, DKB0760	100
1,5-2,5	16-14	B2553G	M5	9	2,4	18	0,8	8	Brazed	DKB0325, DKB0760	100
4-6	12-10	B4643G	M4	7,8	3,4	17,4	1	9	Brazed	DKB0760, GWB4099	100
4-6	12-10	B4653G	M5	9	3,4	18	1	9	Brazed	DKB0760, GWB4099	100
10	8	B9953G	M5	10,5	4,5	24	1,1	11	Brazed	GWB4099	100
10	8	B9965G	M6	10,5	4,5	24	1,1	11	Brazed	GWB4099	100

t = palm thickness, s = strip length

### Pin terminals 0.25 - 6 mm<sup>2</sup>

• Material: Cu 99.95%, tin plated Cu/Sn, brazed neck.

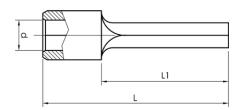












mm² (Cu)	AWG Cu	Name	W mm	d	L	L1	S	Neck type	Tool	Pcs/ pack
0,25-0,75	24-20	B0819SR	1,8	1,3	17,5	12	7	Brazed	DKB0325	100
0,75-1,5	20-16	B1519SR	1,7	1,8	17	12	7	Brazed	DKB0325, DKB0760	100
1,5-2,5	16-14	B2519SR	1,9	2,4	17	12	8	Brazed	DKB0325, DKB0760	100
4-6	12-10	B4630SR	2,7	3,4	20,8	14	9	Brazed	DKB0760	100

s = strip length



### Jointing sleeves 0.75 - 10 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn.
- UL approved (not KS0,75)



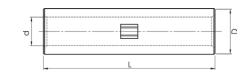












mm² (Cu)	AWG Cu	Name	d mm	D	L	s	Tool	Pcs/ pack	Die
0,75	(22)-18	KS0,75	1,3	2,8	14	7	DKB0325, DKB0760	100	
1,5	(18)-16	KS1,5	1,8	3,3	14	7	DKB0325, DKB0760	100	
2,5	(16)-14	KS2,5	2,3	4,2	16	8	DKB0325, DKB0760	100	
4	12	KS4	3	5	19	9	GWB4099, ES2258	100	
6	10	KS6	4	6	19	9	GWB4099, ES2258	100	
10	8	KS10	5	8	30	15	GWB4099, ES2258, PVL350, V600, DV1300	100	8

s = strip length

### Receptacles rolled type 0.5 - 6 mm<sup>2</sup>

• Material: brass/Cu, tin plated Cu/Sn.

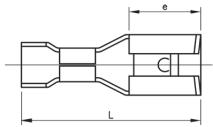












mm² (Cu)	AWG Cu	Name	e mm	L	t	s	For tab	Tool	Pcs/ pack
0,5-1	20-18	B1003FLS5	6	14	0,25	7	2,8x0,5	DRB0115	100
0,5-1	20-18	B1003FLS8	5	12,7	0,3	7	2,8x0,8	DRB0115	100
0,75-1,5	20-16	B1505FLS5-1	6,4	16	0,4	7	4,8x0,5	GRB0560	100
0,75-1,5	20-16	B1505FLS8-1	6,4	16	0,4	7	4,8x0,8	GRB0560	100
0,75-1,5	20-16	B1507FLS1	7,6	19	0,4	7	6,3x0,8	GRB0560	100
1,5-2,5	16-14	B2505FLS5	6	15,6	0,35	8	4,8x0,5	GRB0560	100
1,5-2,5	16-14	B2505FLS8	6	16	0,4	8	4,8x0,8	GRB0560	100
1,5-2,5	16-14	B2507FLS1	7,6	19	0,4	8	6,3x0,8	GRB0560	100
4-6	12-10	B4607FLS1	7,6	19	0,4	8	6,3x0,8	GRB0560	100

 $t = metal\ thickness,\ s = strip\ length$ 

### Receptacles with locking lip rolled type 0.5 - 6 mm<sup>2</sup>

• Material: brass/Cu, tin plated Cu/Sn.

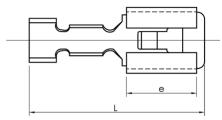












mm² (Cu)	AWG Cu	Name	t mm	e	L	S	For tab	Tool	Pcs/pack
0,5-1,5	20-16	B1507FLSN	0,4	7,5	19,2	7	6,3x0,8	GRB0560	100
1,5-2,5	16-14	B2507FLSN	0,4	7,5	19	8	6,3x0,8	GRB0560	100
4-6	12-10	B4607FLSN	0,4	7,5	19	9	6,3x0,8	GRB0560	100

t = metal thickness, s = strip length



### Multiple tabs, rolled type (piggy back) 0.5 - 2.5 mm<sup>2</sup>

• Material: brass/Cu, tin plated Cu/Sn.

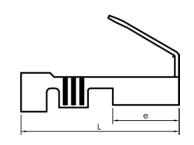












mm² (Cu)	AWG Cu	Name	t mm	e	L	s	For tab	Tool	Pcs/pack
0,5-1,5	20-16	B1507FLSH	0,4	8	20	7	6,3x0,8	GRB0560	100
1,5-2,5	16-14	B2507FLSH	0,4	8	20	7	6,3x0,8	GRB0560	100

t = metal thickness, s = strip length

### Receptacles 90° rolled type 0.5 - 1.5 mm<sup>2</sup>

• Material: brass/Cu, tin plated Cu/Sn.

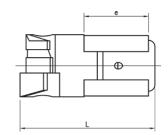












mm² (Cu)	AWG Cu	Name	t mm	e	L	s	For tab	Tool	Pcs/pack
0,5-1,5	20-16	B1507FLSB8	0,4	7,7	13	7	6,3x0,8	TRB0515B	100

 $t = metal \ thickness, \ s = strip \ length$ 

### Receptacle angled rolled type 0.5 - 1 mm<sup>2</sup>

• Material: brass/Cu, tin plated Cu/Sn.

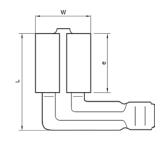












mm²	AWG	Name	W	÷	۵		c	For tab	Tool	Pcs/pack
(Cu)	(Cu)	Name	mm			-	3	TOT Lab	1001	1 c3/ pack
0,5-1	20-18	B1003FLSV5	3,8	0,3	4,9	9,3	7	2,8x0,5	DRB0115	100

t = metal thickness, s = strip length



### Tab 0.5 - 2.5 mm<sup>2</sup>

• Material: brass/Cu, tin plated Cu/Sn.

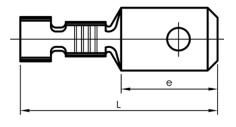












mm² (Cu)	AWG Cu	Name	e mm	L	S	For tab	Tool	Pcs/pack
0,5-1	20-18	B1003H	5,6	12,7	7	2,8x0,8	DRB0115	100
0,5-1,5	20-16	B1507H	8	19	7	6,3x0,8	GRB0560	100
1,5-2,5	16-14	B2507H	8	20	8	6,3x0,8	GRB0560	100

s = strip length

### Tab with locking lip 0.5 - 6 mm<sup>2</sup>

• Material: brass/Cu, tin plated Cu/Sn.

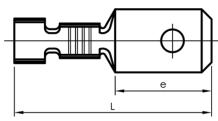












mm² (Cu)	AWG Cu	Name	e mm	L	s	For tab	Tool	Pcs/pack
0,5-1,0	20-18	B1007HN	16	28	8	6,3x0,8	DRB0115	100
1,5-2,5	16-14	B2507HN	16	28	8	6,3x0,8	GRB0560	100
4-6	12-10	B4607HN	16	28	9	6,3x0,8	GRB0560	100

s = strip length

### Bullet and Socket 0.2 - 1.5 mm<sup>2</sup>

- Material: brass/Cu, tin plated Cu/Sn.
- HA = Male contact
- HO = Female contact



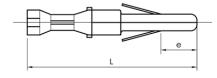












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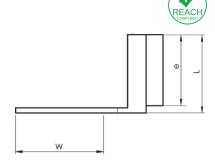
mm² (Cu)	AWG Cu	Name	e mm	L	s	For bullets Ø	Tool	Pcs/pack
0,2-0,5	24-20	B0502HA	5,5	21	7	2	DRB0115	100
0,5-1,5	20-16	B1502HA	5,5	21	8	2	DRB0115	100
0,2-0,5	24-20	B0502HO	5,5	21	7		DRB0115	100
0,5-1,5	20-16	B1502HO	5,5	21	8		DRB0115	100
s = strip len	ngth							



#### Tab with one male

• Material: brass/Cu, tin plated Cu/Sn.

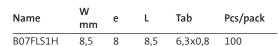












### Tab with 2 males

• Material: brass/Cu, tin plated Cu/Sn.

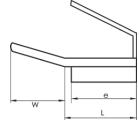












AWG Cu	Name	W mm	e	L	Tab	Pcs/pack
2/0	B07FLS2H	9	7,5	18,5	6,3x0,8	100

### Tab with 3 males

• Material: brass/Cu, tin plated Cu/Sn.



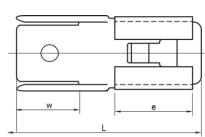












#### Tab connector

• Material: brass/Cu, tin plated Cu/Sn.

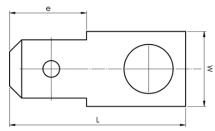












Name	W mm	е	ø	L	Tab	Pcs/pack
B1807H4	8,1	8,3	4,4	19,1	6,3x0,8	100
B1807H5	8	8,3	5,4	19,2	6,3x0,8	100

Ø = Hole diameter

### Tab connector 45°

• Material: brass/Cu, tin plated Cu/Sn.

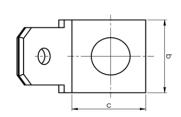


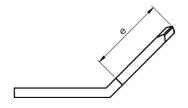












Name	b mm	С	e	ø	Tab	Angle °	Pcs/pack	
B0457H4	8	8	8	4,1	6,3x0,8	45°	100	
B0457H5	8	8	8	53	6 3x0 8	45°	100	

Ø = Hole diameter

### Tab connector 90°

• Material: brass/Cu, tin plated Cu/Sn.

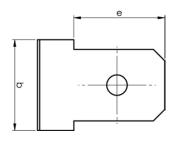






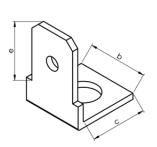






Name	Bb mm	c	e	ø	Tab	Angle °	Pcs/pack
B0907H4	8	8	8,3	4,1	6,3x0,8	90°	100
B0907H5	8	8	8	5,3	6,3x0,8	90°	100

 $\emptyset$  = Hole diameter





#### Tab connector 2 x 45°

• Material: brass, tin plated Cu/Sn

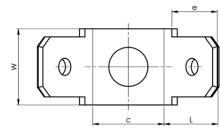












Name	W mm	c	e	Ø	L	Tab	Angle °	Pcs/pack
B2457H4	10	12	8	4,2	10	6,3x0,8	2x45°	100
B2457H5	10	12	8	5,2	10	6,3x0,8	2x45°	100

Ø = Hole diameter

### Tab for soldering with 2 solder pins

• Material: brass/Cu, tin plated Cu/Sn.

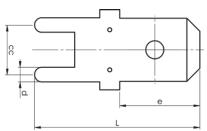












Name	d mm	сс	e	L	Tab	rec. Drill	Pcs/pack
12523	1,5	5	8	16,8	6,3x0,8	1,45	100

### Tab for soldering with 2 solder pins, 90°

• Material: brass/Cu, tin plated Cu/Sn.

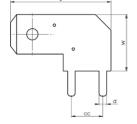












Name	W mm	d	сс	L	Tab	rec. Drill	Pcs/pack
17127	5	1,3	5	13,4	2,8x0,8	1,30	100
17128	9	1,2	5	16	6,3x0,8	1,30	100



### Tab for soldering with 1 solder pin

• Material: brass/Cu, tin plated Cu/Sn.

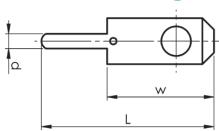












Name	W mm	d	L	Tab	rec. Drill	Pcs/pack
12610	6,5	0,9	10,5	2,8x0,8	1,0	100

#### Insulation boot ISO1003FL1

• Used in conjunction with straight tab connections.

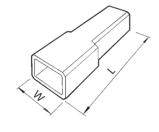












Name	W mm	L	For tab	Temp, °C (Min - Max)	Max ø conductor	Pcs/pack	Insulation material
ISO1003FL1	5,5	19	2,8	-50 +85	2,5	100	PE

### Insulation boot ISO1005FL1

• Used in conjunction with straight tab connections.

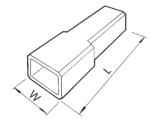












Name	W mm	L	For tab	Temp, °C (Min - Max)	Max ø conductor	Pcs/pack	Insulation material
ISO1005FL1	7,6	21	4,8	-25 +75	3,2	100	PVC

### Insulation boot ISO1507H-BW6

• Used in conjunction with straight tab connections.

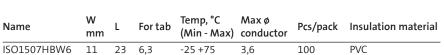














#### Insulation boot ISO1507FLS

• Used in conjunction with straight tab connections.

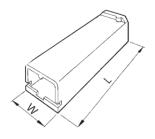












Name	W mm	L	For tab	Temp, °C (Min - Max)	Max ø conductor	Pcs/pack	Insulation material
ISO1507FLS	9	24,4	6,3	-25 +90	3,2	100	PP

### **Insulation boot ISO2507FLS1**

• Used in conjunction with straight tab connections.

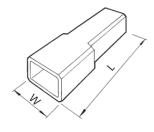












Name	W mm	L	For tab	Temp, °C (Min - Max)	Max ø conductor	Pcs/pack	Insulation material
ISO2507FLS1	9,5	22,5	6,3	-50 +85	3,0	100	PE

### **Insulation boot ISO1507FLB**

• Used with angled tab connector 90°.

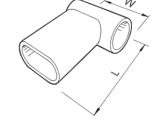












Name	W mm	L	For tab	Temp, °C (Min - Max)	Max ø conductor	Pcs/pack	Insulation material
ISO1507FLB	15	17,3	6,3	-25 +75	2,5	100	PVC



### Connector block for receptacles 1.5 - 6 mm<sup>2</sup>

- Used with receptacles and tabs 1.5-6 mm<sup>2</sup> with locking lip.
- Material nylon transparent.
- Max voltage 250 V.

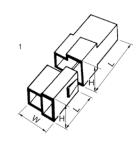












Name	Pole	W mm	Н	L	Pcs/pack	Used with
408-2-M	2	16,4	9,7	24	100	B2507FLSN, B4607FLSN
408-4-M	4	28	15,3	24	100	B2507FLSN, B4607FLSN
408-6-M	6	29	15,2	29	100	B2507FLSN, B4607FLSN
408-8-M	8	38	15,6	34	100	B2507FLSN, B4607FLSN
408-2-F	2	20	12,7	32	100	B2507HN, B4607HN
408-4-F	4	23	17,4	33	100	B2507HN, B4607HN
408-6-F	6	31	18,7	33	50	B2507HN, B4607HN
408-8-F	8	40	18,6	33	25	B2507HN, B4607HN

### Connector block for bullets and sockets 0.2 - 1.5 mm<sup>2</sup>

- Used with sockets and bullets 0.2-1.5 mm<sup>2</sup>.
- Material polyamide transparent.
- Max voltage 250 V.
- Max current 20 A.
- Temperature range -20°C to +105°C.
- Tested against breakthrough for 1 min at 1500 V AC.

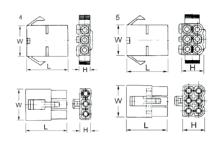












Name	Pole	W mm	н	L	Pcs/pack	Used with
MC02F	2	13,6	7,3	27	100	B0502HA, B1502HA
MC02M	2	13,5	7,3	27	100	B0502HO, B1502HO
MC03F	3	19,6	7,2	27	100	B0502HA, B1502HA
MC03M	3	19,6	7,1	27	100	B0502HO, B1502HO
MC04F	4	13,5	13,5	27	100	B0502HA, B1502HA
MC04M	4	13,5	13,5	27	100	B0502HO, B1502HO
MC06F	6	19,6	13,4	27	100	B0502HA, B1502HA
MC06M	6	19,6	13,4	27	100	B0502HO, B1502HO
MC09F	9	19,7	19,7	27	100	B0502HA, B1502HA
MC09M	9	19,7	19,7	27	100	B0502HO, B1502HO
MC12F	12	26	19,6	27	50	B0502HA, B1502HA
MC15F	15	32	19,6	27	50	B0502HA, B1502HA
MC15M	15	32	19,9	26	50	B0502HO, B1502HO



### Connector block for receptacles - 400 V /18 A

- Used in conjunction with flat pin sleeves.
- Material PVC transparent.
- Max voltage 400 V.
- Max current 18 A.

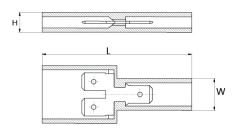












Name	Pole	W mm	Н	L	Tab	Pcs/pack
404-1	1	12	6	48	6,3x0,8	100
405-3	1+2	20,7	7,4	54,5	6,3x0,8	100
401-12	12	28	7	147	6,3x0,8	50

### Assortment box - uninsulated terminals









### PL701



Assortment box designed for electricians in the field and for service workshops.

#### **Properties:**

- box made of LDPE/TP
- 19 compartments (+ 10 empty compartments)
- 700 uninsulated terminals and through connectors 0.75-10 mm<sup>2</sup>
- crimping tool DKB0325
- crimping tool GWB4099 Miniforce
- stripping tool SCT001

mm²	AWG	Name	Net weight (kg)	Length mm	Width	Height
0,75-10	22-8	PL701	3,426	380	285	55



# Hobby tools for pre-insulated and uninsulated 0.5 - 6 mm<sup>2</sup> terminals as well as cutting and stripping

#### **Properties:**

- made of high-grade steel with semi-soft handles
- crimping positions are clearly marked
- the tools do not have a locking function
- cuts up to and including 6 mm<sup>2</sup>
- strips up to and including 6 mm<sup>2</sup>
- cuts screws M2.5-M5







### **T50 Hobby tool**



#### Special properties:

- contact crimps pre-insulated 0.5 6 mm² terminals and tab crimps uninsulated
   1.5 6 mm² terminals
- red handle

#### Crimp geometries





mm²	AWG	Name	Crimp geometries	Net weight (kg)	Length mm
0,5-6	20-10	T50	Tab, Oval	0,268	225







### T51 Hobby tool



#### Special properties:

- contact crimps pre-insulated 0.5 6 mm² terminals and roll crimps uninsulated 0.5 - 2.5 mm² terminals
- yellow handle

#### Crimp geometries





mm²	AWG	Name	Crimp geometries	Net weight (kg)	Length mm
0,5-6	20-10	T51		0,268	225







### T52 Hobby tool



#### Special properties:

- roll crimps uninsulated 0.5 6 mm² terminals
- green handle



mm²	AWG	Name	Crimp geometry	Net weight (kg)	Length mm	
0,5-6	20-10	T52	Roll	0,268	225	



### Tool for uninsulated terminals 0.15 - 6 mm<sup>2</sup> with measuring certificate



#### **Properties:**

- · crimp points are clearly marked
- adjustable for changes after long use
- tested with Elpress terminals according to requirements of SEN and DIN
- locking function that ensures a complete crimp
- emergency release if the crimping process has to be interrupted
- unique design that makes the tools thin and versatile
- minimal muscle strength required for complete crimp
- withstands at least 50,000 crimps
- supplied with certificate for basic quality monitoring









Crimp geometry



#### TRB0515B

Crimping tool for Roller crimping terminals B1507FLSB8.

• No measuring certificate

mm²	AWG	Name	Crimp geometry	Net weight (kg)	Length mm	Width	Height
0,5-1,5	20-16	TRB0515B				135	49









#### **DRB0115**



Tested and certified mechanical hand tool for roll crimping uninsulated tab, bullet and socket terminals 0.15-1.5 mm<sup>2</sup>. GRB0560 is used to crimp B1507FLS1, B1507FLSH

Net weight Length Width mm² AWG Name Crimp geometry (kg) 0,15-1,5 26-16 DRB0115 Roll 192 0.452 66

Crimp geometry











### **C** € DKB0325



Tested and certified mechanical hand tool for indent crimping Cu terminals 0.25-2.5 mm<sup>2</sup>.

mm²	AWG	Name	Crimp geometry	Net weight (kg)	Length mm	Width
0,25-2,5	24-14	DKB0325		0,444	192	66













## **(€** DKB0760



Tested and certified mechanical hand tool for indent crimping Cu terminals 0.75-6  $\mbox{mm}^2.$ 

mm²	AWG	Name	Crimp geometry	(kg)	Length mm	Width
0,75-6	20-10	DKB0760	Tab	0,445	192	66





### Miniforce tool for uninsulated terminals 0.5 - 10 mm<sup>2</sup> with measuring certificate



- Properties:
- locking function which only releases once crimping is complete
- emergency release if the crimping process has to be interrupted
- clearly marked crimping positions
- adjustable for changes after long use
- tested with Elpress terminals
- unique mechanism that reduces maximum handle force from 450 N right down to 250 N (model C)
- ergonomic handle suitable for all users
- maximises the quality of work
- reduces the risk of occupational injuries
- light and versatile design without sacrificing on strength
- model C has extra long handles for the use of two hands
- withstands at least 80,000 crimps

supplied with certificate for basic quality monitoring



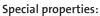




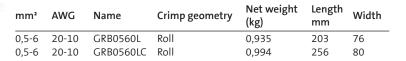


#### GRB0560L and GRB0560LC

Tested and certified mechanical Miniforce hand tool for roll crimping uninsulated terminals 0.5-6 mm<sup>2</sup>. The tool is type L equipped with three interchangeable locators for different types of terminals (see table). Type LC has long handles.



- delivered in practical plastic box
- locator that holds the terminal in the correct position when crimping and gives you an "extra hand" that facilitates work in, for example, confined spaces





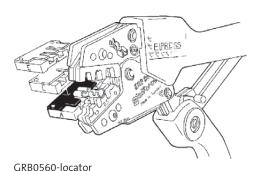








Crimp geometry



Locator		Marking
A	1.	B1507FLS1
		B1507FLSN
	2.	B2507FLS1
		B2507FLSN
	3.	B4607FLSN
		B4607FLS1
C	1.	B1507H
	2.	B2507HN
	3.	B4607HN
E	1.	B1505FLS (5 el 8) -1
	2.	B2505FLS (5 el 8) -1





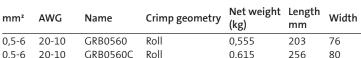


### $\epsilon$

### **GRB0560 and GRB0560C**

ted terminals 0.5-6 mm<sup>2</sup>.





Tested and certified mechanical Miniforce hand tool for roll crimping uninsula-

mm²	AWG	Name	Crimp geometry	(kg)	Length mm	Width
0,5-6	20-10	GRB0560	Roll	0,555	203	76
0,5-6	20-10	GRB0560C	Roll	0,615	256	80

Crimp geometry





### **C** € GWB4099 and GWB4099C

Tested and certified mechanical Miniforce hand tool for W crimping uninsulated ring, fork and pin terminals as well as tube terminals and through connectors type KR and KS 4-10 mm<sup>2</sup>.

mm²	AWG	Name	Crimp geometry	Net weight (kg)	Length mm	Width
4-10	12-8	GWB4099		0,542	203	76
4-10	12-8	GWB4099C	W	0,56	256	80

#### Crimp geometry











### **C** € GWB4010 and GWB4010C



Crimp geometry



Tested and certified mechanical Miniforce hand tool for W crimping un-insulated ring, fork and pin terminals as well as tube terminals and through connectors type KR/KRT and KS/KST 4-10 mm<sup>2</sup>.

mm²	AWG	Name	Crimp geometry	Net weight (kg)	Length mm	Width
4-10	12-8	GWB4010		0,543	256	80
4-10	12-8	GWB4010C	W	0,595	256	80



### Battery-powered crimping tools for pre-insulated 0.5 - 6 mm² terminals, uninsulated 0.25 - 10 mm² terminals and 0.5 - 50 mm<sup>2</sup> end sleeves

#### **Properties:**

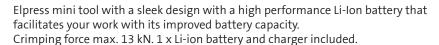
- Li-ion battery powered (10.8 V and 2 Ah), charging time about 40 min
- very good accessibility and ergonomics
- service and installation tools
- fast crimping process 2 4 sec
- approximately 230 crimps/battery charge
- dies for the tool sold separately







## **C** € PVL130P - Elpress Mini



- one-handed operation for easy control of all tool functions
- durable crimping head for long service life
- optimal crimping thanks to parallel-moving dies
- easy to use due to its low weight
- high-performance 10.8 V Li-Ion battery with indication of charge status
- open head, rotating
- easy and comfortable to use one handed thanks to its ergonomic 2-component housing with grip-friendly protection
- · automatic return of dies when crimping is complete

mm² (Cu)	AWG (Cu)	Name	Net weight (kg)	Length	Width	Height	Note
0,25-50	24-1/0	PVL130P	1,5	330	85	60	Charger: 230VAC
0,25-50	24-1/0	PVL130P-US	1,5	330	85	60	Charger: 115VAC
0,25-50	24-1/0	PVL130P-WOBC	0,91	330	85	60	without Battery/Charger









PVL130P - Elpress MINI, dies sold separately.



PVL130P, case and charger.







### PVL130S - Elpress Mini

Elpress mini tools with intuitive PowerSense function combine the benefits of manual crimping tools with the benefits of battery-powered hydraulic crimping

Crimping force max. 15 kN. 1 x Li-ion battery and charger included.



- one-handed operation for easy control of all tool functions
- electronic control with locking function and monitoring for complete closure of
- safety loop used as fall protection when used outdoors
- motor protection ensures safety in case of overload
- easy and comfortable to use one handed thanks to its ergonomic 2-component housing with grip-friendly protection
- very low weight and fast crimping process for maximum efficiency
- powerful driving technology allows for easy crimps
- high-performance 10.8 V Li-Ion battery with indication of charge status
- LED work lighting
- Die pair SA0760 comes with the tool

mı (Cı		AWG (Cu)	Name	Net weight (kg)	Length	Width	Height	Note
0,2	25-50	24-1/0	PVL130S	1,5	58	92	250	Charger: 230VAC
0,2	25-50	24-1/0	PVL130S-US	1,5	58	92	250	Charger: 115VAC
0,2	25-50	24-1/0	PVL130S-WOBC	0,91	58	92	250	without Battery/Charger



PVL130S - Elpress MINI, supplied with die pair SA0760.







### Dies for PVL130P/PVL130S



EB0560











EB4010

RB0560

FB3550



mm<sup>2</sup> AWG Net weight **Application** Name Crimp geometry (Cu) (Cu) (kg) 0,5-6 20-10 SA0760 Oval 0,05 Pre-insulated terminals 0,25-2,5 22-14 KB0325 Tab 0,039 Uninsulated terminals Uninsulated terminals WB4099 0,05 4-10 12-8 W 0,5-6 20-10 RB0560 Roll 0,05 Uninsulated terminals Trapezoid End sleeves 0,5-6 20-10 EB0560 0,057 Trapezoid End sleeves 4-10 12-8 EB4010 0,05 10-25 6-4 EB1025 Trapezoid 0,05 End sleeves 0,05 35-50 EB3550 Trapezoid End sleeves 2-0



### Elpress Mobile - tool with interchangeable dies



Professional contact crimping tool with interchangeable dies for the installer or service technician.

#### **Properties:**

- reliable, safe, economic and ergonomic tools
- parallel-moving crimping movement with 10 kN crimping force, tested for 20,000 crimps
- change crimping dies quickly and easily in one operation
- the crimping dies are kept together in pairs and stored in custom holders
- wide selection of dies allows you to use one tool frame for 19 different crimping applications!



### **Elpress Mobile**

Mobile hand tool (frame only). Dies are supplementary.

mm²	AWG	Name	Net weight (kg)	Length mm	Width
0,25-10	24-8	MOBILE	0,554	234	64



Elpress Mobile + dies OAA0525 and OEB0210.

### **Mobile Installation**

Mobile hand tool with two interchangeable dies:

- Die OAA0525 for crimping pre-insulated 0.5 2.5 mm² terminals.
- Die OEB0210 for crimping end sleeves 0.25 10 mm².
- The tool comes with associated dies in blister packaging.

Name	Net weight (kg)	Length mm	Width
MOBILE INSTALLATION	0,695	234	64



Elpress Mobile + dies OMP45 and OCC1113.

### Mobile DataCom

Mobile hand tool with two interchangeable dies:

- OMP45 for crimping modular plug RJ45.
- OCC1113 for crimping coaxial contacts RG58, RG59, RG62 and RG71.
- The tool comes with associated dies in blister packaging.

Name	Net weight (kg)	Length mm	Width
MOBILE DATA/COM	0,667	234	64











Elpress Mobile + dies OMS4, OMS3 and OMSL.



Cable stripper LOKE.

### **Mobile Solar Kit**

Mobile hand tool with three interchangeable dies and cable stripper LOKE for stripping solar panel cable with extra thick insulation:

- OMS4, roll crimping of contacts with sleeve Ø 4 mm, 2.5 6.0 mm<sup>2</sup>.
- OMS3, square crimping of contacts with sleeve Ø 3 mm, 2.5 6.0 mm<sup>2</sup>.
- OMSL, square crimping of contacts, 2.5 6.0 mm<sup>2</sup>.

Name	Net weight (kg)	Length mm	Width
MOBILE SOLAR	0,772	234	64









#### **Mobile Box**

Box for the mobile tool with room for the tool as well as 5-6 associated dies. Tools and dies are ordered separately.

Name	Net weight (kg)	Length mm	Width	Height
MOBILE BOX	0,32	246	218	57



### Additional dies for Elpress Mobile

All dies have the same quick and easy way of being inserted into the tool frame. The dies are kept together in pairs and supplied in a cassette that can be docked to other cassettes.



**OAA0160** Crimping die for Elpress MOBILE tool for asymmetric crimping of pre-insulated terminals 0.1-4 mm<sup>2</sup> and 4-6 mm<sup>2</sup>. AWG 11-9



OAA0525 Crimping die for Elpress MOBILE tool for asymmetric crimping of pre-insulated terminals 0.5-2.5 mm<sup>2</sup>. AWG 20-13.



OSW0360 Crimping die for Elpress MOBILE tool for crimping through connectors with heat shrink insulation 0.3-0.75 mm<sup>2</sup> and 4-6 mm<sup>2</sup>. AWG 11-9.



OSW0525 Crimping die for Elpress MOBILE tool for crimping through connectors with heat shrink insulation 0.5-1.5 mm<sup>2</sup> and 1.5-2.5 mm<sup>2</sup>. AWG 15-13.



**OPB0140** Crimping die for Elpress MOBILE tool for crimping global power connectors, GPC connectors.



**OPB6099** Crimping die for Elpress MOBILE tool for crimping global power connectors, . GPC connectors.







OWB4099 Crimping die for Elpress MOBILE tool for W crimping of uninsulated terminals 4-10 mm<sup>2</sup>. AWG 11-7.



OKB0725 Crimping die for Elpress MOBILE tool for punch crimping uninsulated terminals 0.75-2.5 mm<sup>2</sup>. AWG 18-13.



OKB0560 Crimping die for Elpress MOBILE tool for punch crimping uninsulated terminals 0.5-6 mm<sup>2</sup>. AWG 20-9.





**OEB0210** Crimping die for Elpress MOBILE tool for crimping end sleeves 0.25-10 mm<sup>2</sup>. AWG 24-7.



**OEB1625** Crimping die for Elpress MOBILE tool for crimping end sleeves 16-25  $mm^2$ AWG 5-3.



OEB3550 Crimping die for Elpress MOBILE tool for crimping end sleeves 35-50  $mm^2$ AWG 2-1/0.



OMP11 Crimping die for Elpress MOBILE tool for crimping modular plug RJ11.



ORB0110 Crimping die for Elpress MOBILE tool for roll crimping uninsulated terminals 0.1-1 mm<sup>2</sup>. AWG 26-17.



ORB0560 Crimping die for Elpress MOBILE tool for roll crimping uninsulated terminals 0.5-6 mm<sup>2</sup>. AWG 20-9.



OMP45 Crimping die for Elpress MOBILE tool for crimping modular plug RJ45.



OCC4755



OFO5432 Crimping die for Elpress MOBILE tool for crimping fibre optic contacts.



OCC0908 Crimping die for Elpress MOBILE tool for crimping coaxial contacts RG174, 179.



OCC1113 Crimping die for Elpress MOBILE tool for crimping coaxial contacts RG58, 59, 62, 71.



Crimping die for Elpress MOBILE tool for crimping coaxial contacts RG6, 59.



OMS4 Dies for Mobile tools for roll crimping contacts with sleeve diameter 4 mm, 2.5-6.0 mm<sup>2</sup>. AWG 13-19.



OMSL Die for square crimping contacts 2.5-6.0 mm<sup>2</sup>. AWG 13-9.





### Cu terminals 0.75 - 1000 mm²

General information about Cu terminals	2
Tube terminals 0.75 - 10 mm²	4
KRF tube terminals 16 - 800 mm²	5
KRF tube terminals with two holes 16 - 400 mm²	6
KRFS tube terminals with narrow palm 50 - 400 mm²	7
KRF angled terminals 45° 10 - 150 mm²	8
KRF angled terminals 90° 10 - 150 mm²	9
KRT tube terminals 10 - 500 mm²	10
KRD tube terminals 16 - 1000 mm²	11
KRD tube terminals 16 - 1000 mm²	12
DIN 46235 tube terminals 6 - 1000 mm²	13
DIN 46234 sheet metal terminals 10 - 185 mm²	14
KS/KSF through connectors 0.75 - 800 mm²	15
KS/KSF through connectors with partition 10-500 mm²	16
KST through connectors with partition 10-500 mm²	17
KSD through connectors with partition 16-1000 mm <sup>2</sup>	18
KSxP parallel connectors for conductors total 0.5 - 6.75 mm²	18
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DIN 46230 pin terminals 10 - 95 mm²	20
KRX tube terminals for Excel and Fxcel cable 10 - 16 mm²	20
KSX through connectors for Excel and Fxcel cable 10 - 16 mm²	20
C-cleaves 6 - 300 mm²	21



#### General information about Cu terminals



#### **System Elpress**

System Elpress consists of terminals and tools that are designed and tested together to give a certified crimping result. This ensures that users will feel confident when using our systems, and that a secure connection is achieved through the proper handling of our products. By using Elpress Cu-connection elements together with one of Elpress crimp systems one obtains a connection that has been tested according to the requirements of IEC 61238:1.



#### Cu terminals

Elpress copper connectors are made of pure copper 99.95%. We manufacture tube terminals type KR/KRF/KRD/KRT, through connectors type KS/KSF/KSD/ KST for stranded conductors, IEC 60228 class 2, and multi-stranded conductors IEC 60228 class 5 such as C-sleeves primarily pre-splicing of Cu-lines and many customised products. For flexible and stranded Cu conductors, terminals of type KR/KRF and through connectors of type KS/KSF are used. Terminals type KRD/KRT and through connectors type KSD/KST are normally used for stranded Cu conductors from and including 500 mm<sup>2</sup>. Terminals of type KR/KRF/KRD/ KRT are used mainly in termination to bus bars and apparatus of copper, while through connectors, of type KS/KSF/KSD/ KST, are used mainly in the splicing of copper conductors in cable assemblies. They can also be used for straight splicing of earth conductors. With a branching sleeve, type C, one splices and branches earth conductors, lightning conductor installations and the like.



#### **UL-approved terminals**

KR/KS, KRF/KSF, KRFS, KRFN, KRT/KST UL approved in accordance with file no. E205350.

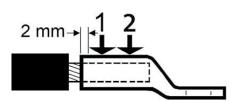


#### **DNV-approved terminals**

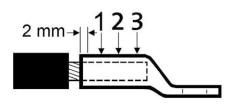
Elpress KR/KS, KRF/KSF and KRT/KST terminals meet DNV's rules for classification of ships and Det Norske Veritas' Offshore Standards. The terminals are approved for installations on ships and mobile "offshore" units.

#### **Number of crimps**

Normally one crimp is required up to and including 150 mm² and two or three crimps for larger areas. Note, however, that another number of crimps may be needed in some cases, see tables for tool dies. If possible, crimps should be placed next to each other with a couple of mm spacing between each one. Overlap is sometimes inevitable.



Crimp sequence for two crimps.



Crimp sequence for three crimps.

#### Marking of Cu terminals

Elpress marking system for copper terminals shows logotype, cable area and type number for hexagonal die. This system allows checks that the correct tools have been used when contact crimping because the die number automatically becomes embossed during the contact crimping.



#### Marking tube terminals

25 (on neck)
Type No. for hexagonal die
(Elpress logo) 150 12 F (on the palm)
150 = Cu conductor in mm²
12 = Hole size
F = KRF



#### Marking through connectors

Elpress Logo Type No. for hexagonal die 16 F (possible screened conductor area and earthing sign) 16 = Cu conductor in mm²



#### Marking C-sleeves (example C70-95)

Area marking (side 1)
25-120 / 140-190
min - max (mm² per conductor) / min - max
(total mm² in the sleeve)
Elpress logo, Die number (side 2)
BCx, "x" corresponds to die number



### Clearance for holes in terminal palm

Screw size	Hole diameter (Ø mm
M3	3,2
M4	4,3
M5	5,3
M6	6,4
M8	8,4
M10	10.5
M12	13
M16	17
M20	21
M24	26

#### Screw and washer

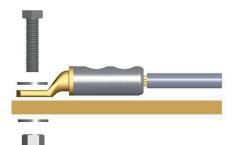
The following apply for bright galvanized type nuts and screws, with strength class 8.8, used for connecting terminals with Cu and Al palms:

- Always use a torque wrench to be certain the right torque is achieved.
   Make sure it is calibrated at regular intervals according to the supplier's instructions.
- Use the recommended torque according to the screw manufacturer's instructions
- Always use a hard plain washer to reduce friction against the connection surface and the edge pressure, hardness min HB200.
- Install as illustrated.



#### **Customised products**

Customised products are an important part of our work. Solving problems for the customer and at the same time manufacturing the products with profitability is a special challenge. This way, we also increase our knowledge of the customers' needs. The above terminals include different models of T-connectors where you can connect three conductors of the same size using only one terminal. These are used, for example, in transformer manufacturing. Other connections in transformer manufacturing are lead-in pins and special terminals for switches. In conclusion, all terminals are designed to easily ensure a high-quality connection even in advanced applications.



### Tube terminals 0.75 - 10 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn.
- For multi-stranded (class 5) and stranded (class 2) Cu conductors.
- UL approved (1.5 -10 mm²).

### Examples of palm marking KR: 10 10

 $10 = mm^2 10 = Palm hole for M10$ 



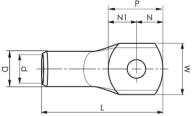












	AWG	Name	Screw	W	d	D	N	N1	Р	L	t	s	Tool	•	Pcs/	Die
(Cu)	Cu	1/00 75 2	112	mm	1.0	2.0	2.2	2.0		47	0.05	7.5	DIADOSSE DIADOSCO	hole	pack	
0,75	. ,	KR0,75-3	M3	6	1,3	2,8	3,2	3,8	7	17			DKB0325, DKB0760	No	100	
0,75	(22)-18	KR0,75-4	M4	6	1,3	2,8	3,2	3,5	6,7	17	0,8	7,5	DKB0325, DKB0760	No	100	
1,5	(18)-16	KR1,5-3	M3	6,5	1,8	3,3	3,4	3,6	7	16	1	7,5	DKB0325, DKB0760	No	100	
1,5	(18)-16	KR1,5-4	M4	6,5	1,8	3,3	4,2	3,8	8	17	0,9	7,5	DKB0325, DKB0760	No	100	
1,5	(18)-16	KR1,5-5	M5	7,5	1,8		4,8	4,7	9,5	18	0,85	7,5	DKB0325, DKB0760	No	100	
2,5	(16)-14	KR2,5-3	M3	7,5	2,3		3,5	4,1	7,6	17	1,3	7	DKB0325, DKB0760	No	100	
2,5	(16)-14	KR2,5-4	M4	7,5	2,3		4,2	4,1	8,3	18	1,3	7	DKB0325, DKB0760	No	100	
2,5	(16)-14	KR2,5-5	M5	8,5	2,3		4,8	4,8	9,6	19	1,1	7	DKB0325, DKB0760	No	100	
2,5	(16)-14	KR2,5-6	M6	8,5	2,4		5,1	5,8	10,9	19	1,1	7	DKB0325, DKB0760	No	100	
4	12	KR4-3	M3	8,5	3		4,2	5,8	10	21	1,5	8,5	GWB4099, ES2258	Yes	100	
4	12	KR4-4	M4	8,5	3		4,2	5,8	10	22	1,5	8,5	GWB4099, ES2258	Yes	100	
4	12	KR4-5	M5	9	3		4,8	5,2	10	22	1,5	8,5	GWB4099, ES2258	Yes	100	
4	12	KR4-6	M6	9,9	3		5	7	12	23	1,3	8,5	GWB4099, ES2258	Yes	100	
6	10	KR6-4	M4	9,5	4		4	6	10	22	1,7	8,5	GWB4099, ES2258	Yes	100	
6	10	KR6-5	M5	9,5	4		5	6	11	22	1,7	8,5	GWB4099, ES2258	Yes	100	
6	10	KR6-6	M6	9,9	4		5,5	6,5	12	23	1,6	8,5	GWB4099, ES2258	Yes	100	
6	10	KR6-8	M8	13	4		7	10	17	30	1,2	8,5	GWB4099, ES2258	Yes	100	
10	8	KR10-4	M4	11,5	5	8	6	8	14	29	2,9	11	GWB4099, ES2258, PVL350, V600, DV1300	Yes	100	8
10	8	KR10-5	M5	11,5	5	8	6	7,5	13,5	29	2,9	11	GWB4099, ES2258, PVL350, V600, DV1300	Yes	100	8
10	8	KR10-6	M6	11,5	5	8	6	7,5	13,5	29	3	11	GWB4099, ES2258, PVL350, V600, DV1300	Yes	100	8
10	8	KR10-8	M8	13,5	5	8	7,5	8,5	16	33	2,3	11	GWB4099, ES2258, PVL350, V600, DV1300	Yes	100	8
10	8	KR10-10	M10	16	5	8	8	10	18	34	2	11	GWB4099, ES2258, PVL350, V600, DV1300	Yes	100	8
10	8	KR10-12	M12	18,5	5	8	10	13,5	23,5	41	1,7	11	GWB4099, ES2258, PVL350, V600, DV1300	Yes	100	8

t = palm thickness, s = strip length



### KRF tube terminals 16 - 800 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn.
- Inspection hole
- For stranded (class 2) and multi-stranded (class 5) Cu conductors
- For multi-stranded Cu conductors Elpress recommends the DUAL system.
- UL approved (KRF16-500 mm²), DNV approved (16-400 mm²).







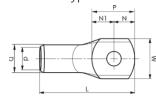




#### Example of marking KRF: 17 (neck) Elpress logotype 70 10F (palm)

17 = Die No. 70 = mm² 10 = palm hole for M10 F = type KRF for stranded and flexible conductors.





mm²	AWG	Name	Screw	W	d	D	N	N1	Р	L	t	s	Tool	Pcs/	Die
<u>(Cu)</u> 16	<b>Cu</b> 6	KRF16-6	M6	<u>mm</u> 13	6	9	8	9	17	34	2,9	11	PVL350, V600, DV1300, DV250	<b>pack</b> 100	9
16 16	6 6	KRF16-8 KRF16-10	M8 M10	13 16	6 6	9 9	8 10	9 11	17 21	34 38	2,9 2,3	11 11	PVL350, V600, DV1300, DV250 PVL350, V600, DV1300, DV250	100 100	9 9
16	6	KRF16-12	M12	22	6	9	12	13	25	47	1,6	11	PVL350, V600, DV1300, DV250	100	9
25 25	4 4	KRF25-6 KRF25-8	M6	16	8	11	8	10	18	39 39	2,9 2,9	13 13	PVL350, V600, DV1300, DV250	100 100	11
25 25	4	KRF25-10	M8 M10	16 17	8 8	11 11	8 10	10 11	18 21	42	2,9	13	PVL350, V600, DV1300, DV250 PVL350, V600, DV1300, DV250	100	11 11
25	4	KRF25-12	M12	22	8 9	11	12	13	25	47	2,1	13	PVL350, V600, DV1300, DV250	100	11
35 35	2	KRF35-6 KRF35-8	M6 M8	18 18	9	13 13	10 10	11 11	21 21	47 47	3,9 3,9	16 16	PVL350, V600, DV1300, DV250 PVL350, V600, DV1300, DV250	100 100	13 13
35	2	KRF35-10	M10	18	9	13	10	11	21	47	3,9	16	PVL350, V600, DV1300, DV250	100	13
35 50	2 1/0	KRF35-12 KRF50-6	M12 M6	22 21	9 11	13 14.5	12 11	14 11	26 22	52 50	3,2 3,4	16 19	PVL350, V600, DV1300, DV250 PVL350, V600, DV1300, DV250	100 100	13 14.5
50	1/0	KRF50-8	M8	21	11	14,5	11	11	22	50	3,4	19	PVL350, V600, DV1300, DV250	100	14,5
50 50	1/0 1/0	KRF50-10 KRF50-12	M10 M12	21 21	11 11	14,5 14,5	11 12	11 13	22 25	50 53	3,4 3,4	19 19	PVL350, V600, DV1300, DV250 PVL350, V600, DV1300, DV250	100 100	14,5 14,5
50	1/0	KRF50-16	M16	27	11	14,5	15	16	31	59	2,7	19	PVL350, V600, DV1300, DV250	100	14,5
70 70	2/0 2/0	KRF70-6 KRF70-8	M6 M8	25 25	13 13	17 17	11 11	11 11	22 22	55 55	3,9 3,9	22 22	PVL350, V600, DV1300, DV250 PVL350, V600, DV1300, DV250	50 50	17 17
70	2/0	KRF70-10	M10	25	13	17	11	11	22	55	3,9	22	PVL350, V600, DV1300, DV250	50	17
70 70	2/0 2/0	KRF70-12 KRF70-16	M12 M16	25 28	13 13	17 17	12 15	13 16	25 31	58 64	3,9 3,5	22 22	PVL350, V600, DV1300, DV250 PVL350, V600, DV1300, DV250	50 50	17 17
95	4/0	KRF95-8	M8	29	15	20	15	16	31	69	4,9	25	V600, DV1300, DV250	50	20
95 95	4/0 4/0	KRF95-10 KRF95-12	M10 M12	29 29	15 15	20 20	15 15	16 16	31 31	69 69	4,9 4,9	25 25	V600, DV1300, DV250 V600, DV1300, DV250	50 50	20 20
95	4/0	KRF95-16	M16	29	15	20	15	16	31	69	4,9	25	V600, DV1300, DV250	50	20
120 120	250 250	KRF120-10 KRF120-12	M10 M12	32 32	17 17	22 22	15 15	16 16	31 31	73 73	4,9 4,9	27 27	V600, DV1300, DV250 V600, DV1300, DV250	25 25	22 22
120 150	250 300	KRF120-16 KRF150-10	M16 M10	32 36	17 19	22 25	15 15	16 16	31 31	73 80	4,9	27 32	V600, DV1300, DV250	25 25	22 25
150	300	KRF150-10	M12	36	19	25	15	16	31	80	5,9 5,9	32	V600, DV1300, DV250 V600, DV1300, DV250	25	25
150 150	300 300	KRF150-16 KRF150-20	M16 M20	36 36	19 19	25 25	15 19	16 19	31 38	80 87	5,9 5,9	32 32	V600, DV1300, DV250 V600, DV1300, DV250	25 25	25 25
185	350	KRF185-10	M10	39	21	27	15	16	31	86	5,9	37	DV1300, DV250	20	27
185 185	350 350	KRF185-12 KRF185-16	M12 M16	39 39	21 21	27 27	15 15	16 16	31 31	86 86	5,9 5,9	37 37	DV1300, DV250 DV1300, DV250	20 20	27 27
185	350	KRF185-20	M20	39	21	27	19	19	38	93	5,9	37	DV1300, DV250	20	27
240 240	500 500	KRF240A-10 KRF240A-12	M10 M12	42 42	22,5 22,5	30 30	19 19	20 20	39 39	96 96	6,4 6,4	37 37	DV1300, DV250 DV1300, DV250	10 10	30 30
240	500	KRF240A-16	M16	42	22,5	30	19	20	39	96	6,4	37	DV1300, DV250	10	30
240 300	500 600	KRF240A-20 KRF300A-10	M20 M10	42 46	22,5 24,5	30 32	19 15	20 19	39 34	96 93	6,4 6,8	37 40	DV1300, DV250 DV1300, DV250	10 10	30 32
300	600	KRF300A-12	M12	46	24,5	32	15	19	34	93	6,8	40	DV1300, DV250	10	32
300 300	600 600	KRF300A-16 KRF300A-20	M16 M20	46 46	24,5 24,5	32 32	20 23	20 25	40 48	99 107	6,8 6,8	40 40	DV1300, DV250 DV1300, DV250	10 10	32 32
300	600	KRF300A-24	M24	46	24,5	32	23	25	48	110	6,8	40	DV1300, DV250	10	32
400 400	750 750	KRF400A-00 KRF400A-12	M12	56 56	30 30	38 38	15	25	55 40	125 111	7,8 7,8	52 52	DV1300, DV250 DV1300, DV250	10 10	38 38
400	750	KRF400A-16	M16	56	30	38	20	20	40	111	7,8	52	DV1300, DV250	10	38
400 400	750 750	KRF400A-20 KRF400A-24	M20 M24	56 56	30 30	38 38	23 23	25 25	48 48	119 118	7,8 7,8	52 52	DV1300, DV250 DV1300, DV250	10 10	38 38
500	1000	KRF500-00		61	33	42	2.5		70	160	8,8	70	DV250, V1470	5	42
500 500		KRF500-12 KRF500-14	M12 M14	61 61	33 33	42 42	25 25	35 35	60 60	150 150	8,8 8,8	70 70	V250, V1470 V250, V1470		42 42
500	1000	KRF500-16	M16	61	33	42	25	35	60	150	8,8	70	DV250, V1470	5	42
500 500	1000 1000	KRF500-20 KRF500-24	M20 M24	61 61	33 33	42 42	25 25	35 35	60 60	150 150	8,8 8,8	70 70	DV250, V1470 DV250, V1470	5 5	42 42
630	1250	KRF630-00		75	39	53			80	195	13,8	80	DV250, V1470	1	53
630 630	1250	KRF630-12 KRF630-16	M12 M16	75 75	39 39	53 53	35 35	45 45	80 80	195 195	14 13,8	80 80	V250, V1470 V250, V1470		53 53
630	1250	KRF630-20	M20	75	39	53	35	45	80	195	13,8	80	DV250, V1470	1	53
630 800	1250 1575	KRF630-24 KRF800-00	M24	75 75	39 42,5	53 53	35	45	80 80	195 195	13,8 13,8	80 80	DV250, V1470 DV250, V1470	1 1	53 53
800		KRF800-16	M16	75	42,5	53	35	45	80	195	13,8	80	V250, Ý1470		53
800	1575	KRF800-24	M24	75	42,5	53	35	45	80	195	13,8	80	DV250, V1470	1	53

 $t = palm \ thickness, \ s = strip \ length$ 



### KRF tube terminals with two holes 16 - 400 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn.
- Inspection hole
- For stranded (class 2) and multi-stranded (class 5) Cu conductors.
- $\bullet \ \, \text{For multi-stranded Cu conductors Elpress recommends the DUAL system}.$
- UL approved (16-400 mm²), DNV approved (see note).







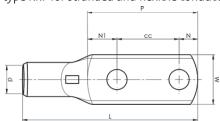




#### Example of marking KRF: 17 (neck) Elpress logotype 70 10F (palm)

17 = Die No. 70 = mm<sup>2</sup> 10 = palm hole for M10 F = type KRF for stranded and flexible conductors.





mm² (Cu)	AWG Cu	Name	Screw	W mm	d	N	N1	Р	сс	L	t	S	Tool	Pcs/ pack	Die	Note
16	6	KRF16-6X2-16	M6x2	13	6	6,5	8,5	31	16	50	2,8	11	PVL350, V600, DV1300, V250	100	9	
16	6	KRF16-10X2-40	M10x2	16	6	11	11	62	40	81	2,2	11	PVL350, V600, DV1300, V250	100	9	
16	6	KRF16-10X2-24-26	M10x2	16	6	11	19	55	25	75	2,2	11	PVL350, V600, DV1300, V250	100	9	
25	4	KRF25-6X2-16	M6x2	16	8	6,5	8,5	31	16	54	2,9	13	PVL350, V600, DV1300, V250	100	11	
25	4	KRF25-8X2-40	M8x2	16	8	9,5	10,5	60	40	81	2,8	13	PVL350, V600, DV1300, V250	100	11	
25	4	KRF25-10X2-40	M10x2	18	8	11	19	70	40	93	2,5	14	PVL350, V600, DV1300, V250	100	11	
25	4	KRF25-14X2-40	M14x2	22	8	15	17	72	40	94	1,8	13	DV1300, V250, V600, PVL350	100	11	
35	2	KRF35-10X2-24-26	M10x2	18	9	11	16	52	25	78	3,9	16	PVL350, V600, DV1300, DV250	100	13	
35	2	KRF35-10X2-40	M10x2	20	9	11	19	70	40	95	3,5	16	PVL350, V600, DV1300, DV250	100	13	
50	1/0	KRF50-10X2-24-26	M10x2	21	11	11	16	52	25	82	3,4	19	PVL350, V600, DV1300, DV250	100	14,5	,
50	1/0	KRF50-10X2-40	M10x2	21	11	11	19	70	40	100	3,3	19	PVL350, V600, DV1300, DV250	100	14,5	,
70	2/0	KRF70-10X2-24-26	M10x2	25	13	11	17	53	25	86	3,9	22	PVL350, V600, DV1300, DV250	50	17	
70	2/0	KRF70-12X2-40	M12x2	25	13	12	18	70	40	103	3,9	22	PVL350, V600, DV1300, DV250	25	17	DNV approved
95	4/0	KRF95-10X2-24-26	M10x2	29	15	11	19	55	25	93	4,9	25	V600, DV1300, DV250	25	20	
95	4/0	KRF95-12X2-40	M12x2	29	15	12	18	70	40	107	4,9	25	V600, DV1300, DV250	25	20	DNV approved
120	250	KRF120-10X2-24-26	M10x2	32	17	11	19	55	25	97	4,9	27	V600, DV1300, DV250	25	22	
120	250	KRF120-12X2-40	M12x2	32	17	12	19	71	40	113	4,9	27	V600, DV1300, DV250	25	22	DNV approved
150	300	KRF150-10X2-24-26	M10x2	36	19	11	19	55	25	104	5,9	32	V600, DV1300, DV250	25	25	
150	300	KRF150-12X2-40	M12x2	36	19	12	19	71	40	120	5,9	32	V600, DV1300, DV250	20	25	DNV approved
185	350	KRF185-10X2-24-26	M10x2	39	21	11	21	57	25	111	5,9	37	DV1300, DV250	20	27	
185	350	KRF185-12X2-40	M12x2	39	21	12	20	72	40	126	5,9	37	DV1300, DV250	20	27	DNV approved
240	500	KRF240A-10X2-24-26	M10x2	42	22,5	11	22	58	25	115	6,4	37	DV1300, DV250	10	30	
240	500	KRF240A-12X2-40	M12x2	42	22,5	12	21	73	40	130	6,4	37	DV1300, DV250	10	30	DNV approved
300	600	KRF300A-12X2-40	M12x2	46	24,5	12	22	74	40	133	6,8	40	DV1300, DV250	5	32	DNV approved
400	750	KRF400A-12X2-40	M12x2	56	30	12	23	75	40	145	7,8	52	DV1300, DV250	1	38	DNV approved

 $t = palm \ thickness, \ s = strip \ length$ 



### KRFS tube terminals with narrow palm 50 - 400 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn.
- Inspection hole
- For stranded (class 2) and multi-stranded (class 5) Cu conductors.
- For multi-stranded Cu conductors Elpress recommends the DUAL system.
- Easy to install via cable gland, allows for pre-installation.
- The width of the palm is less than or as wide as the neck.
- UL-approved, DNV approved.









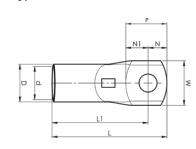




#### Example of marking KRFS: 17 (neck) Elpress logotype 70 10F (palm)

17 = Die no. 70 = mm² 10 = palm hole for M10 F = type KRF for stranded and flexible conductors.





mm² (Cu)	AWG Cu	Name	Screw	W mm	d	D	N	N1	P	L	L1	t	S	Tool	Pcs/ pack	Die
50	1/0	KRFS50-6	M6	15	11	14,5	11	11,5	22,5	51	40	4	19	PVL350, V600, DV1300, DV250	100	14,5
50	1/0	KRFS50-8	M8	16,5	11	14,5	11	11,5	22,5	51	40	3,8	19	PVL350, V600, DV1300, DV250	100	14,5
50	1/0	KRFS50-10	M10	16,5	11	14,5	11	12,5	23,5	52	41	3,8	19	PVL350, V600, DV1300, DV250	100	14,5
70	2/0	KRFS70-6	M6	17	13	17	11	12,5	23,5	58	47	4,5	22	PVL350, V600, DV1300, DV250	50	17
70	2/0	KRFS70-8	M8	17	13	17	11	12,5	23,5	58	47	4,5	22	PVL350, V600, DV1300, DV250	50	17
70	2/0	KRFS70-10	M10	19	13	17	11	12,5	23,5	58	47	3,9	22	PVL350, V600, DV1300, DV250	50	17
95	4/0	KRFS95-6	M6	19	15	20	11	14	25	63	52	5,7	25	V600, DV1300, DV250	50	20
95	4/0	KRFS95-8	M8	19	15	20	11	14	25	63	52	5,7	25	V600, DV1300, DV250	50	20
95	4/0	KRFS95-10	M10	19	15	20	11	14	25	63	52	5,7	25	V600, DV1300, DV250	50	20
95	4/0	KRFS95-12	M12	20	15	20	12	15	27	64	52	5,4	25	V600, DV1300, DV250	50	20
120	250	KRFS120-6	M6	19	17	22	11	13,5	24,5	67	56	5,9	27	V600, DV1300, DV250	25	22
120	250	KRFS120-8	M8	19	17	22	11	13,5	24,5	67	56	5,9	27	V600, DV1300, DV250	25	22
120	250	KRFS120-10	M10	19	17	22	11	13,5	24,5	67	56	5,9	27	V600, DV1300, DV250	25	22
120	250	KRFS120-12	M12	22	17	22	12	15	27	70	58	5	27	V600, DV1300, DV250	25	22
150	300	KRFS150-6	M6	25	19	25	11	14	25	74	63	6,3	32	V600, DV1300, DV250	25	25
150	300	KRFS150-8	M8	25	19	25	11	14	25	74	63	6,3	32	V600, DV1300, DV250	25	25
150	300	KRFS150-10	M10	25	19	25	11	14	25	74	63	6,3	32	V600, DV1300, DV250	25	25
150	300	KRFS150-12	M12	25	19	25	12	15	27	76	64	6,3	32	V600, DV1300, DV250	25	25
185	350	KRFS185-10	M10	27	21	27	11	13	24	79	68	6,6	37	DV1300, DV250	20	27
185	350	KRFS185-12	M12	27	21	27	12	15	27	82	70	6,6	37	DV1300, DV250	20	27
240	500	KRFS240A-10	M10	29	22,5	29	15	19	34	91	76	7,7	37	DV1300, DV250	10	30
240	500	KRFS240A-12	M12	29	22,5	29	15	19	34	91	76	7,7	37	DV1300, DV250	10	30
240	500	KRFS240A-16	M16	29	22,5	29	20	19	39	96	76	7,7	37	DV1300, DV250	10	30
300	600	KRFS300A-10	M10	31	24,5	31,5	15	19	34	94	79	8,6	40	DV1300, DV250	10	32
300	600	KRFS300A-12	M12	31	24,5	31,5	15	19	34	94	79	8,6	40	DV1300, DV250	10	32
300	600	KRFS300A-16	M16	31	24,5	31,5	20	19	39	99	79	8,6	40	DV1300, DV250	10	32
400	800	KRFS400A-12	M12	38	30	38	15	24	39	114	99	8,8	52	DV1300, DV250	10	38
400	800	KRFS400A-16	M16	38	30	38	20	39	39	114	94	8,8	52	DV1300, DV250	10	38

 $t = palm \ thickness, \ s = strip \ length$ 



Easy to install via cable gland.



### KRF angled terminals 45° 10 - 150 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn.
- Inspection hole
- For stranded (class 2) and multi-stranded (class 5) Cu conductors.
- For multi-stranded Cu conductors Elpress recommends the DUAL system.
- UL approved (35-150 mm²). DNV approved (16-150 mm²).









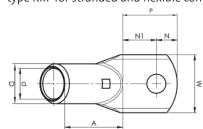




#### Example of marking KRF: 17 (neck) Elpress logotype 70 10F (palm)

 $17 = Die No. 70 = mm^2 10 = palm hole for M10 F = type KRF for stranded and flexible conductors.$ 





mm² (Cu)	AWG Cu	Name	Screw	W mm	d	D	N	N1	Р	Α	t	S	Tool	Pcs/ pack	Die
10	8	KR10-6-45GR	M6	13	5	8	6,5	11,5	20,5	19	2,3	11	PVL350, V600, DV1300, DV250	100	8
10	8	KR10-8-45GR	M8	13,5	5	8	8,5	12	18	19	2,2	11	PVL350, V600, DV1300, DV250	100	8
16	6	KRF16-6-45GR	M6	13	6	9	6,5	11,5	18	23	2,9	12	PVL350, V600, DV1300, DV250	100	9
16	6	KRF16-8-45GR	M8	13	6	9	8,5	12	20,5	23	2,7	12	PVL350, V600, DV1300, DV250	100	9
16	6	KRF16-10-45GR	M10	16	6	9	11,5	13,5	25	23	2,3	12	PVL350, V600, DV1300, DV250	100	9
25	4	KRF25-6-45GR	M6	16	8	11	6,5	11,5	18	24	2,7	13	PVL350, V600, DV1300, DV250	100	11
25	4	KRF25-8-45GR	M8	16	8	11	8,5	12	20,5	24	2,7	13	PVL350, V600, DV1300, DV250	100	11
25	4	KRF25-10-45GR	M10	17	8	11	11,5	13,5	25	23	2,9	13	PVL350, V600, DV1300, DV250	100	11
35	2	KRF35-6-45GR	M6	18	9	13	6,5	11,5	16	30	3,9	16	PVL350, V600, DV1300, DV250	100	13
35	2	KRF35-8-45GR	M8	18	9	13	8,5	12	20,5	30	3,9	16	PVL350, V600, DV1300, DV250	100	13
35	2	KRF35-10-45GR	M10	18	9	13	11,5	13,5	25	30	3,9	16	PVL350, V600, DV1300, DV250	100	13
50	1/0	KRF50-8-45GR	M8	21	11	14,5	8,5	17,5	26	31	3,4	19	PVL350, V600, DV1300, DV250	100	14,5
50	1/0	KRF50-10-45GR	M10	21	11	14,5	11,5	18,5	30	31	3,4	19	PVL350, V600, DV1300, DV250	100	14,5
50	1/0	KRF50-12-45GR	M12	21	11	14,5	12,5	19,5	32	31	3,3	19	PVL350, V600, DV1300, DV250	100	14,5
70	2/0	KRF70-8-45GR	M8	24	13	17	8,5	17,5	26	35	3,9	22	PVL350, V600, DV1300, DV250	50	17
70	2/0	KRF70-10-45GR	M10	24	13	17	11,5	18,5	30	35	3,9	22	PVL350, V600, DV1300, DV250	50	17
70	2/0	KRF70-12-45GR	M12	24	13	17	12,5	19,5	32	35	3,9	22	PVL350, V600, DV1300, DV250	50	17
95	4/0	KRF95-10-45GR	M10	28	15	20	11,5	18,5	30	40	4,9	25	V600, DV1300, DV250	50	20
95	4/0	KRF95-12-45GR	M12	28	15	20	12,5	19,5	32	40	4,9	25	V600, DV1300, DV250	50	20
95	4/0	KRF95-16-45GR	M16	29	15	20	15,5	20,5	36	40	4,8	25	V600, DV1300, DV250	50	20
120	250	KRF120-10-45GR	M10	32	17	22	11,5	18,5	30	43	4,9	27	V600, DV1300, DV250	25	22
120	250	KRF120-12-45GR	M12	32	17	22	12,5	19,5	32	43	4,9	27	V600, DV1300, DV250	25	22
120	250	KRF120-16-45GR	M16	32	17	22	15,5	20,4	35,9	43	4,9	27	V600, DV1300, DV250	25	22
150	300	KRF150-10-45GR	M10	36	19	25	11,5	18,5	30	49	5,8	32	V600, DV1300, DV250	25	25
150	300	KRF150-12-45GR	M12	36	19	25	12,5	19,5	32	49	5,8	32	V600, DV1300, DV250	25	25
150	300	KRF150-16-45GR	M16	36	19	25	15,5	20,5	36	49	5,8	32	V600, DV1300, DV250	25	25

 $t = palm \ thickness, \ s = strip \ length$ 



### KRF angled terminals 90° 10 - 150 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn.
- Inspection hole
- For stranded (class 2) and multi-stranded (class 5) Cu conductors.
- $\bullet \ \, \text{For multi-stranded Cu conductors Elpress recommends the DUAL system}.$
- UL approved (35-150 mm²). DNV approved (16-150 mm²).





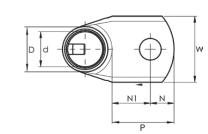


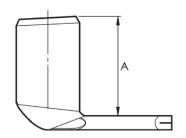


#### Example of marking KRF: 17 (neck) Elpress logotype 70 10F (palm)

17 = Die No. 70 = mm² 10 = palm hole for M10 F = type KRF for stranded and flexible conductors.







mm² (Cu)	AWG Cu	Name	Screw	W	d	D	N	N1	P	Α	t	s	Tool	Pcs/ pack	Die
10	8	KR10-6-90GR	M6	13	5	8	6,5	11,5	18	15	2,3	11	PVL350, V600, DV1300, DV250	100	8
10	8	KR10-8-90GR	M8	13,5	5	8	8,5	12	20,5	15	2,2	11	PVL350, V600, DV1300, DV250	100	8
16	6	KRF16-6-90GR	M6	13	6	9	6,5	11,5	18	16,5	2,9	12	PVL350, V600, DV1300, DV250	100	9
16	6	KRF16-8-90GR	M8	13	6	9	8,5	12	20,5	16,5	2,7	12	PVL350, V600, DV1300, DV250	100	9
25	4	KRF25-6-90GR	M6	16	8	11	6,5	11,5	18	18,5	2,7	13	PVL350, V600, DV1300, DV250	100	11
25	4	KRF25-8-90GR	M8	16	8	11	8,5	12	20,5	18,5	2,7	13	PVL350, V600, DV1300, DV250	100	11
25	4	KRF25-10-90GR	M10	17	8	11	11,5	13,5	25	18,5	2,9	13	PVL350, V600, DV1300, DV250	100	11
35	2	KRF35-6-90GR	M6	18	9	13	6,5	11,5	18	22,5	3,9	16	PVL350, V600, DV1300, DV250	100	13
35	2	KRF35-8-90GR	M8	18	9	13	8,5	12	20,5	22,5	3,9	16	PVL350, V600, DV1300, DV250	100	13
35	2	KRF35-10-90GR	M10	18	9	13	11,5	13,5	25	22,5	3,9	16	PVL350, V600, DV1300, DV250	100	13
50	1/0	KRF50-8-90GR	M8	21	11	14,5	8,5	17,5	26	30,5	3,4	19	PVL350, V600, DV1300, DV250	100	14,5
50	1/0	KRF50-10-90GR	M10	21	11	14,5	11,5	18,5	30	30,5	3,3	19	PVL350, V600, DV1300, DV250	100	14,5
50	1/0	KRF50-12-90GR	M12	21	11	14,5	12,5	19,5	32	30,5	3,3	19	PVL350, V600, DV1300, DV250	100	14,5
70	2/0	KRF70-8-90GR	M8	24	13	17	8,5	17,5	26	31,5	3,9	22	PVL350, V600, DV1300, DV250	50	17
70	2/0	KRF70-10-90GR	M10	24	13	17	11,5	18,5	30	31,5	3,9	22	PVL350, V600, DV1300, DV250	50	17
70	2/0	KRF70-12-90GR	M12	24	13	17	12,5	19,5	32	31,5	3,9	22	PVL350, V600, DV1300, DV250	50	17
95	4/0	KRF95-10-90GR	M10	28	15	20	11,5	18,5	30	32,5	4,9	25	V600, DV1300, DV250	50	20
95	4/0	KRF95-12-90GR	M12	28	15	20	12,5	19,5	32	32,5	4,9	25	V600, DV1300, DV250	50	20
95	4/0	KRF95-16-90GR	M16	29	15	20	15,5	20,5	36	32,5	4,8	25	V600, DV1300, DV250	50	20
120	250	KRF120-8-90GR	M8	32	17	22	8,5	17,5	26	42	4,9	27	V600, DV1300, DV250	25	22
120	250	KRF120-8-90GR-SB	M8	32	17	22	8,5	17,5	26	34,5	4,9	27	V600, DV1300, DV250	25	22
120	250	KRF120-10-90GR	M10	32	17	22	11,5	18,5	30	42	4,9	27	V600, DV1300, DV250	25	22
120	250	KRF120-10-90GR-SB	M10	32	17	22	11,5	18,5	30	34,5	4,9	27	DV250	25	22
120	250	KRF120-12-90GR	M12	32	17	22	12,5	19,5	32	42	4,9	27	V600, DV1300, DV250	25	22
120	250	KRF120-12-90GR-SB	M12	32	17	22	12,5	19,5	32	34,5	4,9	27	DV250	25	22
120	250	KRF120-16-90GR	M16	32	17	22	15,5	20,5	36	42	4,9	27	V600, DV1300, DV250	25	22
120	250	KRF120-16-90GR-SB	M16	32	17	22	15,5	20,5	36	34,5	,	27	DV250	25	22
150	300	KRF150-10-90GR	M10	36	19	25	11,5	18,5	30	47	5,9	32	V600, DV1300, DV250	25	25
150	300	KRF150-10-90GR-SB	M10	36	19	25	11,5	18,5	30	37,5		32	DV250	25	25
150	300	KRF150-12-90GR	M12	36	19	25	12,5	19,5	32	47	5,9	32	V600, DV1300, DV250	25	25
150	300	KRF150-12-90GR-SB	M12	36	19	25	12,5	19,5	32	37,5	5,9	32	DV250	25	25
150	300	KRF150-16-90GR-LB	M16	36	19	25	15,5	20,5	36	47	5,9	32	V600, DV1300, DV250	25	25
150	300	KRF150-16-90GR-SB	M16	36	19	25	15,5	20,5	36	37,5		32	DV250	25	25
185	350	KRF185-10-90GR-SB	M10	39	21	27	11,5	18,5	30	42,5	,		V1300, V250	25	27
185	350	KRF185-12-90GR-SB	M12	39	21	27	12,5	19,5	32	42,5			V1300, V250	25	27
185	350	KRF185-16-90GR-SB	M16	39	21	27	15,5	20,5	36	42,5	5,9	37	V1300, V250	25	27

t = palm thickness, s = strip length, SB = short barrel

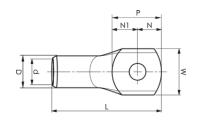


### KRT tube terminals 10 - 500 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn.
- Inspection hole.
- For stranded (class 2) Cu conductors.
- UL approved (10-500 mm²), DNV approved (10-400 mm²).

## Example of marking KRT: 16 (neck) Elpress logotype 70 10 (palm) 16 = Die No. 70 = mm² 10 = palm hole for M10





mm²	AWG	Name	C	W	_	_	N.	NIT					Total	Pcs/	D:-
(Cu)	Cu	Name	Screw	mm	d	D	N	N1	P	L	t	5	Tool	pack	Die
10 10	8 8	KRT10-5 KRT10-6	M5 M6	10 10	4,5 4,5	7 7	6 6	8 8	14 14	29 29	2,4 2,4	11 11	PVL350, V600, V1300, V250 PVL350, V600, V1300, V250	100 100	7 7
10	8	KRT10-8	M8	13	4,5	7	8	11	19	34	1,8	11	PVL350, V600, V1300, V250	100	7
10	8	KRT10-10	M10	16 19	4,5	7 7	8 10	10,5 14	18,! 24	5 34	1,5	11	PVL350, V600, V1300, V250 PVL350, V600, V1300, V250	100	7 7
10 16	8 6	KRT10-12 KRT16-5	M12 M5	12	4,5 5,5	, 8,5	6	8	14	41 34	1,2 2,9	11 15	PVL350, V600, V1300, V250 PVL350, V600, V1300, V250	100 100	, 8,5
16	6	KRT16-6	M6	12	5,5	8,5	6	8	14	34	2,9	15	PVL350, V600, V1300, V250	100	8,5
16 16	6 6	KRT16-8 KRT16-10	M8 M10	15 16	5,5 5,5	8,5 8,5	8 8	11 11	19 19	39 39	2,4 2,2	15 15	PVL350, V600, V1300, V250 PVL350, V600, V1300, V250	100 100	8,5 8,5
16	6	KRT16-12	M12	19	5,5	8,5	10	15	25	47	1,9	15	PVL350, V600, V1300, V250	100	8,5
25 25	4 4	KRT25-5 KRT25-6	M5 M6	14 14	7 7	10 10	9 9	12 12	21 21	43 43	2,9 2,9	17 17	PVL350, V600, V1300, V250 PVL350, V600, V1300, V250	100 100	10 10
25	4	KRT25-8	M8	15	7	10	9	12	21	43	2,8	17	PVL350, V600, V1300, V250	100	10
25	4	KRT25-10	M10	16	7	10	9	12	21	43	2,7	17	PVL350, V600, V1300, V250	100	10
25 25	4 4	KRT25-12 KRT25-16	M12 M16	19 25	7 7	10 10	12 15	13 16	25 31	48 54	2,1 1,7	17 17	PVL350, V600, V1300, V250 PVL350, V600, V1300, V250	100 100	10 10
35	2	KRT35-6	M6	17	8,5	12	9,5	11,5	21	49	3,4	20	PVL350, V600, V1300, V250	100	12
35 35	2	KRT35-8 KRT35-10	M8 M10	17 19	8,5 8,5	12 12	9,5 9,5	11,5 11,5	21 21	49 49	3,4 3,1	20 20	PVL350, V600, V1300, V250 PVL350, V600, V1300, V250	100 100	12 12
35	2	KRT35-10	M12	22	8,5	12	12	14	26	53	2,5	20	PVL350, V600, V1300, V250	100	12
35	2	KRT35-16	M16	25	8,5	12	15	16	31	59	2,2	20	PVL350, V600, V1300, V250	100	12 14
50 50	1/0 1/0	KRT50-6 KRT50-8	M6 M8	20 20	10 10	14 14	11 11	11 11	22 22	53 53	3,9 3,9	22 22	PVL350, V600, V1300, V250 PVL350, V600, V1300, V250	50 50	14
50	1/0	KRT50-10	M10	20	10	14	11	11	22	53	3,9	22	PVL350, V600, V1300, V250	50	14
50 50	1/0 1/0	KRT50-12 KRT50-16	M12 M16	22 25	10 10	14 14	12 15	14 16	26 31	56 62	3,5 3,2	22 22	PVL350, V600, V1300, V250 PVL350, V600, V1300, V250	50 50	14 14
70	2/0	KRT70-6	M6	23	12	16	11	11	22	55	3,9	23	PVL350, V600, V1300, V250	50	16
70 70	2/0 2/0	KRT70-8 KRT70-10	M8 M10	23 23	12 12	16 16	11 11	11 11	22 22	55 55	3,9 3,9	23 23	PVL350, V600, V1300, V250 PVL350, V600, V1300, V250	50 50	16 16
70	2/0	KRT70-10 KRT70-12	M12	23	12	16	12	13	25	58	3,9	23	PVL350, V600, V1300, V250	50	16
70	2/0	KRT70-16	M16	26	12	16	15	16	31	64	3,5	23	PVL350, V600, V1300, V250	50	16
95 95	4/0 4/0	KRT95-8 KRT95-10	M8 M10	26 26	13,5 13,5	18 18	11 11	12 12	23 23	60 60	4,4 4,4	26 26	V600, V1300, V250 V600, V1300, V250	50 50	18 18
95	4/0	KRT95-12	M12	26	13,5	18	12	14	26	63	4,4	26	V600, V1300, V250	50	18
95 120	4/0 250	KRT95-16 KRT120-8	M16 M8	28 28	13,5 15	18 19	15 11	16 14	31 25	69 64	4 3,9	26 26	V600, V1300, V250 V600, V1300, V250	50 50	18 19
120	250	KRT120-10	M10	28	15	19	11	14	25	64	3,9	26	V600, V1300, V250	50	19
120 120	250 250	KRT120-12 KRT120-16	M12 M16	28 28	15 15	19 19	12 15	13 16	25 31	64 70	3,9 3,9	26 26	V600, V1300, V250	50 50	19 19
150	250	KRT150-10	M10	32	17	22	15	16	31	76	3,9 4,9	30	V600, V1300, V250 V600, V1300, V250	25	22
150	300	KRT150-12	M12	32	17	22	15	16	31	76	4,9	30	V600, V1300, V250	25	22
150 150	300 300	KRT150-16 KRT150-20	M16 M20	32 32	17 17	22 22	15 19	16 19	31 38	76 83	4,9 4,9	30 30	V600, V1300, V250 V600, V1300, V250	25 25	22 22
185	350	KRT185-10	M10	35	19	24	15	16	31	79	4,9	32	V600, V1300, V250	25	24
185 185	350 350	KRT185-12 KRT185-16	M12 M16	35 35	19 19	24 24	15 15	16 16	31 31	79 79	4,9 4,9	32 32	V600, V1300, V250 V600, V1300, V250	25 25	24 24
185	350	KRT185-20	M20	35	19	24	19	19	38	86	4,9	32	V600, V1300, V250 V600, V1300, V250	25	24
240	500	KRT240-10	M10	38	21	26	15	16	31	86	4,9	37	V600, V1300, V250	25	26
240 240	500 500	KRT240-12 KRT240-16	M12 M16	38 38	21 21	26 26	15 15	16 16	31 31	86 86	4,9 4,9	37 37	V600, V1300, V250 V600, V1300, V250	25 25	26 26
240	500	KRT240-20	M20	38	21	26	19	19	38	93	4,9	37	V600, V1300, V250	25	26
300 300	600 600	KRT300-10 KRT300-12	M10 M12	44 44	24 24	30 30	19 19	19 19	38 38	100 100	5,8 5,8	42 42	V1300, V250 V1300, V250	10 10	30 30
300	600	KRT300-12		44	24	30	19	19	38	100	5,8	42	V1300, V250 V1300, V250	10	30
300	600	KRT300-20	M20	44	24	30	19	19	38	100	5,8	42	V1300, V250	10	30
300 400	600 750	KRT300-24 KRT400-12	M24 M12	45 48	24 26	30 32	23 22	23 31	46 53	108 116	5,3 5,8	42 44	V1300, V250 V1300, V250	10 10	30 32
400	750	KRT400-16	M16	48	26	32	22	31	53	116	5,8	44	V1300, V250	10	32
400 400	750 750	KRT400-20 KRT400-24	M20 M24	48 48	26 26	32 32	22 22	31 31	53 53	116 116	5,8 5,8	44 44	V1300, V250 V1300, V250	10 10	32 32
500		KRT500-24	M12	58	31	40	25	35	60	150	8,8	70	V250, V1470	10	40
500		KRT500-14	M14	58	31	40	25	35	60	150	8,8	70	V250, V1470	10	40
500 500		KRT500-16 KRT500-20	M16 M20	58 58	31 31	40 40	25 25	35 35	60 60	150 150	8,8 8,8	70 70	V250, V1470 V250, V1470	10 10	40 40
			-	-		-	-	-	-		,-	-	•		

t = palm thickness, s = strip length, SB = short barrel















### KRD tube terminals 16 - 1000 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn.
- Inspection hole.
- For stranded (class 2) Cu conductors.





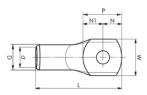




Example of marking KRD: 14 (neck) Elpress logotype 70 10 (palm)

14 = Die No. 70 = mm² 10 = palm hole for M10





ondu	ctors.								COMPLIA			COMP	CENTIFION		_
mm²	AWG	Mana	c	W		_		NI4					Total	Pcs/	D:-
(Cu)	Cu	Name	Screw	mm	d	D	N	N1	P	L	t	S	Tool	pack	Die
16	6	KRD16-5	M5	12	5,4	8	6	8	14	29	2,5	10	PVL350, V600, V1300, V250	100	8
16	6	KRD16-6	M6	12	5,4	8	6	8	14	29	2,5	10	PVL350, V600, V1300, V250	100	
16	6	KRD16-8	M8	14	5,4	8	8	9	17	33	2,1	10	,,,	100	
16	6	KRD16-10	M10	16	5,4	8	8	10	18	34	1,8	10	PVL350, V600, V1300, V250	100	
16	6	KRD16-12	M12	18	5,4	8	10	13,5	23,5		1,6	10	PVL350, V600, V1300, V250	100	
25	4	KRD25-00	AAC	16	6,7	9	7	0	22	38	1,8	10	PVL350, V600, V1300, V250	100	
25 25	4	KRD25-6 KRD25-8	M6 M8	13 13	6,7 6,7	9 9	7	9 9	16 16	32 32	2,2	10 10	PVL350, V600, V1300, V250 PVL350, V600, V1300, V250	100 100	
25	4	KRD25-10	M10	16	6,7	9	10	12	22	38	1,8	10	PVL350, V600, V1300, V250		
25	4	KRD25-10	M12	22	6,7	9	12	13	25	47	1,6	13	PVL350, V600, V1300, V250		
35	2	KRD35-00	M35		8	11				39	_,0		PVL350, V600, V1300, V250	100	
35	2	KRD35-6	M6	16	8	11	8	10	18	39	2,9	13	PVL350, V600, V1300, V250		
35	2	KRD35-8	M8	16	8	11	8	10	18	39	2,9	13	PVL350, V600, V1300, V250		11
35	2	KRD35-10	M10	17	8	11	10	11	21	42	2,7	13	PVL350, V600, V1300, V250	100	11
35	2	KRD35-12	M12	22	8	11	12	13	25	47	2,1	13	PVL350, V600, V1300, V250	100	11
35	2	KRD35-14	M14	22	8	11	12	13	25	47	2	13	PVL350, V600, V1300, V250	100	11
35	2	KRD35-16	M16	25	8	11	15	18	33	56	1,7	13	PVL350, V600, V1300, V250	100	
50	1/0	KRD50-6	M6	18	9,5	12	8,5	11,5		44	2,4	16	PVL350, V600, V1300, V250	100	
50	1/0	KRD50-8	M8	18	9,5	12	8,5	11,5	20	44	2,4	16	PVL350, V600, V1300, V250	100	
50	1/0	KRD50-10	M10	18	9,5	12	9,5	11,5	21	49	2,4	20	PVL350, V600, V1300, V250		
50	1/0	KRD50-12	M12	20	9,5	12	12	14 18	26	53	2,2	20	PVL350, V600, V1300, V250	100	
50 70	1/0 2/0	KRD50-16 KRD70-00	M16	23 25	9,5 11,3	12 14	15	10	33 31	63	5 1,8 2,2	20 23	PVL350, V600, V1300, V250 PVL350, V600, V1300, V250	100 50	14
70	2/0	KRD70-00	M7	22	11,3	14	11	11	22	54	2,5	23	PVL350, V600, V1300, V250		14
70	2/0	KRD70-7	M8	22	11,3	14	11	11	22	54	2,6	23	PVL350, V600, V1300, V250	50	14
70	2/0	KRD70-10	M10	22	11,3	14	11	11	22	54	2,6	23	PVL350, V600, V1300, V250	50	14
70	2/0	KRD70-12	M12	22	11,3	14	12	13	25	57	2,6	23	PVL350, V600, V1300, V250	50	14
70	2/0	KRD70-16	M16	25	11,3	14	15	16	31	63	2,2	23	PVL350, V600, V1300, V250	50	14
95	4/0	KRD95-00		28	13	16			31	67	2,5	26	PVL350, V600, V1300, V250	50	16
95	4/0	KRD95-6	M6	24	13	16	11	11	22	58	3	26	PVL350, V600, V1300, V250	50	16
95	4/0	KRD95-8	M8	24	13	16	11	11	22	58	2,9	26	PVL350, V600, V1300, V250	50	16
95	4/0	KRD95-10	M10	24	13	16	11	11	22	58	2,9	26	PVL350, V600, V1300, V250		16
95	4/0	KRD95-12	M12	24	13	16	12	13	25	61	2,9	26	PVL350, V600, V1300, V250	50	16
95	4/0	KRD95-14	M14	24	13	16	12	13	25	61	2,8	26	PVL350, V600, V1300, V250	50	16
95 120	4/0 250	KRD95-16	M16	28 28	13 15	16 19	15	16	31 31	67 70	2,5 3,8	26 26	PVL350, V600, V1300, V250	50 50	16 19
120	250	KRD120-00 KRD120-8	M8	28	15	19	11	14	25	64	3,8	26	V600, V1300, V250 V600, V1300, V250	50	19
120	250	KRD120-10	M10	28	15	19	11	14	25	64	3,9	26	V600, V1300, V250	50	19
120	250	KRD120-12	M12	28	15	19	11	14	25	64	3,9	26	V600, V1300, V250	50	19
120	250	KRD120-14	M14	28	15	19	15	17	32	70	4	26	V600, V1300, V250	50	19
120	250	KRD120-16	M16	28	15	19	15	16	31	70	3,9	26	V600, V1300, V250	50	19
120	250	KRD120-20	M20	30	15	19	16,5	5 18,5	35	74	3,7	26	V600, V1300, V250	50	19
150	300	KRD150-00		32	17	22			38	83	4,8	30	V600, V1300, V250	50	22
150		KRD150-8	M8	32	17		15	23	38	83	4,8	30	V600, V1300, V250	50	22
150	300	KRD150-10	M10	32	17	22	15	16	31	76	4,9	30	V600, V1300, V250	50	22
150		KRD150-12	M12	32	16	22	15	16	31	76	4,9	30	V600, V1300, V250	50	22
150		KRD150-14	M14	32	17	22	15	17	32	76	5	30	V600, V1300, V250	50	22
150		KRD150-16	M16	32	17	22	15	16	31	76	4,9	30	V600, V1300, V250	50	22
150 185		KRD150-20 KRD185-00	M20	32 36	17 19	22 25	19	19	38 38	83 87	4,9 5,9	30 32	V600, V1300, V250 V600, V1300, V250	50 50	22 25
185		KRD185-8	M8	36	19	25	15	16	31	80	5,9	32	V600, V1300, V250	50	25
185		KRD185-10	M10	36	19	25	15	16	31	80	5,9	32	V600, V1300, V250	50	25
185		KRD185-12	M12	36	19	25	15	16	31	80	5,9	32	V600, V1300, V250	50	25
185		KRD185-14	M14	36	19	25	15	16	31	80	5,8	32	V600, V1300, V250	50	25
185		KRD185-16	M16	36	19	25	15	16	31	80	5,9	32	V600, V1300, V250	50	25
185	350	KRD185-20	M20	36	19	25	19	19	38	87	5,9	32	V600, V1300, V250	50	25
240		KRD240-00		39	21	27			38	93	5,9	37	V1300, V250	50	27
240		KRD240-10	M10	39	21	27	15	16	31	86	5,9	37	V1300, V250	50	27
240		KRD240-12	M12	39	21	27	15	16	31	86	5,9	37	V1300, V250	50	27
240		KRD240-16	M16	39	21	27	15	16	31	86	5,9	37	V1300, V250	50	27
240	500	KRD240-20	M20	39	21	27	19	19	38	93	5,9	37	V1300, V250	50	27

t = palm thickness, s = strip length





### KRD tube terminals 16 - 1000 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn.
- Inspection hole.
- For stranded (class 2) Cu conductors.





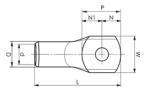




Example of marking KRD: 14 (neck) Elpress logotype 70 10 (palm)

14 = Die No. 70 = mm² 10 = palm hole for M10





mm² (Cu)	AWG Cu	Name	Screw	W mm	d	D	N	N1	Р	L	t	s	Tool	Pcs/ pack	Die
300	600	KRD300-00		44	24	30			38	100	5,8	42	V1300, V250	25	30
300	600	KRD300-10	M10	44	24	30	19	19	38	100	5,8	42	V1300, V250	25	30
300	600	KRD300-12	M12	44	24	30	19	19	38	100	5,8	42	V1300, V250	25	30
300	600	KRD300-14	M14	44	24	30	19	20	39	100	6	42	V1300, V250	25	30
300	600	KRD300-16	M16	44	24	30	19	19	38	100	5,8	42	V1300, V250	25	30
300	600	KRD300-20	M20	44	24	30	19	19	38	100	5,8	42	V1300, V250	25	30
300	600	KRD300-24	M24	44	24	30	22	24	46	108	5,8	42	V1300, V250	25	30
400	750	KRD400-00		48	26	32			53	116	5,8	44	V1300, V250	25	32
400	750	KRD400-12	M12	48	26	32	22	31	53	116	5,8	44	V1300, V250	25	32
400	750	KRD400-14	M14	48	26	32	22	31	53	116	5,8	44	V1300, V250	25	32
400	750	KRD400-16	M16	48	26	32	22	31	53	116	5,8	44	V1300, V250	25	32
400	750	KRD400-24	M24	48	26	32	22	31	53	116	5,8	44	V1300, V250	25	32
400	750	KRD400-20	M20	48	26	32	22	31	53	116	5,8	44	V1300, V250	25	32
500	1000	KRD500-00		58	31	40			70	160	8,8	70	V250, V1470	5	40
500	1000	KRD500-12	M12	58	31	40	25	35	60	150	8,8	70	V250, V1470	5	40
500	1000	KRD500-14	M14	58	31	40	25	35	60	150	8,8	70	V250, V1470	5	40
500	1000	KRD500-16	M16	58	31	40	25	35	60	150	8,8	70	V250, V1470	5	40
500	1000	KRD500-20	M20	58	31	40	25	35	60	150	8,8	70	V250, V1470	5	40
500	1000	KRD500-24	M24	58	31	40	25	35	60	150	8,8	70	V250, V1470	5	40
630	1250	KRD630-00		65	34	45			75	165	10,8	70	V250, V1470	1	45
630	1250	KRD630-12	M12	65	34	45	25	35	60	150	10,8	70	V250, V1470	1	45
630	1250	KRD630-16	M16	65	34	45	25	35	60	150	10,8	70	V250, V1470	1	45
630	1250	KRD630-18	M18	65	34	45	25	35	60	150	11	70	V250, V1470	1	45
630	1250	KRD630-20	M20	65	34	45	25	35	60	150	10,8	70	V250, V1470	1	45
630	1250	KRD630-22	M22	65	34	45	25	35	60	134	11	52	V250, V1470	1	45
630	1250	KRD630-24	M24	65	34	45	25	35	60	150	10,8	70	V250, V1470	1	45
800	1600	KRD800-00		75	39	53			80	195	13,8	80	V250, V1470	1	53
800	1600	KRD800-16	M16	75	39	53	25	35	60	175	13,8	80	V250, V1470	1	53
800	1600	KRD800-24	M24	75	39	53	35	45	80	195	13,8	80	V250, V1470	1	53
1000	2000	KRD1000-00		80	43	56			80	195	12,8	80	V1470	1	56
1000	2000	KRD1000-20		80	43	56	35	45	80	195	12,8	80	V1470	1	56
1000	2000	KRD1000-24	M24	80	43	56	35	45	80	195	12,8	80	V1470	1	56

t = palm thickness, s = strip length



### DIN 46235 tube terminals 6 - 1000 mm<sup>2</sup>

- Din tube terminals for Cu conductors.
- Material: Cu 99.95%, tin plated Cu/Sn.
- Dimensions according to DIN 46235, the number of crimps is indicated on the neck of the terminal.
- For crimping DIN 46235 terminals, use dies according to DIN 48083.

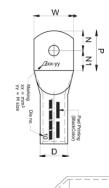


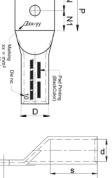




#### Example of plate marking: 95 1095 = mm<sup>2</sup> 10 = palm hole for M10







mm² (Cu)	AWG Cu	Name	Screw	W	d	D	N	N1	Р	L	t	s	Tool	Pcs/ pack	Die
6	10	KRDIN6-5	M5	8,5	3,8	5,5	7,5	7,5	15	31,5	1,5	10	V600, V1300	100	5DIN
6	10	KRDIN6-6	M6	8,5	3,8	5,5	9	9,5	18,5	33	1,5	10	V600, V1300	100	5DIN
6	10	KRDIN6-8	M8	13	3,8	5,5	10	10	20	35	1	10	V600, V1300	100	5DIN
10	8	KRDIN10-5	M5	9	4,5	6	7,5	7,5	15	34,5	1,5	10	V600, V1300	100	6DIN
10	8	KRDIN10-6	M6	9	4,5	6	9	9,5	18,5	36	1,5	10	V600, V1300	100	6DIN
10	8	KRDIN10-8	M8	13	4,5	6	10	10	20	37	1	10	V600, V1300	100	6DIN
10	8	KRDIN10-10	M10	15	4,5	6	10	11,5	21,5	39	0,8	10	V600, V1300	100	6DIN
16	6	KRDIN16-6	M6	13	5,5	8,5	9	9,5	18,5	45	2,5	20	V600, V1300	100	8DIN
16	6	KRDIN16-8	M8	13	5,5	8,5	11,5	11,5	23	47,5	2,5	20	V600, V1300	100	8DIN
16	6	KRDIN16-10	M10	17	5,5	8,5	13,5	13,5	27	49,5	1,9	20	V600, V1300	100	8DIN
16	6	KRDIN16-12	M12	18	5,5	8,5	13,5	13,5	27	52	1,8	20	V600, V1300	100	8DIN
25	4	KRDIN25-6	M6	14	7	10	9	9,5	18,5	47	3	20	V600, V1300	100	10DIN
25	4	KRDIN25-8	M8	16	7	10		11,5		49,5	2,5	20	V600, V1300	100	10DIN
25	4	KRDIN25-10	M10	17	7	10		13,5		51,5	2,4	20	V600, V1300	100	10DIN
25	4	KRDIN25-12	M12	19	7	10		14,5		52,5	2,1	20	V600, V1300	100	10DIN
35	2	KRDIN35-6	M6	17	8,2	12,5		8		49,5	4,1	20	V600, V1300	100	12DIN
35	2	KRDIN35-8	M8	17	-		11,5		23	53,5	4,1	20	V600, V1300	50	12DIN
35	2	KRDIN35-10	M10	19	8,2		13,5			55,5	3,7	20	V600, V1300	50	12DIN
35	2	KRDIN35-12	M12	21	-		14,5			56,5	3,3	20	V600, V1300	50	12DIN
50	1/0	KRDIN50-6	M6	20	10		11,5			63,5	4,3	28	V600, V1300	50	14DIN
50	1/0	KRDIN50-8	M8	20	10		11,5			63,5	4,3	28	V600, V1300	50	14DIN
50	1/0	KRDIN50-10	M10	22	10		13,5			65,5	3,9	28	V600, V1300	50	14DIN
50	1/0	KRDIN50-12	M12	24	10		14,5			66,5	3,6	28	V600, V1300	50	14DIN
50	1/0	KRDIN50-16	M16	28	10		17,5			69,5	3,1	28	V600, V1300	50	14DIN
70	2/0	KRDIN70-6	M6	24			11,5			66,5	4,5	28	V600, V1300		16DIN
70	2/0	KRDIN70-8	M8	24			11,5			66,5	4,5	28	V600, V1300	25	16DIN
70	2/0	KRDIN70-10	M10	24			13,5			68,5	4,5	28	V600, V1300	25	16DIN
70	2/0	KRDIN70-12	M12	24			14,5			69,5	4,5	28	V600, V1300		16DIN
70	2/0	KRDIN70-16	M16	30 28			17,5	13,5		72,5	3,7	28 35	V600, V1300	25 25	16DIN
95 95	4/0 4/0	KRDIN95-8 KRDIN95-10	M8 M10	28	13,5 13,5			13,5		78,5 78,5	5 5	35	V600, V1300 V600, V1300		18DIN 18DIN
95 95	4/0	KRDIN95-10 KRDIN95-12	M12	28	13,5			14,5		76,5 79,5	5	35	V600, V1300 V600, V1300	25	18DIN
95	4/0	KRDIN95-12 KRDIN95-16	M16	32	13,5			17,5		82,5	4,4	35	V600, V1300 V600, V1300	25	18DIN
120	250	KRDIN93-10 KRDIN120-10		32	15,5			13,5		83,5	5	35	V600, V1300 V600, V1300		20DIN
120	250	KRDIN120-12		32	15,5			14,5		84,5	5	35	V600, V1300	20	20DIN
120	250		M16	32	15,5			17,5		87,5	5	35	V600, V1300	20	20DIN
120	250	KRDIN120-20		38	15,5			20,5		90,5	4,1	35	V600, V1300	20	20DIN
150	300	KRDIN150-10		34	17		13,5			91,5	6	35	V600, V1300		22DIN
150	300	KRDIN150-12		34	17		14,5		29	92,5	6	35	V600, V1300	20	22DIN
150	300	KRDIN150-16		34	17		17,5			95,5	6	35	V600, V1300	20	22DIN
150	300		M20	40	17		20,5			98,5	5,2	35	V600, V1300		22DIN
185	350	KRDIN185-10	M10	37	19	25,5	13,5	13,5	27	95,5	6	40	V1300, V250	10	25DIN
185	350	KRDIN185-12	M12	37	19	25,5	13,5	13,5	27	95,5	6	40	V1300, V250	10	25DIN
185	350	KRDIN185-16	M16	37	19		17,5			99,5	6	40	V1300, V250	10	25DIN
185	350	KRDIN185-20	M20	40	19	25,5	20,5	21,5	42	102,5	5,7	40	V1300, V250	10	25DIN
240	500	KRDIN240-10	M10	42	21,5	29	14,5	14,5	29	117,5	7,1	40	V1300, V250	10	28DIN
240	500	KRDIN240-12	M12	42	21,5	29	14,5	14,5	29	106,5	7,1	40	V1300, V250	10	28DIN
240	500	KRDIN240-16	M16	42	21,5	29	17,5	17,5	35	109,5	7,1	40	V1300, V250	10	28DIN
240	500	KRDIN240-20	M20	45	21,5	29	20,5	21,5	42	112,5	6,5	40	V1300, V250	10	28DIN
300	600	KRDIN300-12	M12	48	24,5	32	17,5	17,5	35	117,5	7	50	V1300, V250	5	32DIN
300	600	KRDIN300-16	M16	48	24,5			17,5		117,5		50	V1300, V250		32DIN
300	600	KRDIN300-20		48	24,5			21,5		120,5		50	V1300, V250		32DIN
400	750	KRDIN400-12		55			23,5			138,5		70	V1300, V250		38DIN
400	750	KRDIN400-16		55			23,5			138,5			V1300, V250		38DIN
400	750	KRDIN400-20		55			23,5			138,5		70	V1300, V250		38DIN
500		KRDIN500-20			31			21,5		148,5			V250	2	42DIN
625	1250	KRDIN625-20		63	34,5			21,5		158,5		80	V250	2	44DIN
1000		KRDIN800-20		75 oc	40	52		21,5					V1470	1	52DIN
1000	2000	KRDIN1000-20	10120	00	44	Þδ	23,5	21,5	45	100,5	13,2	TOO	V1470	1	58DIN

 $t = palm \ thickness, \ s = strip \ length$ 



### DIN 46234 sheet metal terminals 10 - 185 mm<sup>2</sup>

- Material: Cu 99.9% tin plated Cu/Sn.
- Dimensions acc. to DIN 46234.

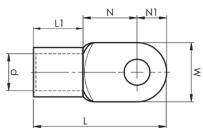












mm² (Cu)	AWG Cu	Name	Screw	W mm	d	N	N1	L	Tool	Pcs/ pack	Die
10	8	B10-5R	M5	10	4,5	8	5	16	GWB4010, V600, V1300, V250	100	7
10	8	B10-6R	M6	11	4,5	9	5,5	17	GWB4010, V600, V1300, V250	100	7
10	8	B10-8R	M8	14	4,5	12	7	27	GWB4010, V600, V1300, V250	100	7
10	8	B10-10R	M10	18	4,5	13	9	21	GWB4010, V600, V1300, V250	100	7
10	8	B10-12R	M12	22	4,5	15	11	23	GWB4010, V600, V1300, V250	100	7
16	6	B16-5R	M5	11	5,8	10	5,5	26	V600, V1300, V250	100	8
16	6	B16-6R	M6	11	5,8	10	5,5	26	V600, V1300, V250	100	8
16	6	B16-8R	M8	14	5,8	12	7	29	V600, V1300, V250	100	8
16	6	B16-10R	M10	18	5,8	14	9	33	V600, V1300, V250	100	8
16	6	B16-12R	M12	22	5,8	16	11	37	V600, V1300, V250	100	8
16	6	B16-16R	M16	30	5,8	24	15	49	V600, V1300, V250	100	8
25	4	B25-6R	M6	12	7,5	14	6	31	V600, V1300, V250	100	10
25	4	B25-8R	M8	16	7,5	14	8	33	V600, V1300, V250	100	10
25	4	B25-10R	M10	18	7,5	15	9	35	V600, V1300, V250	100	10
25	4	B25-12R	M12	22	7,5	20	11	42	V600, V1300, V250	100	10
25	4	B25-16R	M16	28	7,5	24	14	49	V600, V1300, V250	100	10
35	2	B35-6R	M6	15	9	14	7,5	34	V600, V1300, V250	100	12
35	2	B35-8R	M8	16	9	14	8	34	V600, V1300, V250	100	12
35	2	B35-10R	M10	18	9	15	9	36	V600, V1300, V250	100	12
35	2	B35-12R	M12	22	9	19	11	42	V600, V1300, V250	100	12
35	2	B35-16R	M16	28	9	24	14	50	V600, V1300, V250	100	12
50	1/0	B50-6R	M6	18	11	18	9	43	V600, V1300, V250	100	14,5
50	1/0	B50-8R	M8	18	11	18	9	43	V600, V1300, V250	100	14,5
50	1/0	B50-10R	M10	18	11	18	9	43	V600, V1300, V250	100	14,5
50	1/0	B50-12R	M12	22	11	20	11	47	V600, V1300, V250	100	14,5
50	1/0	B50-16R	M16	28	11	24	14	54	V600, V1300, V250	100	14,5
70	2/0	B70-8R	M8	22	13	20	11	49	V600, V1300, V250	100	17
70	2/0	B70-10R	M10	22	13	20	11	49	V600, V1300, V250	100	17
70	2/0	B70-12R	M12	22	13	20	11	49	V600, V1300, V250	100	17
70	2/0	B70-16R	M16	28	13	24	14	56	V600, V1300, V250	100	17
95	4/0	B95-10R	M10	24	15	22	12	54	V600, V1300, V250	100	20
95	4/0	B95-12R	M12	24	15	22	12	54	V600, V1300, V250	100	20
95	4/0	B95-16R	M16	28	15	24	14	58	V600, V1300, V250	100	20
120	250	B120-10R	M10	24	16,5	22	12	56	V600, V1300, V250	50	*
120	250	B120-12R	M12	24	16,5	22	12	56	V600, V1300, V250	50	*
120	250	B120-16R	M16	28	16,5	26	14	62	V600, V1300, V250	50	*
150	300	B150-12R	M12	30	19	26	15	65	V600, V1300, V250	50	*
150	300	B150-16R	M16	30	19	26	15	65	V600, V1300, V250	50	*
185	350	B185-12R	M12	36	21	22	18	68	V1300, V250	50	*
185	350	B185-16R	M16	36	21	22	18	68	V1300, V250	50	*

<sup>\*</sup> Contact Elpress



### KS/KSF through connectors 0.75 - 800 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn.
- Inspection hole and int. cable stop.
- For stranded (class 2) and multi-stranded (class 5) Cu conductors.
- For multi-stranded Cu conductors Elpress recommends the DUAL system.
- UL approved (1-500 mm²). DNV approved (16-400 mm²).







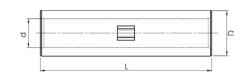




#### Examples of marking: 20 95F (Elpress logotype is included on the marking.)

20 = Die No. 95 = mm<sup>2</sup> F = type KSF for stranded and flexible conductors 111 = screen mm<sup>2</sup>





Cu	Name	Screen conductor	d mm	D	L	5	Tool	Pcs/ pack	Die
(22)-18	KS0,75		1,3	2,8	14	7	DKB0325, DKB0760	100	
(18)-16	KS1,5		1,8	3,3	14	7	DKB0325, DKB0760	100	
(16)-14	KS2,5		2,3	4,2	16	8	DKB0325, DKB0760	100	
12	KS4		3	5	19	9	GWB4099, ES2258	100	
10	KS6		4	6	19	9	GWB4099, ES2258	100	
8	KS10		5	8	30	15	GWB4099, ES2258, PVL350, V600, DV1300	100	8
6	KSF16	15	6	9	35	17	ES2258, PVL350, V600, DV1300	100	9
4	KSF25	21-29	8	11	35	17	ES2258, PVL350, V600, DV1300	100	11
2	KSF35	41	9	13	35	17	PVL350, V600, DV1300, DV250	100	13
1/0	KSF50	57	11	14,5	45	22	V600, DV1300, DV250	50	14,5
2/0	KSF70	72-88	13	17	45	22	V600, DV1300, DV250	50	17
4/0	KSF95	111	15	20	45	25	V600, DV1300, DV250	50	20
250	KSF120		17	22	55	27	V600, DV1300, DV250	50	22
300	KSF150		19	25	65	32	V600, DV1300, DV250	25	25
350	KSF185		21	27	70	35	DV1300, DV250	25	27
500	KSF240A		22,5	29	70	35	DV1300, DV250	25	30
600	KSF300A		24,5	31,5	75	37	DV1300, DV250	10	32
750	KSF400A		30	38	100	50	DV1300, DV250	10	38
1000	KSF500		33	42	135	68	DV250, V1470	5	42
1000	KSF630		39	53	175	88	DV250, V1470	3	53
1000	KSF800		42,5	53	175	88	DV250, V1470	2	53
	(22)-18 (18)-16 (16)-14 12 10 8 6 4 2 1/0 2/0 4/0 250 300 350 500 600 750 1000	(22)-18 KS0,75 (18)-16 KS1,5 (16)-14 KS2,5 12 KS4 10 KS6 8 KS10 6 KSF16 4 KSF25 2 KSF35 1/0 KSF50 2/0 KSF70 4/0 KSF95 250 KSF120 300 KSF120 300 KSF150 350 KSF185 500 KSF240A 600 KSF300A 750 KSF400A 1000 KSF500	Cu conductor  (22)-18 KS0,75 (18)-16 KS1,5 (16)-14 KS2,5 12 KS4 10 KS6 8 KS10 6 KSF16 15 4 KSF25 21-29 2 KSF35 41 1/0 KSF50 57 2/0 KSF70 72-88 4/0 KSF95 111 250 KSF120 300 KSF120 300 KSF150 350 KSF185 500 KSF240A 600 KSF300A 750 KSF400A 1000 KSF500 1000 KSF630	Cu         conductor         mm           (22)-18         KS0,75         1,3           (18)-16         KS1,5         2,3           12         KS4         3           10         KS6         4           8         KS10         5           6         KSF16         15         6           4         KSF25         21-29         8           2         KSF35         41         9           1/0         KSF50         57         11           2/0         KSF70         72-88         13           4/0         KSF95         111         15           250         KSF120         17           300         KSF150         19           350         KSF185         21           500         KSF300A         24,5           750         KSF400A         30           1000         KSF500         33           1000         KSF630         39	Cu         conductor         mm           (22)-18         KS0,75         1,3         2,8           (18)-16         KS1,5         2,3         4,2           12         KS4         3         5           10         KS6         4         6           8         KS10         5         8           6         KSF16         15         6         9           4         KSF25         21-29         8         11           2         KSF35         41         9         13           1/0         KSF50         57         11         14,5           2/0         KSF70         72-88         13         17           4/0         KSF95         111         15         20           250         KSF120         17         22           300         KSF150         19         25           350         KSF185         21         27           500         KSF300A         24,5         31,5           750         KSF400A         30         38           1000         KSF500         33         42           1000         KSF630         39	Cu         conductor         mm	Cu         conductor         mm	Cu         conductor         mm         Framework           (22)-18         KSO,75         1,3         2,8         14         7         DKB0325, DKB0760           (18)-16         KS1,5         1,8         3,3         14         7         DKB0325, DKB0760           (16)-14         KS2,5         2,3         4,2         16         8         DKB0325, DKB0760           12         KS4         3         5         19         9         GWB4099, ES2258           10         KS6         4         6         19         9         GWB4099, ES2258, PVL350, V600, DV1300           6         KSF16         15         6         9         35         17         ES2258, PVL350, V600, DV1300           4         KSF25         21-29         8         11         35         17         ES2258, PVL350, V600, DV1300           2         KSF35         41         9         13         35         17         PVL350, V600, DV1300, DV250           1/0         KSF50         57         11         14,5         45         22         V600, DV1300, DV250           2/0         KSF10         72-88         13         17         45         22         V600, DV1300, DV250 <td>Cu         Conductor         mm         Free Pack           (22)-18         KS0,75         1,3         2,8         14         7         DKB0325, DKB0760         100           (18)-16         KS1,5         1,8         3,3         14         7         DKB0325, DKB0760         100           (16)-14         KS2,5         2,3         4,2         16         8         DKB0325, DKB0760         100           12         KS4         3         5         19         9         GWB4099, ES2258         100           10         KS6         4         6         19         9         GWB4099, ES2258, PVL350, V600, DV1300         100           8         KS10         5         8         30         15         GWB4099, ES2258, PVL350, V600, DV1300         100           4         KSF16         15         6         9         35         17         ES2258, PVL350, V600, DV1300         100           4         KSF25         21-29         8         11         35         17         PVL350, V600, DV1300, DV250         100           1/0         KSF35         41         9         13         35         17         PVL350, V600, DV1300, DV250         50</td>	Cu         Conductor         mm         Free Pack           (22)-18         KS0,75         1,3         2,8         14         7         DKB0325, DKB0760         100           (18)-16         KS1,5         1,8         3,3         14         7         DKB0325, DKB0760         100           (16)-14         KS2,5         2,3         4,2         16         8         DKB0325, DKB0760         100           12         KS4         3         5         19         9         GWB4099, ES2258         100           10         KS6         4         6         19         9         GWB4099, ES2258, PVL350, V600, DV1300         100           8         KS10         5         8         30         15         GWB4099, ES2258, PVL350, V600, DV1300         100           4         KSF16         15         6         9         35         17         ES2258, PVL350, V600, DV1300         100           4         KSF25         21-29         8         11         35         17         PVL350, V600, DV1300, DV250         100           1/0         KSF35         41         9         13         35         17         PVL350, V600, DV1300, DV250         50

s = strip length



### KS/KSF through connectors with partition 10-500 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn.
- For stranded (class 2) and multi-stranded (class 5) Cu conductors.
- For multi-stranded Cu conductors Elpress recommends the DUAL system.
- With partition to prevent oil leakage.
- UL approved (1-500 mm²). DNV approved (16-400 mm²).







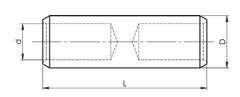




#### Examples of marking: 20 95F (Elpress logotype is included on the marking.)

20 = Die No. 95 = mm<sup>2</sup> F = type KSF for stranded and flexible conductors 111 = screen mm<sup>2</sup>





mm² (Cu)	AWG Cu	Name	Screen conductor	d mm	D	L	s	Tool	Pcs/ pack	Die
10	8	KS10M		5	8	36	18	ES2258, PVL350, V600, DV1300	100	8
16	6	KSF16M	15	6	9	37	18	ES2258, PVL350, V600, DV1300	100	9
25	4	KSF25M	21-29	8	11	38	18	ES2258, PVL350, V600, DV1300	100	11
35	2	KSF35M	41	9	13	41	19	PVL350, V600, DV1300, DV250	100	13
50	1/0	KSF50M	57	11	14,5	48	22	PVL350, V600, DV1300, DV250	50	14,5
70	2/0	KSF70M	72-88	13	17	49	22	PVL350, V600, DV1300, DV250	50	17
95	3/0	KSF95M	111	15	20	56	25	V600, DV1300, DV250	50	20
120	250	KSF120M		17	22	63	28	V600, DV1300, DV250	50	22
150	300	KSF150M		19	25	64	28	V600, DV1300, DV250	25	25
185	350	KSF185M		21	27	74	32	DV1300, DV250	25	27
240	500	KSF240AM		22,5	29	76	32	DV1300, DV250	1	30
300	600	KSF300AM		24,5	31,5	88	37	DV1300, DV250	1	32
400	750	KSF400AM		30	38	105	45	DV1300, DV250	1	38
500	1000	KSF500M		33	42	135	54	DV250, V1470	1	42

s = strip length



### KST through connectors with partition 10-500 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn.
- For stranded (class 2) Cu conductors.
- Cable inspection hole and cable stop.
- UL approved (1-500 mm²). DNV approved (16-400 mm²).







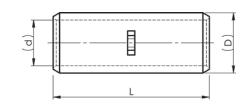






### Examples of marking: 16 70 (Elpress logotype is included on the marking.)





mm² (Cu)	AWG Cu	Name	d mm	D	L	S	Tool	Pcs/ pack	Die
10	8	KST10	4,5	7	30	15	ES2258, PVL350, V600, V1300	100	7
16	6	KST16	5,5	8,5	35	17	EL2258, PVL350, V600, V1300	100	8,5
25	4	KST25	7	10	40	20	EL2258, PVL350, V600, V1300	100	10
35	2	KST35	8,5	12	45	22	PVL350, V600, V1300, V250	100	12
50	1/0	KST50	10	14	50	25	PVL350, V600, V1300, V250	50	14
70	2/0	KST70	12	16	55	27	PVL350, V600, V1300, V250	50	16
95	4/0	KST95	13,5	18	60	30	V600, V1300, V250	50	18
120	250	KST120	15	19	60	30	V600, V1300, V250	50	19
150	300	KST150	17	22	65	32	V600, V1300, V250	50	22
185	350	KST185	19	24	75	37	V600, V1300, V250	50	24
240	500	KST240	21	26	85	42	V600, V1300, V250	50	26
300	600	KST300	24	30	90	45	V1300, V250	50	30
400	750	KST400	26	32	90	45	V1300, V250	50	32
500	1000	KST500	31	40	135	68	V250, V1470	5	40

s = strip length



### KSD through connectors with partition 16-1000 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn.
- For stranded (class 2) Cu conductors.
- Cable inspection hole and cable stop.
- UL approved (1-500 mm²). DNV approved (16-400 mm²).





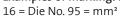




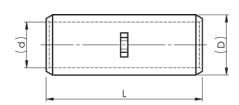




### Examples of marking: 16 95 (Elpress logotype is included on the marking.)



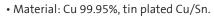


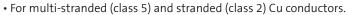


mm² (Cu)	AWG Cu	Name	d mm	D	L	S	Tool	Pcs/ pack	Die
16	6	KSD16	5,4	8	30	14	V600, V1300, PVL350, V250	100	8
25	4	KSD25	6,7	9	30	15	V600, V1300, PVL350, V250	100	9
35	2	KSD35	8	11	35	16	V600, V1300, PVL350, V250	100	11
50	1/0	KSD50	9,5	12	40	19	V600, V1300, PVL350, V250	50	12
70	2/0	KSD70	11,3	14	45	21	V600, V1300, PVL350, V250	50	14
95	4/0	KSD95	13	16	55	26	V600, V1300, PVL350, V250	50	16
120	250	KSD120	15	19	60	26	V600, V1300, PVL350, V250	50	19
150	300	KSD150	17	22	65	30	V1300, V250, V600	50	22
185	350	KSD185	19	25	70	32	V1300, V250, V600	50	25
240	500	KSD240	21	27	70	34	V1300, V250	50	27
300	600	KSD300	24	30	90	42	V1300, V250	50	30
400	750	KSD400	26	32	90	42	V1300, V250	25	32
500	1000	KSD500	31	40	135	64,5	V250, V1470	5	40
630	1250	KSD630	34	45	135	64,5	V250, V1470	5	45
800	1600	KSD800	39	53	175	79,5	V250, V1470	1	53
1000	2000	KSD1000	43	56	175	79,5	V1470	1	56

s = strip length

### KSxP parallel connectors for conductors total 0.5 - 6.75 mm<sup>2</sup>







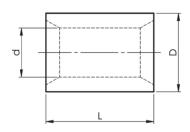












mm² (Cu)	AWG Cu	Name	d	D	L	s	Tool	Pcs/ pack
0,5-1,5	20-16	KS1,5P	1,6	3,2	7	3	DKB0325	100
1,5-3,0	16-12	KS2,5P	2,3	3,9	7	3	DKB0325	100
3 25-6 75	12-9	KS6P	3.6	5.6	7	3	DKB0760	100

s = strip length



### KSxP parallel connectors for conductors total 10 - 630 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn.
- For stranded (class 2) and multi-stranded (class 5) Cu conductors.
- For multi-stranded Cu conductors Elpress recommends the Dual system.

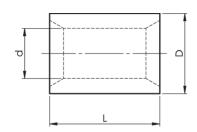












mm² (Cu)	AWG Cu	Name	d mm	D	L	Tool	Pcs/ pack	Die
7-12	8	KS10P	5	8	11	PVL350, V600, DV1300, DV250	250	8
12,5-18,5	6	KS16P	6	9	12	PVL350, V600, DV1300, DV250	250	9
20-31	4	KS25P	8	11	14	PVL350, V600, DV1300, DV250	200	11
31-41	2	KS35P	9	13	16	PVL350, V600, DV1300, DV250	100	13
45-56	1/0	KS50P	11	14,5	18	PVL350, V600, DV1300, DV250	100	14,5
60-85	2/0	KS70P	13	17	18	PVL350, V600, DV1300, DV250	100	17
86-111	4/0	KS95P	15	20	20	V600, DV1300, DV250	100	20
111-130	250	KS120P	17	22	26	V600, DV1300, DV250	100	22
136-166	300	KS150P	19	25	26	V600, DV1300, DV250	50	25
170-210	350	KS185P	21	27	28	DV1300, DV250	25	27
220-255	500	KS240P	24	30	30	DV1300, DV250	25	30
300	600	KS300P	26	32	35	DV1300, DV250	10	32
400	750	KS400P	30	38	50	DV1300, DV250	10	38
500	1000	KS500P	33	42	52	DV250, V1470	10	42
630	1250	KS630P	39	50	62	DV250. V1470	10	50

### CUT through connectors for single strand conductors 6 - 16 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn.
- For single-wire conductors (acc. to IEC 60228 class 1).

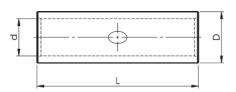












mm² (Cu)	AWG Cu	Name	d mr	m <sup>D</sup>	L	S	Tool	Pcs/ pack
6	10	CUT6	3	5	27	12	ES2258, T2258	100
10	8	CUT10	4	6	27	12	ES2258, T2258	100
16	6	CUT16	5	8	35	15,5	ES2258, T2258	100

s = strip length

The Elpress logo is included on the marking.



### DIN 46230 pin terminals 10 - 95 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn.
- Dimensions according to DIN 46230.

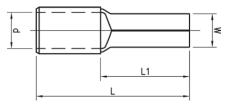












mm² (Cu)	AWG Cu	Name	W mm	d	L	L1	Tool	Pcs/ pack	Die
10	8	B10SR	4,3	4,5	22	12	V600, V1300, V250	100	7
16	6	B16SR	5,5	5,8	26	13	V600, V1300, V250	100	8
25	4	B25SR	6,8	7	34	15	V600, V1300, V250	100	10
35	2	B35SR	8	8,7	41	20	V600, V1300, V250	100	12
50	1/0	B50SR	9,5	9,8	45	20	V600, V1300, V250	50	14,5
70	2/0	B70SR	11	11,5	55	23	V600, V1300, V250	50	17
95	3/0	B95SR	12,3	13,8	55	23	V600, V1300, V250	50	20

### KRX tube terminals for Excel and Fxcel cable 10 - 16 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn
- For cable 10 mm<sup>2</sup> Cu Solid (Excel) and 16 mm<sup>2</sup> stranded (Fxcel), installed with strain relief.

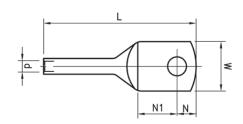












mm² (Cu)	AWG Cu	Name	Screw	W mm	d	N	N1	L	t	s	Tool	Pcs/ pack	Die
10	8	KRX10-8	M8	22	4,5	8,5	17,5	68	3,5	30	V600, V1300	3	7
10	8	KRX10-10	M10	22	4,5	11,5	18,5	72	3,5	30	V600, V1300	3	7
10	8	KRX10-12	M12	22	4,5	12,5	19,5	74	3,5	30	V600, V1300	3	7
16	6	KRX16-8	M8	16	5,5	8,5	17,5	61	2,2	30	V600, V1300	3	8,5
16	6	KRX16-10	M10	16	5,5	11,5	18,5	65	2,2	30	V600, V1300	3	8,5
16	6	KRX16-12	M12	19	5,5	12,5	19,5	67	1,9	30	V600, V1300	3	8,5
t = palm thickness, s = strip length													

### KSX through connectors for Excel and Fxcel cable 10 - 16 mm<sup>2</sup>

- Material: Cu 99.95%, tin plated Cu/Sn
- For cable 10 mm² Cu Solid (Excel) and 16 mm² stranded (Fxcel), installed with strain relief.
- With internal cable stop

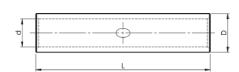












mm² (Cu)	AWG Cu	Name	d mm D		L	s	Tool	Pcs/ pack	Die
10	8	KSX10	4,5	7	65	30	V600, V1300	3	7
16	6	KSX16	5,5	8,5	65	30	V600, V1300	3	8,5

s = strip length

The Elpress logo is included on the marking. Two plus two crimps are carried out with the V600, V611, PVX611 or T2600 system, crimp die TB7-20.



#### C-sleeves 6 - 300 mm<sup>2</sup>

• Material: Cu 99.95%. Tin plated sleeves (except C95-120, C150-185,









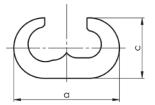
C240-300 and C23 which are not tin plated). • For splicing and branching earth lines and other types of equipotential

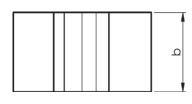
bonding applications. In some cases, 2 or 3 crimps are required.

- Unique patented solution based on previously patented solution for the C25-50 branching sleeve (formerly known as C89).
- Possible to front feed all branches.







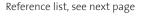


Name	Side feed mm²	Front feed mm²	a	b	c	Tool	Pcs/ pack	Die
C6-10	6/6-16, 10/6-16	6-10/6-10, 16/10	17,6	14	10	V600, V1300, V250	100	5
C16-25	16/16-25, 25/(2*2,5)-25	16-25/16-25, 25/(2*2,5)-10	22	16	12	V600, V1300, V250	100	6
C25-50	25-50/25-50, 16-50/35-50	16/35-50	30	18	16	V600, V1300, V250	50	8-9
C50-70	50/50, 70/25-70, 95/25-50	50/50, 70/25-70, 95/25-50	37	30	22	V1300, V250	50	13
C70-95	70/70, 95/50-95, 120/25-70	70/70, 95/50-70, 120/25-50	39	30	22,2	V1300, V250	50	13
C95-120	95/95, 120/70-120, 150/25-70, 185/25-50	95/95, 120/70-120, 150/25-70, 185/25-50	45	35	25,6	V1300, V250	25	15
C150-185	150/95-150, 185/70-185, 240/25-185, 300/25-120	150/95-150, 185/70-185, 240/25-185, 300/25-120	62,5	40	34,2	V250, V1470	10	18
C240-300	300/240, 300/185, 300/150, 240/240	300/240, 300/185, 300/150, 240/240	72	50	40,7	V250, V1470	10	21
C23	300/300	300/300	70	40	40	V250, V1470	10	21

 $Elpress\ logotype\ is\ included\ on\ the\ marking.\ The\ other\ side\ of\ the\ C\ sleeve\ is\ marked\ with\ the\ size\ of\ the\ Cu\ wire\ that\ fits.$ 

						ı	ELPRESS (	-sleeves						
	6	C6-10												
	10	C6-10	C6-10											
	16	C6-10	C6-10	C16-25										
	25	C16-25	C16-25	C16-25	C16-25 C25-50									
	35			C25-50	C25-50	C25-50								
TOR	50	C25-50	C25-50	C25-50	C25-50	C25-50	C25-50* C50-70							
MAIN CONDUCTOR	70				C50-70	C50-70	C50-70	C50-70 C70-95						
N CO	95				C50-70	C50-70	C50-70 C70-95	C70-95	C70-95 <b>*</b> C95-120					
MA	120				C70-95	C70-95	C70-95	C70-95 <b>*</b> C95-120	C95-120	C95-120				
	150				C95-120	C95-120	C95-120	C95-120	C150-185	C150-185	C150-185			
	185				C95-120	C95-120	C95-120	C150-185	C150-185	C150-185	C150-185	C150-185		
	240				C150-185	C150-185	C150-185	C150-185	C150-185	C150-185	C150-185	C150-185**	C240-300	
	300				C150-185	C150-185	C150-185	C150-185	C150-185	C150-185	C240-300	C240-300	C240-300	C23
8		6	10	16	25	35	50	70	95	120	150	185	240	300
n	nm²							BRANCH						

<sup>\*</sup> Side feed only





<sup>\*\*</sup> For Front feed with uncompressed conductors, use C240-300

### Reference list

									Tool		
		1	mensi						Crimp He	ead	
			(mm)			Name	V611	V13	800	V1300C2	
C-sleeves	Replace sleeve				Weight (kg)	Area mm² Total area	T2600	V131	L1-A	V1311C2-A	V250
	Siceve				(1.8/	mm²	PVX611	D) (V1	200	D\/\/1200C2	V1470
		a	b	С			V600	PVX1	.500	PVX1300C2	
									Die numl	oer	
C6-10	C4 C5	17,6	14	10	0,011	<b>C6-10</b> 6-16 12-26	1 crimp TBC5-C6	1 cri BC		1 crimp BC5³	1 crimp BC5³
C16-25	C6 C6-3	22	16	12	0,018	<b>C16-25</b> 5-25 30-50	1 crimp TBC5-C6	1 cri BC		1 crimp BC6³	1 crimp BC6¹
C25-50	C89***	30	18	16	0,040	<b>C25-50</b> 6-50 50-100	2 crimps TBC89-B13	1 crimp 13BC8-9	1 crimp BC8-9²	1 crimp BC8-9³	1 crimp BC8-9¹
C50-70	C11 C11-9 C11-8 C13-9 C13-8	37	30	22	0,097	<b>C50-70</b> 25-95 95-145		3 crir 13B0		3 crimps 13CBC13	1 crimps BC13¹
C70-95	C13** C13-13 C13-11 C15-11** C15-9 C15-8	39	30	22,1	0,093	<b>C70-95</b> 25-120 140-190		3 crimps 13BC13		3 crimps 13CBC13	1 crimps BC13¹
C95-120	C15 C15-13 C16-9 C18-9 C18-8	45	35	25,6	0,133	<b>C95-120</b> 25-185 175-240		3 crir 13B0		3 crimps 13CBC15	1 crimps B25C15
C150-185	C16 C21-18* C16-13 C18 C18-16 C18-15 C18-13 C18-11 C18/23-8 C21-15 C21-16 C21-13 C21-11 C21-9 C21-8	62,5	40	34,5	0,329	<b>C150-185</b> 25-300 245-425					2 crimps B25C18 1 crimp B40C18
C240-300	C21 C23-21 C23-18 C23-16	72	50	40,7	0,555	<b>C240-300</b> 150-300 450-540					2 crimps B25C21 1 crimp B40C21
C23	C23	70	40	40	0,403	<b>C23</b> 300 600					2 crimps B25C21 1 crimp B40C21
* Non-compacted main conductor and branch, use C240-300 ** Side feed, front feed in C95/120 *** 50 mm²/50 mm² side feed, front feed in C50-70  1) Die holder required: V2506, V2508 2) Die holder required: V1316, V1318 3) Die holder required: V1330											

Front feed



Notes



Notes



### Al and AlCu terminals 16 - 1200 mm<sup>2</sup>

General information about Al and AlCu terminals	. 2
Aluminium terminals 16 - 1200 mm²	. 3
Aluminium through connectors with partition 16 - 1200 mm²	. 4
Through connectors with aluminium partitions with different areas 16 - 400 mm²	. 5
Aluminium through connectors with cable stop 300 - 400 mm²	. 5
Aluminium-copper terminals 16 - 1200 mm²	. 6
Aluminium-copper terminals 300 - 400 mm²	. 7
Aluminium-copper pin sockets 16 - 300 mm²	. 7
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Through connectors of aluminium-copper 300 - 400 mm²	. 8
Aluminium-copper through connectors 16 - 400 mm <sup>2</sup>	. 9

### General information about Al and AlCu terminals



#### **System Elpress**

System Elpress consists of terminals and tools that are designed and tested together to give a certified crimping result. This ensures that users will feel confident when using our systems, and that a secure connection is achieved through the proper handling of our products.

#### Al terminals

Elpress terminals for Al cable are made of solid and pure aluminium 99.7%. We manufacture Al terminals type AK and AS, but also customised terminals or terminals larger than 1200 mm<sup>2</sup>.



Terminal type AK is used with Al conductors for connection to busbars and apparatus sockets.



Through connectors type AS are used when connecting aluminium-conductors.



Indent crimping of Elpress through connector using crimp head V250.

#### **AlCu terminals**

Elpress bimetallic terminals (AlCu) are manufactured from solid material which is friction welded together, joining Aluminium with Copper. This is done when aluminium is rotated towards copper under pressure and it is the method that provides the best connection between Al and Cu.



Terminals of type AKK are used at the end of an Al conductor for connection to a Cu bus bar.



Through connectors of type AKS are used to connect Al conductors to Cu conductors.



Pin sockets type AKP are manufactured for connection of Al conductors to apparatus

intended for copper pin connections.

#### **Number of crimps**

The Elpress system is suitable for both stranded conductors, acc. to IEC 60228 class 2, and solid conductors, acc. to IEC60228 class 1. However, it should be noted that there is an area difference between stranded and solid Al conductors (see tables). When using sectoral Al-cable, a pre-rounding is normally required, which is done with a round crimping tool. When contact crimping Al terminals, two crimps should always be made. Note the crimp sequence.



#### **Customised products**

Customised products are an important part of our work. Solving problems for the customer and at the same time manufacturing the products with profitability is a special challenge. This way, we also increase our knowledge of the customers' needs. The above terminals include different models of T-connectors where you can connect three conductors of the same size using only one terminal.



Upon request for variants in hole arrangement, the size of the connection flag and the like, we make variants of cable clips.

#### Marking Al and AlCu terminals

Elpress system for marking Al and AlCu terminals states the conductor area (for small and solid conductors) and reference to rounded and contact crimp tools within the Elpress range. A tool reference for hexagonal crimping copper is given on the bimetallic through connectors.

#### **TERMINALS:**

Explanatory marking Al and AlCu terminals Barrel marking i.e. ALU300-R21-P36 (Elpress logotype) T2

ALU300 = Al conductor in mm<sup>2</sup> R21 = size no. for punch and matrix for pre-rounding

P36 = size no. for punch and matrix for crimping

Palm marking: (Elpress logo) 16 = Screw dimension

#### THROUGH CONNECTORS:

Explanatory marking Al and AlCu terminals For example: Cu240 - 30 (Elpress logotype) Cu240 = Cu conductor in mm<sup>2</sup> 30 = Size no. for hexagonal die

For example: ALU300-R21-P36 (Elpress logotype) T2

ALU300 = Al conductor in mm<sup>2</sup> R21 = size no. for punch and matrix for pre-rounding

P36 = size no. for punch and matrix for crimping

# Clearance for holes in terminal palm

Hole diameter (Ø mm)
3,2
4,3
5,3
6,4
8,4
10.5
13
17
21
26



### Aluminium terminals 16 - 1200 mm<sup>2</sup>

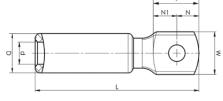
- Used for connecting Al conductors to Al busbar.
- Two crimps are needed For crimp sequence, see image.













Crimp sequence

Stranded A	Al Solid Al mm²	AWG/ MCM	AWG Al (Solid Al)	Name	Screw	W mm	d	D	N	N1	Р	L	t	s	Tool	Pcs/ pack
16	25	6	4	AK16-6	M6	16	5,9	13	8,5	9	17,5	61	5	29	V600, V1300, V250	48
16	25	6	4	AK16-8	M8	16	5,9	13	8,5	9	17,5	61	5	29	V600, V1300, V250	48
25	35	4	2	AK25-6	M6	16	6,8	13	8,5	9	17,5	61	5	29	V600, V1300, V250	48
25	35	4	2	AK25-8	M8	16	6,8	13	8,5	9	17,5	61	5	29	V600, V1300, V250	48
35	50	2	1/0	AK35-6	M6	22	8,5	20	11	14	25	85	7,5	45	V1300, V250	24
35	50	2	1/0	AK35-8	M8	22	8,5	20	11	14	25	85	7,5	45	V1300, V250	24
50	70	1/0	2/0	AK50-8	M8	22	9,6	20	11	14	25	85	7,5	45	V1300, V250	24
50	70	1/0	2/0	AK50-10	M10	22	9,6	20	11	14	25	85	7,5	45	V1300, V250	24
50	70	1/0	2/0	AK50-12	M12	27	9,6	20	14	15	29	90	6	45	V1300, V250	24
70	95	2/0	4/0	AK70-8	M8	22	11,3	20	11	14	25	85	7,5	45	V1300, V250	24
70	95	2/0	4/0	AK70-10	M10	22	11,3	20	11	14	25	85	7,5	45	V1300, V250	24
70	95	2/0	4/0	AK70-12	M12	27	11,3	20	14	15	29	90	6	45	V1300, V250	24
95	120	4/0	250	AK95-8	M8	27	12,5	25	14	15	29	104	10,5	60	V1300, V250	24
95	120	4/0	250	AK95-10	M10	27	12,5	25	14	15	29	104	10,5	60	V1300, V250	24
95	120	4/0	250	AK95-12	M12	27	12,5	25	14	15	29	104	10,5	60	V1300, V250	24
120	150	250	300	AK120-10	M10	27	14	25	14	15	29	104	10,5	60	V1300, V250	24
120	150	250	300	AK120-12	M12	27	14	25	14	15	29	104	10,5	60	V1300, V250	24
150	185	300	350	AK150-10	M10	27	15,8	25	14	15	29	104	10,5	60	V1300, V250	24
150	185	300	350	AK150-12	M12	27	15,8	25	14	15	29	104	10,5	60	V1300, V250	24
150	185	300	350	AK150-16	M16	35	15,8	25	21	23	44	119	8	60	V1300, V250	12
185	240	350	500	AK185-10	M10	35	17,6	32	16	18,5	34,5	113	13	61	V1300, V250	12
185	240	350	500	AK185-12	M12	35	17,6	32	16	18,5	34,5	113	13	61	V1300, V250	12
185	240	350	500	AK185-16	M16	35	17,6	32	16	18,5	34,5	113	13	61	V1300, V250	12
240		500		AK240-12	M12	35	19,8	32	16	18,5	34,5	113	13	61	V1300, V250	12
240		500		AK240-16	M16	35	19,8	32	16		34,5		13	61	V1300, V250	12
	300		600	AK300-12SOLID	M12	41	20	36	18	25	43	154	14	83	V250	6
	300		600	AK300-16SOLID		41	20	36	18	25	43	154	14	83	V250	6
300		600		AK300-12	M12	41	22	36	18	25	43	154	14	83	V250	6
300		600		AK300-16	M16		22	36	18	25	43	154	14	83	V250	6
300		600		AK300-20	M20	41	22	36	20	23	43	154	15	83	V250	6
400		750		AK400-12	M12	41	25	40	18	25	43		15	83	V250	6
400		750		AK400-16	M16	41	25	40	18	25	43	155	15	83	V250	6
400		750		AK400-20	M20		25	40	20	23	43	155		83	V250	6
500		1000		AK500A-16	M16	55	28	52	26	29	55	225	20		V250	1
500		1000		AK500A-20	M20	55	28	52		29	55		20		V250	3
500		1000		AK500A-1		55	28	52			80	250	20		V250	3
500		1000		AK500A-2		70	28	52			80	250	16		V250	3
500		1000		AK500B-16	M16	44	28	44	22	22	44	174	16	83	V250	3
500		1000		AK500B-20	M20	44	28	44	22		44	174	16	83	V250	3
500		1000		AK500B-1	0	44	28	44			80	210	16	83	V250	3
500		1000		AK500B-2		70	28	44			80	210	16	83	V250	3
630		1250		AK630A-1		55	32	52			80	250	20		V250	3
630		1250		AK630A-2		70	32	52			80	250	16		V250	3
800		1600		AK800-1		60	36	60			80	267	20		V1470	1
800		1600		AK800-1 AK800-2		75	36	60			80	275	17		V1470 V1470	1
1000		2000		AK1000-1		60	40	60			80	267	20		V1470 V1470	1
1000		2000		AK1000-1 AK1000-2		75	40	60			80	275	17		V1470 V1470	1
1200		2500		AK1000-2 AK1200			44	70			80	291			V1470 V1470	1
1200		2500		ANIZUU		13		70			00	<b>2</b> 31	Τ/	142	V 147 U	_

 $t = palm \ thickness, \ s = strip \ length$ 



### Aluminium through connectors with partition 16 - 1200 mm<sup>2</sup>

- Used primarily for connecting two Al conductors with the same area.
- Two plus two crimps are needed For crimp sequence, see image.
- Partition in the middle to prevent fluid flow.

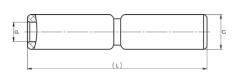


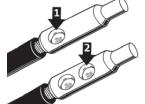












Crimp sequence

Stranded Al Solid Al mm² mm²		AWG Al (Stranded Al)	AWG Al (Solid Al)	Name	d mm	D	L	s	Tool	Pcs/ pack
16-25		6-4		AS1625	6,2	11,5	35	18	V600	50
16	25	6	4	AS16	5,9	13	67	29	V600, V1300, V250	48
25	35	4	2	AS25	6,8	13	67	29	V600, V1300, V250	48
35	50	2	1/0	AS35	8,5	20	100	45	V1300, V250	24
50	70	1/0	2/0	AS50	9,6	20	100	42,5	V1300, V250	24
70	95	2/0	3/0	AS70	11,3	20	100	42,5	V1300, V250	24
95	120	3/0	250	AS95	12,5	25	130	57	V1300, V250	12
120	150	250	300	AS120	14	25	130	57	V1300, V250	12
150	185	300	350	AS150	15,8	25	130	58	V1300, V250	12
185	240	350	500	AS185	17,6	32	131	58	V1300, V250	9
240		500		AS240	19,8	32	131	58	V1300, V250	9
	300		600	AS300SOLID	20	36	177	83	V250	6
300		600		AS300	22	36	177	83	V250	3
400		750		AS400	25	40	179	83	V250	3
	400		750	AS400SOLID	23	40	179	83	V250	3
500		1000		AS500A	28	52	250	110	V250	3
500		1000		AS500B	28	44	184	83	V250	3
630		1250		AS630A-1	32	52	250	110	V250	1
630		1250		AS630A-2	34	52	250	110	V250	1
800		1600		AS800-1	36	60	288	129	V1470	1
1000		2000		AS1000-1	40	60	288	129	V1470	1
1200		2500		AS1200	44	70	320	142	V1470	1

For other combinations, please contact Elpress.  $s = strip\ length$ 



# Through connectors with aluminium partitions with different areas 16 - 400 mm<sup>2</sup>

- Used for connecting Al conductors of different areas.
- Two plus two crimps are needed crimp sequence see picture.
- With partition.

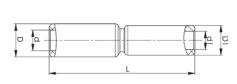














Crimp sequence

Stranded Al		AWG/	AWG AI	Name	d	d1	D	D1	L	s	s1	Tool	Pcs/
mm²	mm²	MCM	(Solid Al)	Nume	mm	u =					<u> </u>		pack
25-16	35-25	4-6	2-4	AS25-16	6,8	5,9	13	13	67	29	29	V1300, V250	48
35-25	50-35	2-4	1/0-4	AS35-25	8,5	6,8	20	13	85	45	29	V1300, V250	24
50-25	70-35	1/0-4	2/0-4	AS50-25	9,6	6,8	20	13	85	45	29	V1300, V250	24
50-35	70-50	1/0-2	2/0	AS50-35	9,6	8,5	20	20	100	45	45	V1300, V250	24
70-50	95-70	2/0-1/0	4/0-2/0	AS70-50	11,3	9,6	20	20	100	45	45	V1300, V250	24
95-25	120-35	4/0-4	2-250	AS95-25	12,5	6,8	25	13	101,1	60	29	V1300, V250	24
95-35	120-50	4/0-2	1/0-250	AS95-35	12,5	8,5	25	20	116	60	45	V1300, V250	24
95-50	120-70	3/0-1/0	250-2/0	AS95-50	12,5	9,6	25	20	116,1	60	45	V1300, V250	24
95-70	120-95	4/0-2/0	250-4/0	AS95-70	12,5	11,3	25	20	116,1	60	45	V1300, V250	24
120-95	150-120	250-4/0	300-250	AS120-95	14	12,5	25	25	130	60	60	V1300, V250	12
150-50	185-70	250-1/0	350-2/0	AS150-50	15,8	9,6	25	20	116,1	60	45	V1300, V250	12
150-70	185-95	300-2/0	350-3/0	AS150-70	15,8	11,3	25	20	116,1	60	45	V1300, V250	24
150-95	185-120	300-4/0	350-250	AS150-95	15,8	12,5	25	25	130	60	60	V1300, V250	12
150-120	185-150	300-250	350-300	AS150-120	15,8	14	25	25	130	60	60	V1300, V250	12
185-95	240-120	350-4/0	500-250	AS185-95	17,6	12,5	32	25	131,9	61	60	V1300, V250	12
185-150	240-185	350-300	500-350	AS185-150	17,6	15,8	32	25	131,9	61	60	V1300, V250	12
240-95	120	500-4/0	600-250	AS240-95	19,8	12,5	32	25	132	61	60	V1300, V250	12
240-120	150	500-250	300	AS240-120	19,8	14	32	25	132	61	60	V1300, V250	12
240-150	185	500-300	350	AS240-150	19,8	15,8	32	25	132	61	60	V1300, V250	12
240-185	240	500-350	500	AS240-185	19,8	17,6	32	32	131	61	61	V1300, V250	12
300-240		600-500		AS300-240	22	19,8	36	32	155,1	83	61	V250	6
400-300		750-600		AS400-300	25	22	40	36	179	83	83	V250	3

#### s, s1 = insulation stripping length

### Aluminium through connectors with cable stop 300 - 400 mm<sup>2</sup>

- Used primarily for connecting two Al conductors with the same area
- For the indent crimping of Al-terminals, two crimps are always required, see image.

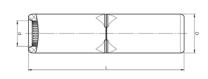














Crimp sequence

Stranded Al mm²	AWG/ MCM	Name	d mm	D	L	s	Tool	Pcs/pack
300	600	AS300B	22,5	37	150	65	V1300, V250	1
400	750	AS400B	25	37	150	64	V1300, V250	1





### Aluminium-copper terminals 16 - 1200 mm<sup>2</sup>

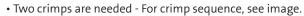
• Used for connection of Al conductors for apparatus outlets and busbars of Cu.



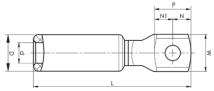


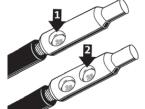












Stranded Al mm²	Solid Al AWG/ AWG Al mm² MCM (Solid Al)		Name	Screw	W mm	d	D	N	N1	P	L	t	s	Tool	Pcs/ pack	
16	25 (16)	6	4	AKK16-8	M8	16	5,9	13	8,5	10	18,5	66	3	29	V600, V1300, V250	48
25	35	4	2	AKK25-8	M8	16	6,8	13	8,5	10	18,5	66	3	29	V600, V1300, V250	48
25	35	4	2	AKK25-12	M12	22	6,8	13	11,5	15,5	27	75	4	29	V600, V1300, V250	24
35	50	2	1/0	AKK35-8	M8	25	8,5	20	12,5	12,5	25	89	5,8	45	V1300, V250	24
35	50	2	1/0	AKK35-12	M12	25	8,5	20	12,5	12,5	25	89	5,8	45	V1300, V250	24
50	70	1/0	2/0	AKK50-8	M8	25	9,6	20	12,5	12,5	25	89	5,8	45	V1300, V250	24
50	70	1/0	2/0	AKK50-10	M10	25	9,6	20	12,5	12,5	25	89	5,8	45	V1300, V250	24
50	70	1/0	2/0	AKK50-12	M12	25	9,6	20	12,5	12,5	25	89	5,8	45	V1300, V250	24
70	95	2/0	4/0	AKK70-8	M8	25	11,3	20	12,5	12,5	25	89	5,8	45	V1300, V250	24
70	95	2/0	4/0	AKK70-10	M10	25	11,3	20	12,5	12,5	25	89	5,8	45	V1300, V250	24
70	95	2/0	4/0	AKK70-12	M12	25	11,3	20	12,5	12,5	25	89	5,8	45	V1300, V250	24
95	120	4/0	250	AKK95-8	M8	25,5	12,5	25	12,5	12,5	25	108	5,7	60	V1300, V250	12
95	120	4/0	250	AKK95-10	M10	25,5	12,5	25	12,5	12,5	25	108	5,7	60	V1300, V250	12
95	120	4/0	250	AKK95-12	M12	25,5	12,5	25	12,5	12,5	25	108	5,7	60	V1300, V250	12
95	120	4/0	250	AKK95-16	M16	30	12,5	25	15	15	30	115	6,5	60	V1300, V250	12
120	150	250	300	AKK120-10	M10	25,5	14	25	12,5	12,5	25	108	5,7	60	V1300, V250	12
120	150	250	300	AKK120-12	M12	25,5	14	25	12,5	12,5	25	108	5,7	60	V1300, V250	12
120	150	250	300	AKK120-16	M16	30	14	25	15	15	30	115	6,5	60	V1300, V250	12
150	185	300	350	AKK150-10	M10	25,5	15,8	25	12,5	12,5	25	108	5,7	60	V1300, V250	12
150	185	300	350	AKK150-12	M12	25,5	15,8	25	12,5	12,5	25	108	5,7	60	V1300, V250	12
150	185	300	350	AKK150-16	M16	30	15,8	25	15	15	30	115	6,5	60	V1300, V250	12
185	240	350	500	AKK185-10	M10	30	17,6	32	15	15	30	116	6,5	60	V1300, V250	12
185	240	350	500	AKK185-12	M12	30	17,6	32	15	15	30	116	6,5	60	V1300, V250	12
185	240	350	500	AKK185-16	M16	30	17,6	32	15	15	30	116	6,5	60	V1300, V250	12
240		500		AKK240-10	M10	30	19,8	32	15	15	30	116	6,5	61	V1300, V250	12
240		500		AKK240-12	M12	30	19,8	32	15	15	30	116	6,5	61	V1300, V250	12
240		500		AKK240-16	M16	30	19,8	32	15	15	30	116	6,5	61	V1300, V250	12
300		600		AKK300-12	M12	37	22	36	18,5	18,5	37	154		82	V250	6
300		600		AKK300-16	M16	37	22	36	18,5	18,5	37	154	6,5	82	V250	6
300		600		AKK300-20	M20	37	22	36	18,5	18,5	37	154	6,5	82	V250	6
	300		600	AKK300-12SOLID	M12	37	20	36	18,5	18,5	37	154	6,5	82	V250	6
	300		600	AKK300-16SOLID	M16	37	20	36	18,5	18,5	37	154	6,5	82	V250	6
	300		600	AKK300-20SOLID	M20	37	20	36	18,5	18,5	37	154		82	V250	6
400		750		AKK400-12	M12	37	25	40	18,5	18,5	37	155	6,5	83	V250	6
400		750		AKK400-16	M16	37	25	40	18,5	18,5	37	155	6,5	83	V250	6
400		750		AKK400-20	M20	37	25	40	18,5	18,5	37	155	6,5	83	V250	6
500		1000		AKK500A-16	M16	48	28	52	26	29	55	222		110	V250	3
500		1000		AKK500A-20	M20	48	28	52	26	29	55	222		110	V250	3
500		1000		AKK500A-1		48	28	52			70	237	9,5	110	V250	3
500		1000		AKK500A-2		70	28	52			70	240	12	110	V250	3
500		1000		AKK500B-16	M16	42	28	44	21	21	42	174	10	83	V250	3
500		1000		AKK500B-20	M20	42	28	44	21	21	42	174	10	83	V250	3
500		1000		AKK500B-1		42	28	44			70	202	10	83	V250	3
500		1000		AKK500B-2		70	28	44			70		12	83	V250	3
630		1250		AKK630A-1		48	32	52			70				V250	3
630		1250		AKK630A-2		70	32	52			70	240			V250	3
800		1600		AKK800-1		62	36	60			70	263			V1470	1
800		1600		AKK800-2		75	36	60			75	275			V1470	1
1000		2000		AKK1000-1		62	40	60			70	263			V1470	1
1000		2000		AKK1000-1-16	M16	62	40	60	30	40	70	263			V1470	1
1000		2000		AKK1000-2		75	40	60			75	275			V1470	1
1200		2500		AKK1200		75	44	70			75	310	17	142	V1470	1

s = strip length, t = palm thickness



### Aluminium-copper terminals 300 - 400 mm<sup>2</sup>

- Used for connection of Al conductors for apparatus outlets and busbars of Cu, etc.
- For stranded wire Al conductor.
- Two crimps are needed, see image.

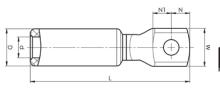


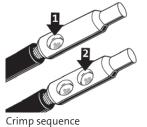












s	Tool	Pcs/ pack	
68	V1300, V250	6	

Stranded Al AW mm² MC	Name	Screw W	d m	D	N	N1	L	t	s	Tool	Pcs/ pack
300 600	AKK300B-12	M12 37	7 22,3	37	18,5	18,5	139	6,7	68	V1300, V250	6
300 600	AKK300B-16	M16 37	7 22,3	37	18,5	18,5	139	6,7	68	V1300, V250	6
400 750	AKK400B-12	M12 37	7 25	37	18,5	18,5	139	6,7	68	V1300, V250	6
400 750	AKK400B-16	M16 37	7 25	37	18,5	18,5	139	6,7	68	V1300, V250	6

t = palm thickness, s = strip length

### Aluminium-copper pin sockets 16 - 300 mm<sup>2</sup>

• Used for connection of Al conductors to apparatus with copper connectors.

• Two crimps are needed - For crimp sequence, see image.



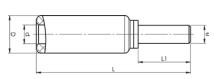














Stranded Al mm²	Solid Al mm²	AWG/ MCM	AWG Al (Solid Al)	Name	d mm	D	e	L	L1	s	Tool	Pcs/ pack
16	25 (16)	6	4	AKP16	5,9	13	6	56	25	29	V600, V1300, V250	48
25	35	4	2	AKP25	6,8	13	6	56	25	29	V600, V1300, V250	48
35	50	2	1/0	AKP35	8,5	20	9	78	25	45	V1300, V250	24
50	70	1/0	2/0	AKP50	9,6	20	9	88	35	45	V1300, V250	24
70	95	2/0	4/0	AKP70	11,3	20	9	88	35	45	V1300, V250	24
95	120	4/0	250	AKP95	12,5	25	12	103	35	60	V1300, V250	24
120	150	250	300	AKP120	14	25	12	108	40	60	V1300, V250	24
150	185	300	350	AKP150	15,8	25	12	108	40	60	V1300, V250	24
185	240	350	500	AKP185	17,6	32	14	113,5	45	61	V1300, V250	12
240		500		AKP240	19,8	32	14	113,5	45	61	V1300, V250	12
300		600		AKP300	22	36	16	142	50	83	V250	9

s = strip length



### Through connectors of aluminium 16 - 95 mm<sup>2</sup> to solid copper 10 mm<sup>2</sup>

• Used for connecting stranded Al conductors to solid Cu conductors 10 mm²/8 AWG (e.g. Excel, Excelett).

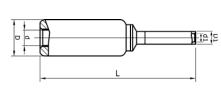


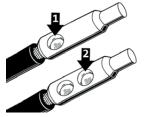












Crimp sequence

Stranded Solid Al Al mm² mm²		mm²	AWG	AWG Al (Solid A		d	d1	D	D1	L	s	<b>s1</b>	Tool	Pcs/ pack
16	25	10	6	4	AKS16-10S	5,9	4,5	13	7	64,5	29	33	V600, V1300, V250	48
25	35	10	4	2	AKS25-10S	6,8	4,5	13	7	64,5	29	33	V600, V1300, V250	48
35	50	10	2	1/0	AKS35-10S	8,5	4,5	20	7	86	45	33	V1300, V250	48
50	70	10	1/0	2/0	AKS50-10S	9,6	4,5	20	7	86	45	33	V1300, V250	24
70	95	10	2/0	4/0	AKS70-10S	11,3	4,5	20	7	86	45	33	V1300, V250	24
95	120	10	4/0	250	AKS95-10S	12,5	4,5	25	7	101	60	33	V1300, V250	24

s = strip length (Al), s1 = strip length (Cu)

### Through connectors of aluminium-copper 300 - 400 mm<sup>2</sup>

- Used for connecting Al conductors and Cu conductors
- Stranded/solid Al conductors, stranded/flexible Cu conductors. For multi-stranded Cu conductors, contact crimping using the DUAL system is recommended.
- Two crimps are needed for Al (see image).
- When crimping the Al part, use matrix P2537M and punch P2537D, no matrix holder is needed.
- When crimping the Cu part, place the dies between the marking on the sleeve and the edge of the Cu part.

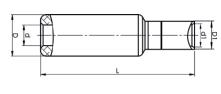


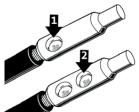












Crimp sequence

Al mm²		AWG AI (Stranded)	AWG Cu	Name	d	d1	D	D1	L	S	<b>s</b> 1	Tool	Pcs/ pack
300	185	600	350	AKS300B-185	22,3	21	37	27	126,5	68	40	DV1300, DV250	6
300	240	600	500	AKS300B-240A	22,3	22,5	37	29	126,5	68	40	DV1300, DV250	6
400	240	750	500	AKS400B-240A	25	22,5	37	29	126,5	68	40	DV1300, DV250	6
400	300	750	600	AKS400B-300A	25	24,5	37	31,5	127	68	40	DV1300, DV250	6

If class 5 Cu conductors are used, use the corresponding DUAL tool for (D)V1300 or (D)V250., s = strip length (Al), s1 = strip length (Cu)



# Aluminium-copper through connectors 16 - 400 mm<sup>2</sup>

- Connector from Al conductor to Cu conductor.
- $\bullet \ Stranded/solid \ Al \ conductors, stranded/multi-stranded \ Cu \ conductors.$
- REACH

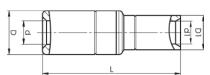


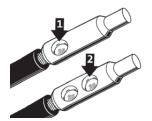




- For multi-stranded Cu conductors, contact crimping using the DUAL system is recommended.
- Two crimps are required for AI (see image) normally one for Cu.
- When hexagonally crimping the Cu part, the dies are placed between the marking groove and the outer edge.







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Stranded Al	Solid Al mm²	Cu mm²	AWG/ MCM	AWG Al (Solid Al)		Name	d	d1	D	D1	L	s	s1	Tool	Pcs/ pack
mm² 16-25	Ш		6-4	(30IIu AI)	8-6	AKS1625-1016	6,2	6	8,3	7,5	36,5	19	17	V600	48
16-23	25 (16)	10-10	6	4	8	AKS1625-1016 AKS16-10	5,9	5	13	7,5 8	45,5		14	V600, DV1300, DV250	48
25	35	10	4	2	8	AKS25-10	6,8	5	13	8	45,5		14	V600, DV1300, DV250	48
25	35	16	4	2	6	AKS25-16		6	13	9		29	15		48
35	50	10	2	1/0	8	AKS35-10 AKS35-10	6,8 8,5	5	20	8	66	45	14	V600, DV1300, DV250 DV1300, DV250	24
35	50	16	2	1/0	6	AKS35-10 AKS35-16	8,5	6	20	13	66	45	15	DV1300, DV250 DV1300, DV250	24
35	50	25	2	1/0	4	AKS35-10 AKS35-25	8,5	8	20	13	69	45	17	DV1300, DV250 DV1300, DV250	24
50	70	10	1/0	2/0	8	AKS50-10	9,6	5	20	13	66	45	14	DV1300, DV250 DV1300, DV250	24
50	70	16	1/0	2/0	6	AKS50-16	9,6	6	20	13	66	45	15	DV1300, DV250 DV1300, DV250	24
50	70	25	1/0	2/0	4	AKS50-10 AKS50-25	9.6	8	20	13	69	45	17	DV1300, DV250 DV1300, DV250	24
50	70	35	1/0	2/0	2	AKS50-25 AKS50-35	9,6	9	20	13	71	45	19	DV1300, DV250 DV1300, DV250	24
50	70	50	1/0	2/0	1/0	AKS50-50	9,6	11	20		75,5		23	DV1300, DV250 DV1300, DV250	24
70	95	35	2/0	4/0	2	AKS70-35	11,3	9	20	13	73,3	45	19	DV1300, DV250	24
70 70	95	50	2/0	4/0	1/0	AKS70-50	,	11	20	14,5	75.5	45	23	DV1300, DV250 DV1300, DV250	24
70 70	95	70	2/0	4/0	2/0	AKS70-70	11,3		20	17	78	45	25	DV1300, DV250	24
95	120	10	4/0	250	8	AKS95-10	12,5	5	25	17	81	60	14	DV1300, DV250	24
95	120	16	4/0	250	6	AKS95-16	12,5	6	25	17	81	60	15	DV1300, DV250	24
95	120	25	4/0	250	4	AKS95-25	12,5	8	25	17	84	60	17	DV1300, DV250	24
95	120	35	4/0	250	2	AKS95-35	12,5	9	25	17	86	60	19	DV1300, DV250	24
95	120	50	4/0	250	1/0	AKS95-50	,	11	25	17	90.5		23	DV1300, DV250	24
95	120	70	4/0	250	2/0	AKS95-70	12,5	13	25	17	93	60	25	DV1300, DV250	24
95	120	95	4/0	250	4/0	AKS95-95	12,5	15	25	20	93,5		25	DV1300, DV250	24
120	150	50	250	300	1/0	AKS120-50	14	11	25	17	90.5		23	DV1300, DV250	24
120	150	70	250	300	2/0	AKS120-70	14	13	25	17	93	60	25	DV1300, DV250	24
120	150	95	250	300	4/0	AKS120-95	14	15	25	20	93,5		25	DV1300, DV250	24
120	150	120	250	300	250	AKS120-120	14	17	25	22	103,5		30	DV1300, DV250	24
150	185	25	300	350	4	AKS150-25	15,8	8	25	17	84	60	17	DV1300, DV250	24
150	185	35	300	350	2	AKS150-25 AKS150-35	15,8	9	25	17	86	60	19	DV1300, DV250	24
150	185	50	300	350	1/0	AKS150-50	15,8		25	17	90.5		23	DV1300, DV250	24
150	185	70	300	350	2/0	AKS150-70		13	25	17	93	60	25	DV1300, DV250	24
150	185	95	300	350	4/0	AKS150-95	,	15	25	20	93,5		25	DV1300, DV250	24
150	185	120	300	350	250	AKS150-120		17	25	22	103.5		30	DV1300, DV250	24
150	185	150	300	350	300	AKS150-150		19	25	25	99	60	30	DV1300, DV250	24
185	240	70	350	500	2/0	AKS185-70	17,6	13	32	17	93.5		25	DV1300, DV250	12
185	240	95	350	500	4/0	AKS185-95	,	15	32	20	94	61	25	DV1300, DV250	12
185	240	120	350	500	250	AKS185-120	,	17	32	22	104		30	DV1300, DV250	12
185	240	150	350	500	300	AKS185-150		19	32	25	99,5		30	DV1300, DV250	12
185	240	185	350	500	350	AKS185-185	17,6		32	27		61	30	DV1300, DV250	12
240	210	35	500	500	2	AKS240-35	19,8	9	32	17	86,5		19	DV1300, DV250	12
240		50	500		1/0	AKS240-50	,	11	32	17	91	61	23	DV1300, DV250	12
240		70	500		2/0	AKS240-70		13	32	17	93,5		25	DV1300, DV250	12
240		95	500		4/0	AKS240-95	19,8	15	32	20	93,5		25	DV1300, DV250	12
240		120	500		250	AKS240-120	19,8	17	32	22	104		30	DV1300, DV250	12
240		150	500		300	AKS240-150	19,8	19	32	25	99,5		30	DV1300, DV250	12
240		185	500		350	AKS240-185	19,8	21	32	27	100		30	DV1300, DV250	12
240		240	500		500	AKS240-240A	19,8	22,5		29	100		30	DV1300, DV250	12
300		150	600		300	AKS300-150	22	19	36	25	122,5		30	DV250	9
300		185	600		350	AKS300-185	22	21	36	27	123		30	DV250	9
300		240	600		500	AKS300-240A	22	22,5		29	123.5		30	DV250 DV250	9
300	300	300	500	600	600	AKS300SOLID-300		26	36	32	124		30	DV250 DV250	6
400	550	150	750	550	300	AKS400-150	25	19	40	25	124		30	DV250	6
400		185	750		350	AKS400-130 AKS400-185	25	21	40	27	124		30	DV250 DV250	6
400		240	750		500	AKS400-240A	25	22,5		29	124	83	30	DV250 DV250	6
400		300	750		600	AKS400-300A	25	24,5			125		30	DV250 DV250	6
100		500	, 50		500			£ F, J		٠-,٥	123	0,5	50	2.230	_

s = strip length (Al), s1 = strip length (Cu)



Notes



# Tools for Cu, Al and AlCu terminals

General information - Tools for Cu, Al and AlCu terminals	2
Crimp tool for Cu-terminals 4 - 25 mm²	3
Crimp tools for Cu-terminals 6 - 120 mm²	5
Battery-powered crimp tool for Cu-terminals 4 - 95 mm²	6
Crimp tool for Cu-terminals 10 - 240 mm², Al-terminals 16 - 25 mm² (-35 solid) mm² and C-sleeves 100 mm² (total)	9
Accessories for crimping Cu with T2600, V600, V611 and PVX611	11
Accessories for crimping Al with T2600, V600, V611 and PVX611	14
DUAL SYSTEM for crimping flexible conductors in KRF/KSF terminals for demanding applications 10-400 mm²	15
Accessories for crimping Cu flexible conductors with DUAL system	18
Tools for Cu-terminals 10 - 400 mm², Al-terminals 16 - 400 mm² and C-sleeves 6 - 240 mm² (total area)	20
Accessories for crimping Cu with V1300, V1311-A and PVX1300	22
Accessories for crimping Al with V1300, V1311-A and PVX1300	28
Accessories for crimping overhead lines with V1300, V1311-A and PVX1300	31
Tools for Cu terminals 10 - 400 mm² and C sleeves 240 mm² (total)	32
Table stand for Cu- and Al-terminals	33
Accessories for crimping Cu with V1300C2, V1311C2-A and PVX1300C2	34
Tools for Cu terminals 10 - 800 mm², Al terminals 16 - 630 mm² and C-sleeves 6 - 300 mm²	39
Accessories for crimping Cu with V250	40
Accessories for crimping Al with V250	44
Accessories for crimping overhead lines with V250	46
Crimp station for industrial crimping of KRF/KSF terminals 10 - 300 mm²	
Analyzer - software for analysis of crimps and system calibration	50
Tools for Cu-terminals 500 - 1000 mm² and Al-terminals 800 - 1200 mm²	
Lightweight and versatile designed pumps based on customer needs	54
Hydraulic foot pump	58



## General information - Tools for Cu, Al and AlCu terminals



#### **System Elpress**

System Elpress consists of terminals and tools that are designed and tested together to give a certified crimping result. This ensures that users will feel confident when using our systems, and that a secure connection will be achieved through the proper handling of our products.

#### Hydraulic crimp systems

Elpress hydraulic crimp systems crimp from 10 to 1200 mm<sup>2</sup>. The systems consist of pumps and crimp heads that can be freely combined or with complete hand-held tools, where these devices are integrated. Wide range of accessories available for crimping, pre-rounding, cutting etc. Together with the matching terminals, the complete system is formed. Both pumps and hand-held tools have, with a few exceptions, quick feed function that means crimping can begin after a few pump strokes. The systems have a built-in ratchet lock that ensures that an initial crimp is completed and thus produces results with the best characteristics. Pumps that can be connected to the different crimp heads provide the option of comfortable work in difficult situations and with maximum flexibility.



Die pair 13DCB20. with dies.

#### **Cu-terminals**

The V1300 system is used for crimping Cu-terminals 10-400 mm<sup>2</sup>. An openhead C version is also available for better access in confined spaces.



#### **Al-terminals**

The V1300 system is used for the indent crimping of Al connections and pre-rounding of Al conductors 16-240 mm². Round crimping is carried out on sector-shaped Al conductors.



#### **Cu-terminals**

The V250 system is used for crimping Cu-terminals 10-800 mm<sup>2</sup>.



#### **Al-terminals**

The V250 system is used for indent crimping Al-terminals and pre-rounding Al conductors 16-630 mm<sup>2</sup>. Round crimping is carried out on sector-shaped Al conductors.





# Crimp tool for Cu-terminals 4 - 25 mm<sup>2</sup>

#### **Properties:**

- certified tool for connection according to norms
- ergonomic handles facilitate installation
- scissor movement for access in confined spaces
- ratchet function that does not release until the crimp is complete
- hexagonal crimping with clearly marked crimping positions



## ES2258

Tested and certified mechanical hand-held tool for crimping Cu-terminals, type CUT 6-16 mm² and KR/KS 4-10 mm².

1	mm²	AWG	Name	Crimp geometry	Net weight (kg)	Length mm	Width	Height
-	4-16	12-6	ES2258	Hexagonal	0,66	300	30	70







# **EL2258**

Tested and certified mechanical hand-held tool for crimping Cu-terminals, type KRF/KSF 16-25 mm<sup>2</sup>.

mm²	AWG	Name	Crimp geometry	Net weight (kg)	Length mm	Width	Height	
16-25	5-3	EL2258	Hexagonal	0,66	300	30	70	

#### Crimp geometry





#### T2258

Tested and certified mechanical hand-held tool for crimping Cu-terminals, type CUT 6-16 mm² and KR/KRF/KS/KSF 4-16 mm².



















 $\label{thm:continuous} \textbf{Tested} \ \text{and} \ \textbf{certified} \ \textbf{mechanical} \ \textbf{hand-held} \ \textbf{tool} \ \textbf{for} \ \textbf{crimping} \ \textbf{Cu-terminals}, \textbf{type}$ KRT/KST 10-25 mm<sup>2</sup>.

mm²	AWG	Name	Crimp geometry	Net weight (kg)	Length mm	Width	Height
10-25	8-4	ES2288	Hexagonal	0,654	300	30	70















Tested and certified mechanical hand-held tool for crimping Cu-terminals 10-16  $\,$ mm<sup>2</sup> and Al 16-25 mm<sup>2</sup>.

mm² (Cu)	AWG/ MCM (Cu)	mm² (Stranded Al)	AWG Al (Stranded)	Name	Crimp geometry	Net weight (kg)	Length	Width	Height
10-16	8-6	16-25	6-4	EW1025	Punch	0,678	300	30	70

Crimp geometry





# Crimp tools for Cu-terminals 6 - 120 mm<sup>2</sup>









#### Crimp geometry



#### T3165

Mechanical hand-held tool for crimping Cu-terminals.

#### **Properties:**

- equipped with ratchet function
- crimp wheels, rolled steel, which provide high strength
- crimp force up to approx. 35 kN

mm²	Name	Crimp geometry	Net weight (kg)	Length mm	Width	Height	Used for
10-70	T3165A1	Punch	2,930	500	44	80	KR/KRF/KS/KSF
10-95	T3165B	Punch	2,939	500	44	80	KR/KRD/KS/KSD
10-95	T3165C	Punch	2,939	500	44	80	KR/KRT/KS/KST





#### Crimp geometry



### **TH** series

Mechanical hand-held tool for crimping Cu-terminals, type KR/KRT and KS/KST,  $6-120 \text{mm}^2$ .

- rotating crimping wheel
- no full closure mechanism
- crimp force up to approx. 35 kN

mm²	Name	Crimp geometry	Net weight (kg)	Length mm	Width	Height
6-50	TH0650T	Hexagonal	1,339	400	44	80
10-120	TH10120T	Hexagonal	3,761	650	44	80



# Battery-powered crimp tool for Cu-terminals 4 - 95 mm<sup>2</sup>







# PVL350 - Elpress Mini



Crimp geometries





Battery-powered tool for crimping tube terminals and through connectors of type KR/KS, KRF/KSF, KRT/KST 10-70 mm² and KRD/KSD up to 95 mm² with special "MB" dies.

- opening head for easy die changes and good accessibility
- high-performance 10.8 V Li-Ion battery with indication of charge status
- very good accessibility and ergonomics
- opening, rotatable "flip top" head for easy die changes and slim crimp head for good accessibility
- rapid crimp sequence 3-4 seconds
- approx. 100-180 crimps/battery charges (depending on temp, frequency etc.)
- 2-component housing with grip-friendly protection. One-handed operation for easy control of all tool functions
- lightweight, and rapid crimping sequence for maximum efficiency
- automatic return of the dies when crimping is complete

mm² (Cu)	Name	Crimp geometry	Net weight (kg)	Length mm	Width	Height	Note
4-95	PVL350	Hexagonal, Oval	1,6	360	116	75	Charger: 230VAC
4-95	PVL350-US	Punch, Hexagonal, Oval	1,6	360	116	75	Charger: 115VAC
4-95	PVL350-WOBC	Punch, Hexagonal, Oval	1,1	360	116	75	without Battery/ Charger



## **Accessories for PVL350**

# Crimp dies for PVL350 (KR/KRF, KS/KSF, CUT, C-sleeves)

Supplied in pairs.

For hexagonal crimping of Cu 4-70 mm², class 2, 5 and 6 conductors acc. IEC 60228, CUT sleeves 6-16 mm² crimped with MB4016. C-sleeves 6-25 mm² are crimped with MBC5 and MBC6.













Die pair MB11 for PVL350.

Die pair MBC5 for PVL350

Through conductor mm²	Branching mm²	mm² KR/KS, KRF/KSF	Name	Number of crimps	Net weight (kg)
		10	MB8	1	0,086
		16	MB9	2	0,085
		25	MB11	2	0,083
		35	MB13	2	0,081
		50	MB14,5	2	0,08
		70	MB17	3	0,075
		4-10, CUT 6-16	MB4016	1	0,082
6-16	6-16		MBC5	2	0,11
5-25	5-25		MBC6	2	0,11



# Crimp dies for PVL350 (KRT/KST)

Supplied in pairs.

For hexagonal crimping of Cu (class 2) 10-70 mm<sup>2</sup>.











Die pair MB11 for PVL350.

mm² KRT/KST	Name	Number of crimps	Net weight (kg)
10	MB7	1	0,088
16	MB8,5	1	0,087
25	MB10	2	0,084
35	MB12	2	0,083
50	MB14	3	0,080
70	MB16	3	0,075

# Crimp dies for PVL350 (KRD/KSD)

Supplied in pairs.

For hexagonal crimping of Cu (class 2) 10-95 mm<sup>2</sup>.











Die pair MB11 for PVL350.

mm² KRD/KSD	Name	Number of crimps	Net weight (kg)
10 / 16	MB8	1	0,086
25	MB9	2	0,085
35	MB11	2	0,083
50	MB12	2	0,083
70	MB14	3	0,080
95	MB17	3	0,075



# Crimp tool for Cu-terminals 10 - 240 mm<sup>2</sup>, Al-terminals 16 - 25 mm<sup>2</sup> (-35 solid) mm<sup>2</sup> and C-sleeves 100 mm<sup>2</sup> (total)













Tested and certified crimp head for crimping Cu-terminals, type KR/KS 10 mm<sup>2</sup>, KRF/KSF 16-150 mm², KRD/KSD 16-185 mm², KRT/KST 10-240 mm², Al-terminals 16-25 mm² (-35 solid), C-sleeves 6/6-50/50 mm², DIN 46235 10-95 mm².

Used in combination with foot pump P4000 or the electrically powered pump PS710 (battery powered version of PS710E is also available).

#### **Properties:**

- working pressure 63 MPa (630 bar)
- crimp force 55 kN
- robust fabric bag with room for 10 dies included

mm² (Cu)	mm² (Stranded Al)	mm² (Solid Al)	Name Crimp geometries	Net weight (kg)	Length mm	Width	Height
10-240	16-25	16-35	V600 Punch, Hexagonal, Oval	2,45	189	74	53

#### Crimp geometries















#### V611



Tested and certified hand-held tool for crimping Cu-terminals, type KR/KS 10 mm², KRF/ KSF 16-150 mm², KRD/KSD 16-185 mm², KRT/KST 10-240 mm², Al-terminals 16-25 mm² (-35 solid), C-sleeves 6/6-50/50 mm², DIN 46235 10-95 mm².

#### Properties:

- fast-feed to crimp engagement provides short crimp times
- crimp force 55 kN
- · delivered in sturdy textile bag

mm² (Cu)	mm² (Stranded Al)	mm² (Solid Al)	Name	Crimp geometries	Net weight (kg)	Length	Width	Height
10-240	16-25	16-35	V611	Punch, Hexagonal, Oval	2,6	425	115	53























Crimp geometries









Tested and certified battery-powered crimp tool for crimping Cu-terminals, type KR/KS 10 mm², KRF/KSF 16-150 mm², KRD/KSD 16-185 mm², KRT/KST 10-240 mm², Al-terminals 16-25 mm² (-35 solid), C sleeves 6/6-50/50 mm², DIN 46235 10-95 mm<sup>2</sup>. PVX611DB has an extra battery.

#### **Properties:**

- protects against dirt and dust through the closed chassis
- ergonomic design ensures optimum balance in the user's hand
- swivel opening crimp fork
- · crimp force control using pressure monitoring
- one handed operation for easy work
- · LED lighting for easier work
- · fast-forward feeding for more efficient crimping
- display with information about the tool and service intervals
- tested together with Elpress TB dies and KB22/KB25
- crimp monitoring via display when the correct pressure/complete crimping is not achieved (warning light LED and signal)

mm² (Cu)	mm² (Stranded Al)	mm² (Solid Al)	Name	Crimp geometries	Net weight (kg)	Length mm	Width	Height	Note
10-150	16-25	16-35	PVX611	Punch, Oval, Hexagonal	5,50	414	116	75	Charger: 230VAC
10-150	16-25	16-35	PVX611DB	Punch, Oval, Hexagonal	5,85	414	116	75	Delivered with 2 batteries
10-150	16-25	16-35	PVX611-US	Punch, Oval, Hexagonal	5,50	414	116	75	Charger: 115VAC
10-150	16-25	16-35	PVX611-WOBC	Punch, Oval, Hexagonal	3,90	414	116	75	Without Battery/ Charger









- opening for easy die changes and for quick removal after jointing
- crimp force approx. 57 kN
- · advanced force ratio for lowest handle force
- easy to work with in confined spaces
- only four die pairs are required to crimp 10-95 mm<sup>2</sup> Cu
- quick feed function
- · delivered in a metal box

mm² (Cu)	mm² (Solid Al)	Name	Crimp geometries	Net weight (kg)	Length mm	Width	Height
10-95	35	T2600	Punch, Hexagonal, Oval	1,9	445	185	52
10-120	35	T2600B	Punch, Hexagonal, Oval	4,12	445	185	52
10-120	35	T2600C	Punch, Hexagonal, Oval	4,12	445	185	52











# Accessories for crimping Cu with tools T2600, V600, V611 and PVX611

# Crimp dies for KRF/KSF

For Cu-terminals, hexagonal crimping. Supplied in pairs. The TB dies below are intended for Cu-terminals, type KRF/KSF, together with Cu conductor according to IEC 60228 (class 2, 5 and 6).









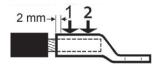


Die pair TB7-20 for V600, V611, PVX611 and T2600.

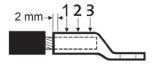




Die pair KB22 for V600, V611 and PVX611.



Crimp sequence for two crimps.



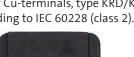
Crimp sequence for three crimps.

mm² KR/KS, KRF/KSF	Name	Number of crimps	Net weight (kg)
10 / 70	TB8-17	1, 2	0,138
16 / 35	TB9-13	1	0,149
25 / 50	TB11-14,5	1	0,149
10/95	TB7-20	1, 2	0,135
120	KB22	3	0,150
150	KB25	3	0,147

KBxx is not allowed to be used with T2600  $\,$ 

# Crimp dies for KRD/KSD

For Cu-terminals, hexagonal crimping. Supplied in pairs. The TB dies below are intended for Cu-terminals, type KRD/KSD, together with Cu conductor according to IEC 60228 (class 2).





Die pair TB7-20 for V600, V611, PVX611 and T2600.



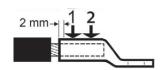
Die pair KB22 for V600, V611 and PVX611.



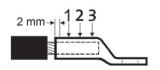








Crimp sequence for two crimps.



Crimp sequence for three crimps.

mm² KRD/KSD	Name	Number of crimps	Net weight (kg)
16 / 70	TB8-14	1	0,149
25 / 50	TB9-12	1	0,150
35 / 95	TB11-16	1, 2	0,142
150	KB22	3	0,150
185	KB25	3	0,147

KBxx is not allowed to be used with T2600



# Crimp dies for KRT/KST

For Cu-terminals, hexagonal crimping. Supplied in pairs. The TB dies below are intended for Cu-terminals, type KRT/KST, together with Cu conductor according to IEC 60228 (class 2).







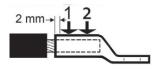




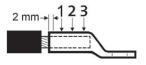
Die pair TB7-20 for V600, V611, PVX611 and T2600.



Die pair KB22 for V600, V611 and PVX611.



Crimp sequence for two crimps.



Crimp sequence for three crimps.

mm² KRT/KST	Name	Number of crimps	Net weight (kg)
10 / 120	TB7-19	1, 2	0,137
16 / 95	TB8,5-18	1, 2	0,137
25 / 70	TB10-16	1, 2	0,143
35 / 50	TB12-14	1	0,147
150	KB22	3	0,150
185	KB24	3	0,144
240	KB26	3	0,145

KBxx is not allowed to be used with T2600

# Crimp dies for overhead line

For joints on overhead lines AlMgSi (Super B) and Al59, hexagonal crimping. Supplied in pairs.











Die pair TBNP 16-20.

mm² Overhead line	Name	Number of crimps	Net weight (kg)	Note
31 - 99	TBNP16-20	2x5, 2x10	0,135	Used for AlMgSl and FeAl, LFS31, LFS62 and LFS99

# Crimp dies for C-sleeves

For Cu branching with C-sleeves, oval crimping. Supplied in pairs.





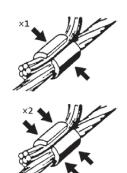












1 and 2 crimps.

Through conductor mm²	Branching mm²	mm²	Name	Number of crimps	Net weight (kg)	Die holder required	Note
6-16 (C5) & 5-25 (C6)	6-16 (C5) & 5-25 (C6)	Total: 12-26 (C5), 30-50 (C6)	TBC5-C6	1	0,142	No	C5 (Sleeve: C6-10) and C6 (Sleeve: C16-25)
6-50	6-50	Total: 50-100 (C89)	TBC89-B13	2, 1	0,123	No	C89 (Sleeve: C25-50) and B13 (KRF/KSF: 35 mm²)

# Accessories for crimping Al with T2600, V600, V611 and PVX611 Punch and Matrix for Al

For Al-terminals, indent crimping. Not used for pre-rounding.

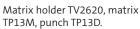


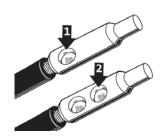












Crimp sequence

Stranded Al mm²	Solid Al mm²	Matrix	Matrix holder	Punch	Number of crimps
16-25	16-35	TP13M	TV2620	TP13D	2

Two crimps are always needed.

# Crimp dies for Al and Cu

For crimping 16-25 mm $^2$  Al and 10-16 mm $^2$  Cu. Rotatable die, one side for crimping aluminum and the other side for crimping copper. Used in the V600 system.









Punch crimping.

The dies below are intended to be used together with Cu/Al conductors according to IEC 60228.





Stranded Al mm²	mm² KR/KS, KRF/KSF	Name	Number of crimps	Net weight (kg)	Note
16-25	10-16	TBKA9-11,5	1	0,14	Used to crimp AS1625 and AKS1625-1016

# DUAL SYSTEM for crimping flexible conductors in KRF/KSF terminals for demanding applications 10-400 mm<sup>2</sup>

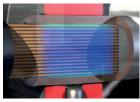


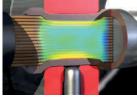
#### **Properties:**

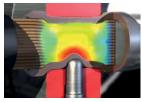
- patented crimping
- for crimping of flexible Cu conductors according to IEC 60228, type class 5
- used with Elpress KRF/KSF terminals
- for extra harsh environments such as cars and trains, where the terminals in addition to electrical properties are also exposed to, for example, corrosion, mechanical durability and vibration
- meets IEC/EN 61238:1
- meets corrosion requirements according to DIN V 40 046-37
- meets the requirements for vibration according to EN 50 155
- meets the requirements of mechanical strength according to SEN 24 50 10

#### Crimping sequence

Contact crimping takes place in a two-stage movement, first a hexagonal crimping that provides optimal symmetrical contact with the conductor, which means that no wires are broken or come apart in the edge facing the connector. This is followed by indent crimping, which provides 30% better electrical properties.







### PVX1300/PVX1300DB

Tested and certified battery-powered crimp gun for contact crimping Cu-terminals, type KR/KRT 10 mm², KS/KST 10 mm², KRF/KRD/KRT 16-400 mm², KSF/KSD/KST 16-400 mm², Al-terminals 16-400 mm² (-240 solid), DIN 46235 10-300 mm<sup>2</sup>, C sleeves up to 240 mm<sup>2</sup> total area (C95-120).





#### **Properties:**

- ergonomic design ensures optimum balance in the user's hand
- · crimp monitoring with warning light and signal when the correct pressure/full crimp is not achieved
- LED work lighting
- possibility of documentation of each crimp for unique service control
- crimp force 124 kN (13 tonnes)
- crimps/charging: 60-120 depending on size and temperature
- crimp time: 4-12s depending on size
- usage temperature -20°C to +40°C
- Li-Ion Makita, 5.0 Ah, 18V
- charger Li-Ion Makita, charging time 22 min 110-240VAC 50-60Hz
- DUAL: 10 300 mm<sup>2</sup>

















mm² (Cu)	mm² (Stranded Al)	mm² I (Solid Al)	Name	Crimp geometry	Net weight (kg)	Length mm	Width	Height	Note
10-400	16-400	16-240	PVX1300	Punch, Dual, Hexagonal, Oval	6,7	412	319	75	Delivered in standard case
10-400	16-400	16-240	PVX1300DB	Punch, Dual, Hexagonal, Oval	7,3	412	319	75	Delivered with 2 batteries
10-400	16-400	16-240	PVX1300-ADV	Punch, Dual, Hexagonal, Oval	14,2	412	319	75	Delivered in CASE ADV.
10-400	16-400	16-240	PVX1300DB-ADV	Punch, Dual, Hexagonal, Oval	14,2	412	319	75	Delivered with 2 batteries and CASE ADV.
10-400	16-400	16-240	PVX1300-WOBC- ADV	Punch, Dual, Hexagonal, Oval	12,4	412	319	75	Delivered in CASE ADV. and without Battery/Charger
10-300	16-400	16-240	PVX1300-US	Punch, Dual, Hexagonal, Oval	6,7	412	319	75	Delivered with battery and US-charger
10-300	16-400	16-240	PVX1300DB-US	Punch, Dual, Hexagonal, Oval	7,3	412	319	75	Delivered with 2 batteries and US-charger
10-400	16-400	16-240	PVX1300-WOBC	Punch, Dual, Hexagonal, Oval	4,8	412	319	75	Delivered without Battery/Charger







## DV1300





Tested and certified crimp head with patented DUAL technology for crimping Cu-terminals, type KR/KRF and KS/KSF 10-300 mm<sup>2</sup>. Used in combination with foot pump P4000 or the electrically powered pump PS710 (battery powered version of PS710E is also available).

#### **Properties:**

- crimp head with the patented DUAL technology that provides optimised hexagonal crimping + a certain amount of indent crimping in two integrated steps
- working pressure 63 MPa (630 bar)
- crimp force 130 kN
- no die holders are needed for DUAL dies
- other accessories (without DUAL function) for crimping both Cu and Al-terminals can be used
- DUAL: 10 300 mm<sup>2</sup>

mm² (Cu)	mm² (Stranded Al)	mm² (Solid Al)	Name	Crimp geometries	Net weight (kg)	Length mm	Width	Height
10-400	16-400	16-240	DV1300	Punch, Dual,	3,34	265	74	75
				Hexagonal, Oval				

#### Crimp geometries





















Crimp head with patented DUAL technology for crimping Cu-terminals, type KR/KRF and KS/KSF 10-300 mm². Used in combination with foot pump P4000 or the electrically powered pump PS710 (battery powered version of PS710E is also available).

#### Properties:

- crimp head for the patented DUAL technology that provides optimised hexagonal crimping + a indent crimping in two integrated steps
- working pressure 63 MPa (630 bar)
- crimp force 130 kN
- no die holders are needed for DUAL dies
- other accessories (without DUAL function) for crimping Cu can be used
- DUAL: 10 300 mm<sup>2</sup>

mm² (Cu)	Name	Crimp geometries	Net weight (kg)	Length mm	Width	Height
10-400	DV1300C2	Dual, Hexagonal, Oval	4,9	297	140	75









### PVX1300C2/PVX1300C2DB

Tested and certified battery-powered crimp gun for crimping Cu-terminals, type Cu-terminals, type KR/KRT 10 mm<sup>2</sup>, KS/KST 10 mm<sup>2</sup>, KRF/KRD/KRT 16-400 mm<sup>2</sup>, KSF/ KSD/KST 16-400 mm<sup>2</sup>, C-sleeves up to 240 mm<sup>2</sup> total area (C95-120).









- ergonomic design ensures optimum balance in the user's hand
- crimp monitoring with warning light (LED) and signal when the correct pressure/ full crimp is not achieved
- LED work lighting
- possibility of documentation of each crimp for unique service control
- crimp force 124 kN (13 tonnes)
- usage temperature -20°C to +40°C
- · Li-Ion Makita, 5.0 Ah, 18V
- charger Li-Ion Makita, charging time 22 min 110-240VAC 50-60Hz
- DUAL: 10 300 mm<sup>2</sup>













mm² (Cu)	Name	Crimp geometry	Net weight (kg)	Length mm	Width	Height	Note
10-400	PVX1300C2	Dual, Hexagonal, Oval	7,5	399	319	75	Delivered in standard case
10-400	PVX1300C2DB	Dual, Hexagonal, Oval	8,1	399	319	75	Delivered with 2 batteries
10-400	PVX1300C2-ADV	Dual, Hexagonal, Oval	15,1	399	319	75	Delivered in CASE ADVANCED
10-400	PVX1300C2DB-ADV	Dual, Hexagonal, Oval	15,1	399	319	75	2 batteries and CASE ADV.
10-400	PVX1300C2-US	Dual, Hexagonal, Oval	5,6	399	319	75	With US charger
10-400	PVX1300C2DB-US	Dual, Hexagonal, Oval	6,2	399	319	75	Delivered with 2 batteries and US-charger
10-400	PVX1300C2-WOBC	Dual, Hexagonal, Oval	5,6	399	319	75	without Battery/Charger

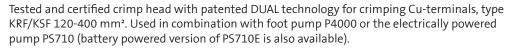














- crimp head with the patented DUAL technology that provides optimised hexagonal crimping + a certain amount of indent crimping in two integrated steps
- working pressure 63 MPa (630 bar)
- crimp force 250kN (25 tonnes)
- · large crimp area
- no die holders are needed for DUAL dies
- Other accessories (without DUAL function) for crimping both Cu and Al-terminals can be used
- DUAL: 120 400 mm<sup>2</sup>

mm² (Cu)	mm² (Stranded Al)	mm² (Solid Al)	Name	Crimp geometries	Net weight (kg)	Length mm	Width	Height
10-800	16-630	16-300	DV250	Punch, Dual, Hexagonal, Oval	4,8	280	111	74











# Accessories for crimping Cu flexible conductors with DUAL system DV1300, DV1300C2, PVX1300, PVX1300C2 and DV250

# Crimp dies for DV1300 och PVX1300

Supplied in pairs.

For Cu-terminals, type KR/KRF and KS/KSF and flexible Cu conductors. No die holders are needed.



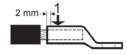


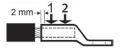












Crimp sequence for one crimp.

Crimp sequence for two crimps.

Die pair 13DB20.

mm²	Name	Number of crimps	Net weight (kg)
10	13DB8	1	0,448
16	13DB9	1	0,447
25	13DB11	1	0,462
35	13DB13	1	0,477
50	13DB14,5	1	0,480
70	13DB17	1	0,486
95	13DB20	1	0,484
120	13DB22	2	0,441
150	13DB25	2	0,440
185	13DB27	2	0,443
240	13DB30	2	0,453
300	13DB32	2	0,428

# Crimp dies for DV1300C2 and PVX1300C2

Supplied in pairs.

For Cu-terminals, type KR/KRF and KS/KSF and flexible Cu conductors. No die holders are needed.





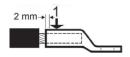


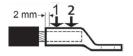






Die pair 13DCB20.





Crimp sequence for one crimp. Crimp sequence for two crimps.

mm²	Name	Number of crimps	Net weight (kg)
10	13DCB8	1	0,456
16	13DCB9	1	0,440
25	13DCB11	1	0,465
35	13DCB13	1	0,486
50	13DCB14,5	1	0,497
70	13DCB17	1	0,503
95	13DCB20	1	0,507
120	13DCB22	2	0,450
150	13DCB25	2	0,498
185	13DCB27	2	0,514
240	13DCB30	2	0,534
300	13DCB32	2	0,490



# Crimp dies for DV250

Supplied in pairs.

For Cu-terminals, type KR/KRF and KS/KSF and flexible Cu conductors. No die holders are needed.

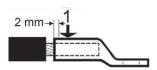


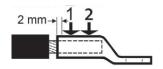












Crimp sequence for one crimp.

Crimp sequence for two crimps.

mm²	Name	Number of crimps	Net weight (kg)
120	DB2522	1	1,060
150	DB2525	1	1,060
185	DB2527	1	1,060
240	DB2530	1	1,060
300	DB2532	1	1,060
400	DB2538	2	1,060



# Tools for Cu-terminals 10 - 400 mm<sup>2</sup>, Al-terminals 16 - 400 mm<sup>2</sup> and C-sleeves 6 - 240 mm<sup>2</sup> (total area)











#### V1300

Tested and certified crimp head for crimping Cu-terminals, type KR/KRT 10 mm², KS/KST 10 mm², KRF/KRD/KRT 16-400 mm², KSF/KSD/KST 16-400 mm², Al-terminals 16-400 mm² (-240 solid), DIN 46235 10-300 mm², C sleeves up to 240 mm² total area (C95-120). Used in combination with foot pump P4000 or the electrically powered pump PS710 (battery powered version of PS710E is also available).

#### Properties:

- working pressure 63 MPa (630 bar)
- crimp force 130 kN (13 tonnes)
- versatile and easy-to-use steel crimp head

mm² (Cu)	mm² (Stranded AI)	mm² (Solid Al)	Name	Crimp geometries	Net weight (kg)	Length mm	Width	Height
10-400	16-400	16-240	V1300	Punch, Hexagonal, Oval	3,46	263	88	75

#### Crimp geometries













#### V1311-A

Tested and certified hydraulic hand-held tool for crimping Cu-terminals, type KR/KRT 10 mm², KS/KST 10 mm², KRF/KRD/KRT 16-400 mm², KSF/KSD/KST 16-400 mm², Al terminals 16-400 mm² (-240 solid), DIN 46235 10-300 mm², C-sleeves up to 240 mm² total area (C95-120).

#### **Properties:**

- · fast forward feeding
- crimp force 130 kN (13 tonnes)
- requires low handle force, approx 245 N at max force
- the fork can rotate 180°

mm² (Cu)	mm² (Stranded Al)	mm² (Solid Al)	Name	Crimp geometries	Net weight (kg)	Length mm	Width	Height
10-400	16-400	16-240	V1311-A	Punch, Hexagonal, Oval	4,3	588	150	74









## PVX1300/PVX1300DB

Tested and certified battery-powered crimp gun for contact crimping Cu-terminals, type KR/KRT 10 mm², KS/KST 10 mm², KSF/KRD/KRT 16-400 mm², KSF/KSD/KST 16-400 mm², Al-terminals 16-400 mm² (-240 solid), DIN 46235 10-300 mm², C sleeves up to 240 mm² total area (C95-120).











- ergonomic design ensures optimum balance in the user's hand
- · crimp monitoring with warning light and signal when the correct pressure/full crimp is not achieved
- LED work lighting
- possibility of documentation of each crimp for unique service control
- crimp force 124 kN (13 tonnes)
- crimps/charging: 60-120 depending on size and temperature
- crimp time: 4-12s depending on size
- usage temperature -20°C to +40°C
- Li-Ion Makita, 5.0 Ah, 18V
- charger Li-Ion Makita, charging time 22 min 110-240VAC 50-60Hz
- DUAL: 10 300 mm<sup>2</sup>















mm² (Cu)	mm² (Stranded Al)	mm² I (Solid Al)	Name	Crimp geometry	Net weight (kg)	Length mm	Width	Height	Note
10-400	16-400	16-240	PVX1300	Punch, Dual, Hexagonal, Oval	6,7	412	319	75	Delivered in standard case
10-400	16-400	16-240	PVX1300DB	Punch, Dual, Hexagonal, Oval	7,3	412	319	75	Delivered with 2 batteries
10-400	16-400	16-240	PVX1300-ADV	Punch, Dual, Hexagonal, Oval	14,2	412	319	75	Delivered in CASE ADVANCED
10-400	16-400	16-240	PVX1300DB-ADV	Punch, Dual, Hexagonal, Oval	14,2	412	319	75	Delivered with 2 batteries and CASE ADV.
10-400	16-400	16-240	PVX1300-WOBC- ADV	Punch, Dual, Hexagonal, Oval	12,4	412	319	75	Delivered in CASE ADV. and without Battery/ Charger
10-300	16-400	16-240	PVX1300-US	Punch, Dual, Hexagonal, Oval	6,7	412	319	75	Delivered with battery and US-charger
10-300	16-400	16-240	PVX1300DB-US	Punch, Dual, Hexagonal, Oval	7,3	412	319	75	Delivered with 2 batteries and US-charger
10-400	16-400	16-240	PVX1300-WOBC	Punch, Dual, Hexagonal, Oval	4,8	412	319	75	Delivered without Battery/Charger



# Accessories for crimping Cu with V1300, V1311-A and PVX1300

The B dies below are intended for Cu-terminals, type KR/KRF and KS/KSF, together with both stranded, multi-stranded and very flexible Cu conductors of Class 2, 5 and 6 respectively according to IEC 60228. For multi-stranded (Class 5) Cu conductors, crimping is recommended with the Dual system. KRD/KSD and KRT/KST are only used for stranded (Class 2) Cu conductors.

## Crimp dies for KRF/KSF

For Cu-terminals, hexagonal crimping. Supplied in pairs. The B dies below are intended for Cu-terminals, type KR/KRF and KS/KSF, together with Cu conductors according to IEC 60228. For multi-stranded (Class 5) and very flexible (Class 6) Cu conductors, crimping with the Dual system is recommended. Use inner die holder **V1316** and outer die holder **V1318**.

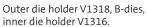






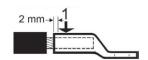








Integrated dies 13B32.



Crimp sequence for one crimp.

mm²	Name	Number of crimps	Net weight (kg)
10	B8	1	0,101
16	B9	1	0,103
25	B11	1	0,109
35	B13	1	0,113
50	B14,5	1	0,111
70	B17	1	0,107
95	B20	1	0,115
120	B22	1	0,148
150	B25	1	0,135

# Crimp dies for KRF/KSF (integrated)

For Cu-terminals, hexagonal crimping. Supplied in pairs. The integrated B dies below are intended for Cu-terminals, type KR/KRF and KS/KSF, together with Cu conductors according to IEC 60228. For multi-stranded (Class 5) and very flexible (Class 6) Cu conductors, crimping with the Dual system is recommended. Used without a die holder.

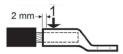


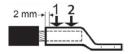


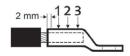












Integrated dies 13B32.

Crimp sequence for one crimp.

Crimp sequence for two crimps.

Crimp sequence for three crimps.

mm²	Name	Number of crimps	Net weight (kg)
10	13B8	1	0,438
16	13B9	1	0,445
25	13B11	1	0,460
35	13B13	1	0,475
50	13B14,5	1	0,471
70	13B17	1	0,465
95	13B20	1	0,473
120	13B22	2	0,421
150	13B25	2	0,422
185	13B27	2	0,419
240	13B30	2	0,413
300	13B32	2	0,408
400	13B38	3	0,308

# Crimp dies for KRD/KSD

For Cu-terminals, hexagonal crimping. Supplied in pairs. The B dies below are intended for Cu-terminals, type KRD and KSD, together with Cu conductors class 2 according to IEC 60228. Use inner die holder **V1316** and outer die holder **V1318**.



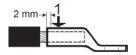








Outer die holder V1318, B-dies, inner die holder V1316.



Crimp sequence for one crimp.

mm² KRD/KSD	Name	Number of crimps	Net weight (kg)	Die holder required
16	B8	1	0,101	Yes
25	B9	1	0,103	Yes
35	B11	1	0,109	Yes
50	B12	1	0,108	Yes
70	B14	1	0,112	Yes
95	B16	1	0,107	Yes
120	B19	1	0,118	Yes
150	B22	1	0,148	Yes

# Crimp dies for KRD/KSD (integrated)

For Cu-terminals, hexagonal crimping. Supplied in pairs. The integrated B dies below are intended for Cu-terminals, type KRD and KSD, together with Cu conductors Class 2 according to IEC 60228. Used without a die holder.



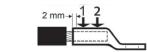












Crimp sequence for two crimps.

Integrated dies 13B32.

Crimp sequence for one crimp.

mm² KRD/KSD	Name	Number of crimps	Net weight (kg)
16	13B8	1	0,438
25	13B9	1	0,445
35	13B11	1	0,460
50	13B12	1	0,457
70	13B14	1	0,471
95	13B16	1	0,466
120	13B19	1	0,476
150	13B22	2	0,421
185	13B25	2	0,422
240	13B27	2	0,419
300	13B30	2	0,413
400	13B32	2	0,408

# Crimp dies for KRT/KST

For Cu-terminals, hexagonal crimping. Supplied in pairs. The B dies below are intended for Cu-terminals, type KRT and KST, together with Cu conductors class 2 according to IEC 60228. Use inner die holder **V1316** and outer die holder **V1318**.

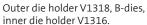












2 mm - 1

Crimp sequence for one crimp.

mm² KRT/KST	Name	Number of crimps	Net weight (kg)
10	B7	1	0,101
16	B8,5	1	0,101
25	B10	1	0,106
35	B12	1	0,108
50	B14	1	0,112
70	B16	1	0,107
95	B18	1	0,120
120	B19	1	0,118
150	B22	1	0,148
185	B24	1	0,139



# Crimp dies for KRT/KST (integrated)

For Cu-terminals, hexagonal crimping. Supplied in pairs. The integrated B dies below are intended for Cu-terminals, type KRT and KST, together with Cu conductors Class 2 according to IEC 60228. Used without a die holder.

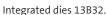


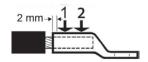












Crimp sequence for two crimps.

mm²		Number of	Net weight
KRT/KST	Name	crimps	(kg)
25	13B10	1	0,451
35	13B12	1	0,457
50	13B14	1	0,471
70	13B16	1	0,466
95	13B18	1	0,480
120	13B19	1	0,476
150	13B22	2	0,421
185	13B24	2	0,001
240	13B26	2	0,420
300	13B30	2	0,413
400	13B32	2	0,408

# **Crimp dies for C-sleeves**

For Cu branching with C-sleeves, oval crimping. Unless otherwise stated, use inner die holder **V1316**, and outer die holder **V1318**.



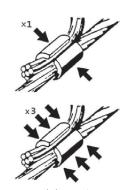








Outer die holder V1318, BC dies, inner die holder V1316.



One and three crimps.

Through conductor mm²	Branching mm²	mm²	Name	Number of crimps	Net weight (kg)	Die holder required
6-16	6-16	Total: 12-26	BC5	1	0,112	Yes
5-25	5-25	Total: 30-50	BC6	1	0,149	Yes
6-50	6-50	Total: 50-100	BC8-9	1	0,138	Yes
25-120	25-120	Total: 95-190	13BC13	3	0,410	
25-185	25-185	Total: 175-240	13BC15	3	0.404	

# Die holders for the 1300 system

Outer and inner holder for the 1300 system.















Inner die holder V1316

Name	Net weight (kg)		
V1316	0,197		
V1318	0,309		











A safer, more durable and easier to handle case for Elpress crimping tools, PVX1300 and PVX1300C2. CASE ADVANCED can handle the most demanding conditions. The case is IP67 rated, withstands dust and heavy impacts. Pull handles and wheels make it easier for the user to transport the tool and the right accessories.

- lifetime warranty.
- handles can withstand up to 30 kg.
- compartment for easy storage of dies, matrices and punches.
- $\bullet$  with stands temperatures from -30 °C up to +90 °C.
- the case can be locked with double padlocks.
- pressure equalisation valve.
- IP67 (fully waterproof to a depth of 1 metre).
- STANAG4280, DEF-STAN 81-41 Certification.

Name	Net weight (kg)
PVX1300-CASE-ADV	7,6









# Storage box LV1300B

Storage box that holds the V1300 tool and accessories to crimp Elpress Cu-terminals.

#### **Properties:**

- material plywood
- interior material polyethylene
- solid, moulded interior

Name	Net weight (kg)	Length mm	Width	Height
LV1300B	5,12	570	467	130









# Storage box L1300 CU-ALU

Additional storage box for accessories for PVX1300. The box holds all the accessories needed when working with the 1300 system from Elpress. The box holds space for 14 B-dies, 1-2 die holders, 12-14 integrated B-dies (DUAL-die pairs), 4 punches (AL crimping), 8 pre-rounding punches and 3 matrixes as well as a matrix holder (example). The box is designed together with the L-PVX1300, and is advantageously used with this box.

#### **Properties:**

- material plywood
- interior material polyethylene
- · solid, moulded interior

Name	Net weight (kg)	Length mm	Width	Height
L1300 CU-ALU	3,76	570	435	175









# Storage box L-PVX1300

Additional storage box for PVX1300. The box is designed to hold PVX1300 with charger and an extra battery. there's also extra space for a few dies, stripping tool and terminals. The box is designed together with the L1300 CU-ALU and is advantageously used together.

- material plywood
- interior material polyethylene
- solid, moulded interior

Name	Net weight (kg)	Length mm	Width	Height	
L-PVX1300	3,76	570	435	175	



# Accessories for crimping Al with V1300, V1311-A and PVX1300

# Punch and Matrix for indent crimping

For Al-terminals, indent crimping. For the indent crimping of Al-terminals, two crimps are always required.
For 16-150 (185 solid) mm² use matrix holder V1320.







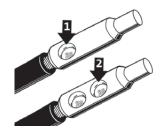








Matrix holder V1320, matrix P13M, punch P13D.



Crimp sequence

Stranded Al mm²	Solid Al mm²	Matrix	Punch	Number of crimps	Matrix holde required	er Punch holder required	Note
16-25	16-35	P13M	P13D	2	Yes	No	
35-70	50-95	P20M	P20D	2	Yes	No	
95-150	120-185	P25M	P25D	2	Yes	No	
185-240	240	13P32M	P32D	2	No	No	
300-400		13P37M	13P37D	2	No	No	Matrix with safety line. For Al-terminals, type AKKXXXB/AKSXXXB and sleeves type ASXXXB

# Punch and Matrix for pre-rounding

For Al conductors, pre-rounding. Use matrix holder **V1320**.















Matrix holder V1320, matrix R6MR, punch 13R6DR.

Stranded Al mm²	Solid Al mm²	Matrix	Punch	Number of crimps	Matrix holder required	Punch holder required
16	16 (+25)	R6MR	13R6DR	1	Yes	No
25	35	R7MR	13R7DR	1	Yes	No
35	50	R8MR	13R8DR	1	Yes	No
50	70	R9MR	13R9DR	1	Yes	No
70	95	R12MR	13R12DR	1	Yes	No
95	120	R13MR	13R13DR	1	Yes	No
120	150	R15MR	13R15DR	1	Yes	No
150	185	R16MR	13R16DR	1	Yes	No
185	240	13R18MR	13R18DR	1	Yes	No
240		13R20MR	13R20DR	1	Yes	No



# Matrix holder for the 1300 system

Matrix holder for non-integrated matrix. Punch holder not required for the 1300 system.











Stranded Al mm²	Solid Al mm²	Name	Net weight (kg)
16-150	16-185	V1320	0,367

# MultiCrimp punch and matrix for indent crimping

For Al-terminals 50-240 mm², indent crimp, both round- and sector shaped conductors. Without need for pre-rounding of sector shaped conductors. Used without matrix holder.















Stranded Al mm²	Matrix	Punch	Number of crimps	Net weight (kg)
50-95	13P5095M	13P5095D	1	0,394
120-150	13P120150M	13P120150D	1	0,394
185-240	13P185240M	13P185240D	2	0,394











# Storage box L-Alu

Additional storage box for LV1300B and LV250, with space for accessories to crimp Elpress Al-terminals.

#### **Properties:**

- material plywood
- interior material polyethylene
- · solid, moulded interior

Name	Net weight (kg)	Length mm	Width	Height
L-ALU	5,17	570	467	130









# Storage box L-PVX1300

Additional storage box for PVX1300. The box is designed to hold PVX1300 with charger and an extra battery. there's also extra space for a few dies, stripping tool and terminals. The box is designed together with the L1300 CU-ALU and is advantageously used together.

#### **Properties:**

- material plywood
- interior material polyethylene
- · solid, moulded interior

Name	Net weight (kg)	Length mm	Width	Height
L-PVX1300	3,76	570	435	175









# Storage box L1300 CU-ALU

Additional storage box for accessories for PVX1300. The box holds all the accessories needed when working with the 1300 system from Elpress. The box holds space for 14 B-dies, 1-2 die holders, 12-14 integrated B-dies (DUAL-die pairs), 4 punches (AL crimping), 8 pre-rounding punches and 3 matrices as well as a matrix holder (example). The box is designed together with the L-PVX1300, and is advantageously used with this box.

- · material plywood
- interior material polyethylene
- · solid, moulded interior

Name	Net weight (kg)	Length mm	Width	Height	
L1300 CU-ALU	3.76	570	435	175	



# Accessories for crimping overhead lines with V1300, V1311-A and PVX1300

# Crimp dies for AlMgSi (Super B) and Al59

Supplied in pairs. Hexagonal crimping. Use inner die holder V1316, and outer die holder V1318.











Outer die holder V1318, BNP dies, inner die holder V1316.

mm² Overhead line	Name	Number of crimps	Net weight (kg)	Die holder required	Note
31-62	B16NP	2x5	0,118	Yes	AlMgSi 31-62 mm², FeAL: 62 mm², ALUS 50 mm²
99	B20NP	2x5	0,126	Yes	AlMgSi 99 mm², FeAL: 99 mm²
157	13B26	2x16	0,420	No	Overhead line: 157 mm² (2x16 crimps)
241	13B32	2x16	0,408	No	Overhead line: 241 mm² (2x16 crimps)

# Crimp dies for overhead lines FeAl

Supplied in pairs. BxxFE dies are used for steel sleeves and BxxNP dies are used for Al-sleeves. Use inner die holder **V1316** and outer die holder **V1318**.











Die pair B16NP

mm²	Die Fe	Die Al	Number of crimps
62	B6FE	B16NP	2x5
99	B8FE	B20NP	2x5

# Tools for Cu terminals 10 - 400 mm<sup>2</sup> and C sleeves 240 mm<sup>2</sup> (total)











#### V1300C2

Tested and certified crimp head for crimping Cu-terminals, type KR/KRT 10 mm², KS/KST 10 mm², KRF/KRD/KRT 16-400 mm², KSF/KSD/KST 16-400 mm². Used in combination with foot pump P4000 or battery and mains powered pump PS710 (battery powered version of PS710E is also available).

#### **Properties:**

- working pressure 63 MPa (630 bar)
- crimp force 130 kN
- versatile and easy to use

mm² (Cu)	Name	Crimp geometries	Net weight (kg)	Length mm	Width	Height
10-400	V1300C2	Hexagonal, Oval	4,6	296	125	75

#### Crimp geometries















#### V1311C2-A

Tested and certified hydraulic hand-held tool for crimping Cu-terminals, type KR/KRT 10 mm², KS/KST 10 mm², KRF/KRD/KRT 16-400 mm², KSF/KSD/KST 16-400 mm².

- fast forward feeding
- the fork can rotate 180°
- crimp force 130 kN
- requires low handle force, about 245N at maximum force
- easy to carry and work with

mm² (Cu)	Name	Crimp geometries	Net weight (kg)	Length mm	Width	Height
10-400	V1311C2-A	Hexagonal, Oval	5,7	625	150	76



Storage box supplied with the V1311C2-A and V1311-A tools.



### PVX1300C2/PVX1300C2DB

Tested and certified battery-powered crimp gun for crimping Cu-terminals, type KR/KRF and KS/KSF 10-400 mm<sup>2</sup>, C-sleeves up to 240 mm<sup>2</sup> total area (C95-120).







#### **Properties:**

- ergonomic design ensures optimum balance in the user's hand
- crimp monitoring with warning light and signal when the correct pressure/full crimp is not achieved
- LED work lighting
- possibility of documentation of each crimp for unique service control
- crimp force 124 kN (13 tonnes)
- usage temperature -20°C to +40°C
- Li-Ion Makita, 5.0 Ah, 18V
- charger Li-Ion Makita, charging time 22 min 110-240VAC 50-60Hz
- DUAL: 10 300 mm<sup>2</sup>













mm² (Cu)	Name	Crimp geometry	Net weight (kg)	Length	Width	Height	Note
10-400	PVX1300C2	Dual, Hexagonal, Oval	7,5	399	319	75	Delivered in standard case
10-400	PVX1300C2DB	Dual, Hexagonal, Oval	8,1	399	319	75	Delivered with 2 batteries
10-400	PVX1300C2-ADV	Dual, Hexagonal, Oval	15,1	399	319	75	Delivered in CASE ADVANCED
10-400	PVX1300C2DB-ADV	Dual, Hexagonal, Oval	15,1	399	319	75	2 batteries and CASE ADV.
10-400	PVX1300C2-US	Dual, Hexagonal, Oval	5,6	399	319	75	With US charger
10-400	PVX1300C2DB-US	Dual, Hexagonal, Oval	6,2	399	319	75	Delivered with battery and US-charger
10-400	PVX1300C2-WOBC	Dual, Hexagonal, Oval	5,6	399	319	75	without Battery/Charger

### Table stand for Cu- and Al-terminals







# TS1300, TS1300CU, TS1300AL



The TS1300 is a table stand that can be used with crimp heads DV1300C2 or V1300C2-AI

The table stand is designed for operators with high frequency use of the C2 crimp head. With the table stand you get a stable, safe and easy use of the C2 crimp head.

mm²	Name	Crimp geometries	Net weight (kg)	Length mm	Width	Height
10-400	TS1300CU	Dual, Hexagonal, Oval	18,7	190	100	312
16-400	TS1300AL	Punch	20,9	190	100	330
10-400	TS1300		14,1	190	100	215

TS1300 with crimp head



# Accessories for crimping Cu with V1300C2, V1311C2-A and PVX1300C2

The B dies below are intended for Cu-terminals, type KR/KRF/KRD/KRT and KS/KSF/KSD/KST, together with both stranded and multi-stranded Cu conductors of Class 2 according to IEC 60228. For multi-stranded (Class 5) Cu conductors, crimping is recommended with the Dual system.

# Crimp dies (C-fork) for KRF/KSF

Supplied in pairs.

For Cu-terminals, hexagonal crimping. Used with die holder V1330.

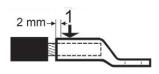












B dies.

Crimp sequence for one crimp.

mm² KR/KS, KRF/KSF	Name	Number of crimps	Net weight (kg)
10	B8	1	0,101
16	B9	1	0,103
25	B11	1	0,109
35	B13	1	0,113
50	B14,5	1	0,111
70	B17	1	0,107
95	B20	1	0,115
120	B22	1	0,148
150	B25	1	0,135

## Crimp dies (C fork) for KRF/KSF (integrated)

Supplied in pairs.

For Cu-terminals, hexagonal crimping. Used without a die holder.



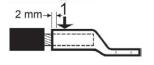


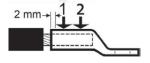


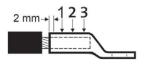












13CB20

Crimp sequence for one crimp.

Crimp sequence for two crimps.

Crimp sequence for three crimps.

mm² KR/KS, KRF/KSF	Name	Number of crimps	Net weight (kg)	Die holder required	Note
10	13CB8	1	0,434	No	
16	13CB9	1	0,446	No	
25	13CB11	1	0,468	No	
35	13CB13	1	0,488	No	
50	13CB14,5	1	0,481	No	
70	13CB17	1	0,480	No	
95	13CB20	1	0,497	No	
120	13CB22	1	0,537	No	
150	13CB25	2	0,474	No	
185	13CB27	2	0,478	No	
240	13CB30	2	0,535	No	
300	13CB32	2	0,491	No	
400	13C21B38	3	0,450	No	Used in V1300C2 but NOTE that V13C21 must be in the crimp head/fork.

## Crimp dies (C-fork) for KRD/KSD

For Cu-terminals, hexagonal crimping. Supplied in pairs. The B dies below are intended for Cu-terminals, type KRD and KSD, together with Cu conductors class 2 according to IEC 60228. Used with die holder V1330.



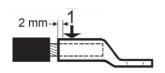












B dies.

Die holder V1330 (pair).

mm² Number of Net weight Name KRD/KSD crimps (kg) 16 В8 1 0,101 25 В9 1 0,103 35 B11 0,109 1 50 B12 1 0,108 70 R14 1 0,112 95 B16 1 0,107 B19 1 120 0,118 150 B22 1 0,148

Crimp sequence for one crimp.



## Crimp dies (C fork) for KRD/KSD (integrated)

Supplied in pairs.

For Cu-terminals, hexagonal crimping. Used without a die holder.



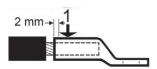




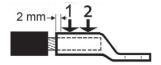








Crimp sequence for one crimp.



Crimp sequence for two crimps.

mm² KRD/KSD	Name	Number of crimps	Net weight (kg)	
16	13CB8	1	0,434	
25	13CB9	1	0,446	
35	13CB11	1	0,468	
50	13CB12	1	0,466	
70	13CB14	1	0,483	
70	13CB16	1	0,484	
120	13CB19	1	0,500	
150	13CB22	1	0,537	
185	13CB25	2	0,474	
240	13CB27	2	0,478	
300	13CB30	2	0,535	
400	13CB32	2	0.491	

## Crimp dies (C-fork) for KRT/KST

For Cu-terminals, hexagonal crimping. Supplied in pairs. The B dies below are intended for Cu-terminals, type KRD and KSD, together with Cu conductors class 2 according to IEC 60228. Used with die holder **V1330**.







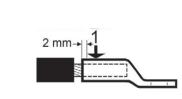








Die holder V1330 (pair).



Crimp sequence for one crimp.

mm² KRT/KST	Name	Number of crimps	Net weight (kg)	Die holder required
10	В7	1	0,101	Yes
16	B8,5	1	0,101	Yes
25	B10	1	0,106	Yes
35	B12	1	0,108	Yes
50	B14	1	0,112	Yes
70	B16	1	0,107	Yes
95	B18	1	0,120	Yes
120	B19	1	0,118	Yes
150	B22	1	0,148	Yes
185	B24	1	0,139	Yes



## Crimp dies (C fork) for KRT/KST (integrated)

Supplied in pairs.

For Cu-terminals, hexagonal crimping. Used without a die holder.



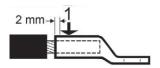


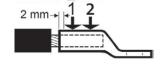












Crimp sequence for one crimp.

Crimp sequence for two crimps.

mm² KRT/KST	Name	Number of crimps	Net weight (kg)
10	13CB7	1	0,46
16	13CB8,5	1	0,46
25	13CB10	1	0,475
35	13CB12	1	0,466
50	13CB14	1	0,483
95	13CB16	1	0,484
95	13CB18	1	0,502
120	13CB19	1	0,50
150	13CB22	1	0,537
185	13CB24	2	0,482
240	13CB26	2	0,48
300	13CB30	2	0,535
400	13CB32	2	0,491

## Crimp dies (C-fork) for C-sleeves

For Cu branching with C-sleeves, oval crimping. Unless otherwise stated, use die holder **V1330**.



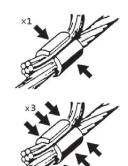












1 and 3 crimps.

Through conductor mm²	Branching mm²	mm²	Name	Number of crimps	Net weight (kg)	Die holder required
6-16	6-16	Total: 12-26	BC5	1	0,112	Yes
5-25	5-25	Total: 30-50	BC6	1	0,149	Yes
6-50	6-50	Total: 50-100	BC8-9	1	0,138	Yes
25-120	25-120	Total: 95-190	13CBC13	3	0,620	No
25-185	25-185	Total: 175-240	13CBC15	3	0,462	No



## Die holders for the 1300 system (C2)

Supplied in pairs.











Name	Net weight (kg)
V1330	0,43

# Tools for Cu terminals 10 - 800 mm<sup>2</sup>, Al terminals 16 - 630 mm<sup>2</sup> and C-sleeves 6 - 300 mm<sup>2</sup>











Tested and certified crimp head for crimping Cu-terminals, type KR/KRT 10 mm², KS/KST 10 mm², KRF/KRD/KRT 16-800 mm², KSF/KSD/KST 16-800 mm², Al-terminals 16-630 mm² (-300 solid), C sleeves 6/6-300/300 mm². Used in combination with foot pump P4000 or the electrically powered pump PS710 (battery powered version of PS710E is also available).

#### **Properties:**

- working pressure 63 MPa (630 bar)
- crimp force 250kN (25 tonnes)
- large crimp area, 10-800 mm²

mm² (Cu)	mm² (Stranded AI)	mm² (Solid Al)	Name	Crimp geometries	Net weight (kg)	Length mm	Width	Height
10-800	16-630	16-300	V250	Punch, Hexagonal, Oval	4,68	280	111	74

#### Crimp geometries









## Accessories for crimping Cu with V250

The B dies are intended for Cu-terminals, type KR/KRF and KS/KSF, together with stranded Cu conductors of Class 2 according to IEC 60228. For multi-stranded (Class 5) Cu conductors, crimping with the Dual system is recommended.

## Crimp dies for KRF/KSF

Supplied in pairs.

For Cu-terminals, KRF/KSF, hexagonal crimping. If die holders are required, use inner die holder **V2506** and outer die holder **V2508** 





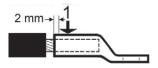




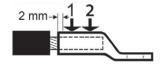




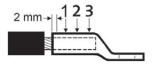




Crimp sequence for one crimp.



Crimp sequence for two crimps.



Crimp sequence for three crimps.

mm² KRF/KSF	Name	Number of crimps	Net weight (kg)	t Die holder required
10	B8	1	0,101	Yes
16	B9	1	0,103	Yes
25	B11	1	0,109	Yes
35	B13	1	0,113	Yes
50	B14,5	1	0,111	Yes
70	B17	1	0,107	Yes
95	B20	1	0,115	Yes
120	B22	1	0,148	Yes
150	B25	1	0,135	Yes
185	B27	1	0,128	Yes
240	B30	1	0,115	Yes
300	B2532	1	1,018	No
400	B2538	2	0,896	No
500	B2542	2	0,874	No
630	B2553	3	0,912	No

## Crimp dies for KRD/KSD

Supplied in pairs.

For Cu-terminals, KRD/KSD, hexagonal crimping. If die holders are required, use inner die holder **V2506** and outer die holder **V2508** 



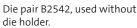


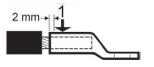




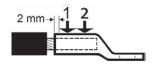




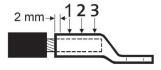




Crimp sequence for one crimp.



Crimp sequence for two crimps.



Crimp sequence for three crimps.

mm² KRD/KSD	Name	Number of crimps	Net weight (kg)	Die holder required
16	B8	1	0,101	Yes
25	B9	1	0,103	Yes
35	B11	1	0,109	Yes
50	B12	1	0,108	Yes
70	B14	1	0,112	Yes
95	B16	1	0,107	Yes
120	B19	1	0,118	Yes
150	B22	1	0,148	Yes
185	B25	1	0,135	Yes
240	B27	1	0,128	Yes
300	B30	1	0,115	Yes
400	B2532	1	1,018	No
500	B2540	2	0,891	No
630	B2545	3	0,899	No
800	B2553	3	0,912	No



## Crimp dies for KRT/KST

Supplied in pairs.

For Cu-terminals, KRT/KST, hexagonal crimping. If die holders are required, use inner die holder **V2506** and outer die holder **V2508**.





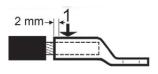




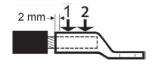




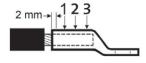
Die pair B2542, used without die holder.



Crimp sequence for one crimp.



Crimp sequence for two crimps.



Crimp sequence for three crimps.

mm² KRT/KST	Name	Number of crimps	Net weight (kg)	Die holder required
10	B7	1	0,101	Yes
16	B8,5	1	0,101	Yes
25	B10	1	0,106	Yes
35	B12	1	0,108	Yes
50	B14	1	0,112	Yes
70	B16	1	0,107	Yes
95	B18	1	0,120	Yes
120	B19	1	0,118	Yes
150	B22	1	0,148	Yes
185	B24	1	0,139	Yes
240	B26	1	0,131	Yes
300	B30	1	0,115	Yes
400	B2532	1	1,018	No
500	B2540	2	0,891	No
630	B2545	3	0,899	No
800	B2553	3	0,912	No

## Crimp dies for C-sleeves

Die pair for Cu-branching with C-sleeves, oval crimping. If a die holder is required, use inner die holder **V2506** and outer die holder **V2508**, for the V250 system.







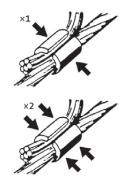








Die pair B25C16



One and two crimps.

Through conductor mm²	Branching mm²	mm²	Name	Number of crimps	Net weight (kg)	Die holder required
6-16	6-16	Total: 12-26	BC5	1	0,112	Yes
5-25	5-25	Total: 30-50	BC6	1	0,149	Yes
6-50	6-50	Total: 50-100	BC8-9	1	0,138	Yes
25-120	25-120	Total: 95-190	BC13	1	0,142	Yes
25-185	25-185	Total: 175-240	B25C15	1	1,012	No
25-300	25-300	Total: 245-425	B25C18	2	0,954	No
150-300	150-300	Total: 450-540	B25C21	2	0,864	No

## Die holders for the 250 system

Inner and outer die holder for the 250 system.











Inner die holder V2506.

Y

Outer die holder V2508.

Name	Net weight (kg)	
V2506	0,341	
V2508	0,632	



## Accessories for crimping Al with V250

## Punch and Matrix for indent crimping

For indent crimping of Al-terminals and connectors. Two crimps are always needed, see image.

For solid (Class 1) and solid (Class 2) Al-conductors according to IEC 60228. (no punch holder is needed)

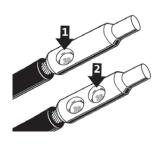












Matrix holder V2521, matrix P13M, punch P13D.

Crimp sequence

Stranded Al mm²	Solid Al mm²	Matrix	Matrix holder	Punch	Number of crimps	Used for
16-25	16-35	P13M	V2521	P13D	2	
35-70	50-95	P20M	V2521	P20D	2	
95-150	120-185	P25M	V2521	P25D	2	
185-240	240	P32M	V2531	P32D	2	
300	300	P36M	V2531	P36-40-44D	2	
300-400		P2537M		P2537D	2	Terminals and through connectors of type AK/AS/AKK/AKS 300B-400B
400		P40M	V2531	P36-40-44D	2	
500		P44M	V2531	P36-40-44D	2	Terminals and through connectors of type AK/AS/AKK/AKS 500B
500-630		P2552M		P2552D	2	Terminals and through connectors type AK/AS/AKK/AKS 500A

## Punch and Matrix for pre-rounding

For Al conductors, pre-rounding. Use punch holder **V2540**.











Matrix holder V2531, matrix R18MR, punch R18DR, punch holder V2540.

Stranded Al	Solid Al mm²	Matrix	Matrix holder	Punch
16	16 (+25)	R6MR	V2521	R6DR
25	35	R7MR	V2521	R7DR
35	50	R8MR	V2521	R8DR
50	70	R9MR	V2521	R9DR
70	95	R12MR	V2521	R12DR
95	120	R13MR	V2521	R13DR
120	150	R15MR	V2521	R15DR
150	185	R16MR	V2521	R16DR
185	240	R18MR	V2531	R18DR
240		R20MR	V2531	R20DR
300	300	R21MR	V2531	R21DR
400		R26MR	V2531	R26DR
500		R28MR	V2531	R28DR

## Matrix- and punch holder for the 250 system

Matrix- and punch holder for the 250 system.













Stranded Al mm²	Solid Al mm²	Name	Net weight (kg)
16-150	16-185	V2521	0,921
185-500	240-300	V2531	0,750
16-500	16-300	V2540	0,157

## Accessories for crimping overhead lines with V250

## Crimp dies for AlMgSi(Super B) and Al59

Supplied in pairs. For joints on overhead lines AlMgSi (Super B) and Al59, hexagonal crimping. Use inner die holder **V2506** and outer die holder **V2508**.











Die holder V2508, BNP dies, die holder V2506.

mm² Overhead line	Name	Number of crimps	Net weight (kg)
31-62	B16NP	2x5	0,118
99	B20NP	2x5	0,126
157	B26NP	2x8	0,140

## Crimp dies for overhead lines FeAl

Supplied in pairs. BxxFE dies are used for steel sleeves and BxxNP dies are used for Al-sleeves. Use inner die holder **V2506** and outer die holder **V2508**.











Die pair B16NP

mm²	Die Fe	Die Al	Number of crimps
62	B6FE	B16NP	2x5
99	B8FE	B20NP	2x5









## Storage box L-Alu

Additional storage box for LV1300B and LV250, with space for accessories to crimp Elpress Al-terminals.

#### **Properties:**

- material plywood
- interior material polyethylene
- solid, moulded interior

Name	Net weight (kg)	Length mm	Width	Height
L-ALU	5,19	570	467	130









## Storage box LV250

Storage box with space for tool V250 and all necessary accessories to crimp Elpress Cu-terminals.

#### **Properties:**

- material plywood
- interior material polyethylene
- · solid, moulded interior

Name	Net weight (kg)	Length mm	Width	Height
LV250	5,09	570	467	130



# Crimp station for industrial crimping of KRF/KSF terminals 10 - 300 mm<sup>2</sup>











Crimp station CS2500.

Pump PS710D.

Elpress crimp station CS2500 offers efficient production with the greatest possible personal safety. Advanced, intelligent properties combined with simplicity make the product unique.

#### **Properties:**

- designed for continuous production of electric Cu-terminals, 10-300 mm²
- quick locking of the terminal using low force shortens the overall time for crimping
- automatic setting of crimp force up to 250 kN, provides optimal service life for tools and accessories
- only one crimp necessary throughout the work area
- integrated Elpress DUAL System
- hydraulic pump PS710D with control, monitoring and error reporting
- operated with a foot pedal
- CE approved, meets the requirements of the Safety of machinery directive
- software Analyzer for analysis and report printout of crimps
- 110-240VAC 50-60Hz

mm² (Cu)	Name	Net weight (kg)	Length mm	Width	Height	
10-300	CS2500	59.5	200	350	340	



## Crimp dies for CS2500

Supplied in pairs.

For Cu-terminals, type KR/KRF and KS/KSF and flexible Cu conductors, no die holders are required.













Die pair 13DCB20.

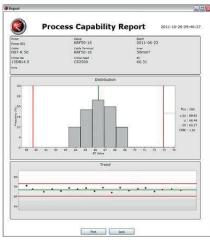
mm²	Name	Number of crimps	Net weight (kg)
10	13DCB8	1	0,456
16	13DCB9	1	0,440
25	13DCB11	1	0,465
35	13DCB13	1	0,486
50	13DCB14,5	1	0,497
70	13DCB17	1	0,503
95	13DCB20	1	0,507
120	20DCB22	1	0,599
150	20DCB25	1	0,599
185	20DCB27	1	0,591
240	20DCB30	1	0,587
300	20DCB32	1	0,564



## Analyzer - software for analysis of crimps and system calibration







Analyzer, measures and analyses each individual crimp.

The Analyzer program is used to ensure quality crimps and save data to quality documents. By simple means, all crimps can be studied in a PC environment where they get their own ID number for full traceability. The unique SPC tool, Statistic Process Control, makes it possible to consider crimping as a measurable process. Analyzer is a statistical program for systematic studies of variations in the crimp process. Furthermore, you can export, import, print or save graphs, calibration data, batch reports etc.

#### **Properties:**

- Elpress Analyzer improves overall quality
- helps the user
- provides a process improvement tool
- measures and shows all crimps
- supports preventive maintenance of equipment
- creates traceability and documentation
- makes communication easy
- increases user skills
- eliminates incorrect crimps
- comes with instructions for use



# Tools for Cu-terminals 500 - 1000 mm<sup>2</sup> and Al-terminals 800 - 1200 mm<sup>2</sup>



## V1470

Tested and certified crimp head for contact crimping Cu-terminals, type KRF/KSF 500-800 mm², KRD/KSD, KRT/KST 500-1000 mm², Al-terminals 800-1200 mm², C-sleeves 245-540 mm² (C150-185 och C240-300). Used in combination with foot pump P4000 or electrically powered pump PS710.

#### Properties:

- working pressure 63 MPa (630 bar)
- crimp force 400 kN
- supplied in plywood box

mm² (Cu)	mm² (Stranded Al)	Name	Crimp geometries	Net weight (kg)	Length mm	Width	Height
500-1000	800-1200	V1470	Punch, Hexagonal, Oval	20,76	510	235	103

#### Crimp geometries









## Crimp dies for KRF/KSF, KRD/KSD and KRT/KST

Supplied in pairs.

For Cu-terminals, hexagonal crimping. When crimping Cu-terminals, two crimps are always required.



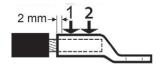






two crimps are always required. Flexible conductors in KRF/KSF and stranded conductors in KRD/KSD/KRT/KST.





B4040.

Crimp sequence for two crimps.

mm²	Name	Number of crimps	Net weight (kg)	Die holder required	Note
500	B4040	2	4,011	No	For stranded Cu-conductors: KRD/KSD, KRT/KST 500 mm²
500	B4042	2	4,067	No	For multi strand Cu-conductors: KRF/KSF 500 mm²
630	B4045	2	3,959	No	For stranded Cu-conductors: KRD/KSD, KRT/KST 630 mm²
630-800	B4053	2	3,901	No	For multi strand Cu-conductors: KRF/KSF (and stranded Cu conductors 800 mm²: KRD/KSD/KRT/KST)
1000	B4056	2	3,670	No	For stranded Cu-conductors: KRD/KSD, KRT/KST

## Crimp dies for C-sleeves

Supplied in pairs.

For Cu branching with C-sleeve, oval crimping.
Only one crimp is required for Cu branches with C-sleeve.











Through conductor mm²	Branching mm²	mm²	Name	Number of crimps	Net weight (kg)	Die holder required
25-300	25-300	Total: 245-425	B40C18	1	4,000	No
150-300	150-300	Total: 450-540	B40C21	1	4,083	No

## **Punch and Matrix**

For Al-terminals, indent crimping.
Use matrix holder **V1471**.
When crimping Al-terminals, two crimps are always required.



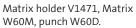


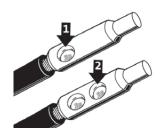












Crimp sequence

Stranded Al mm²	Matrix	Punch	Number of crimps	Matrix holder required	Punch holder required
800-1000	W60M	W60D	2	Yes	No
1200	W70M	W70D	2	Yes	No

# Lightweight and versatile designed pumps based on customer needs



#### PS710

The PS710 is an electrically driven pump for crimping with advanced control and monitoring of crimping progress. A flexible system for a wide range of applications with high performance and reliability for professional use. The pump is suitable for cabling manufacturers as well as for fitters working in the field. The PS710 can be used for all types of crimping or cutting. The PS710 has a power source for all types of crimping.

#### Technical data:

- possibility to use different pressure ranges, 0 700 Bar
- can be used with a PC on a computer network with a printer, does not apply to the PS710R
- oil flow at 20 bar: 0.6 litre/min (PS710D 1.2 litre/min)
- oil volume: 1.0 litre
- oil type: HYDREX MV 22 or similar
- crimps/battery charge: 120 crimps with Cu 150 mm<sup>2</sup>
- ambient temperature: -22 to 55°C
- protection: IP54
- mains operation 85-276VAC 50-60Hz
- Li-ion battery 28,8V, 3,0 Ah
- meet CE requirements: Safety of machinery 2006/42/EC, Electromagnetic compatibility 2014/30/EU, Low Voltage Directive 2014/35/EU, ROHS 2014/35/EU, WEEE 2012/19/EU
- weight approx. 12,4 kg
- compact dimensions 370 x 170 x 280 mm

The pump consists of three basic versions, each with customisation options.









### **PS710D**

• For cabling manufacturers. used with crimping station CS2500

#### **Properties:**

- unique electronic control system together with special PC software
- analysis and process monitoring/control, SPC, for tracking each crimp
- LCD Display with keypad for full status information of pump to the fitter
- communication with PC in real time provides instant quality control
- integrated communication via CAN with Elpress CS2500
- high flow hydraulic pump for fastest possible crimping
- can be used with PC on a computer network with printer

Name	Net weight (kg)	Length mm	Width	Height	
PS710D	12.4	370	170	280	



Pump PS710D









## **PS710E**



#### Properties

- small and light weight, which makes the product easy to use in every situation
- maximum performance, can be used both with Li-ion battery 28.8 V or 220V mains power
- LCD Display with keypad for full status information of pump to the fitter
- able to store and document crimps in the control system
- PC communication via USB
- to be used with crimp heads and cable cutters
- Elpress ergonomic handle ERGOCOM, with wireless communication can be selected for
- charger 230 VAC 50 Hz, 10.8-28.8 V, charging time 65 min

Name	Net weight (kg)	Length mm	Width	Height	
PS710E	12	370	170	280	













## PS710E251 and PS710E501\*

#### Contains:

- pump E-version
- cable
- hydraulic hose 2.4 m or 5.0 m with wireless communication ERGOCOM
- battery
- charger
- carrying strap
- 110-240VAC 50-60Hz

Name	Gross weight (kg)	Length mm	Width	Height	Note
PS710E251	24,5	370	170	280	PS710E pump with carrying strap. Ergocom hose 2.4 m and power cord EU, battery and charger
PS710E501	26,0	370	170	280	PS710E pump with carrying strap. Ergocom hose 5.0 m and power cord EU, battery and charger
PS710E501-US	26,0	370	170	280	PS710E pump with carrying strap. Ergo hose 5.0 m and power cord US, battery and charger
PS710E251-US	24,5	370	170	280	PS710E pump with carrying strap. Frgo hose 2.4 m and power cord

ERGOCOM hoses are not available in US/North American market.



US, battery and charger









## **(E** PS710R



#### **Properties:**

- pump control without electronic control system, relay controlled
- easily equipped without data communication
- without battery
- to be used with crimp heads and cable cutters
- Elpress ergonomic handle ERGO, with wired communication can be selected for
- 110-240VAC 50-60Hz

Name	Net weight (kg	) Length mm	Width	Height
PS710R	12	370	170	280













## PS710R250 and PS710R500\*

#### **Contains:**

- pump R version
- cable
- hydraulic hose 2.4 or 5.0 m with wired communication ERGO
- carrying strap



Name	Gross weight (kg)	Length mm	Width	Height	Note
PS710R250	23,0	370	170	280	PS710R pump with carrying strap.
					Ergo hose 2.4 m and power cord EU
PS710R500	24,5	370	170	280	PS710R pump with carrying strap.
					Ergo hose 5.0 m and power cord EU
PS710R250-US	23,0	370	170	280	PS710R pump with carrying strap.
					Ergo hose 2.4 m and power cord US
PS710R500-US	24,5	370	170	280	PS710R pump with carrying strap.
					Ergo hose 5.0 m and power cord US



## Accessories for PS710x











Operating handle for operation of pump PS710. Ergonomically designed handle that reduces the load on the operator at the workstation. ERGOCOM is controlled via Bluetooth and ERGO is wired. Available in different designs depending on the length of the hydraulic hose.

Pcs/ pack	Note
1	Hydraulic hose (2.4 m) for PS710E, with ERGO handle
1	Hydraulic hose (5 m) for PS710E, with ERGO handle
1	Hydraulic hose (2.4 m) for PS710R, with ERGO handle
1	Hydraulic hose (5 m) for PS710R, with ERGO handle
1	Hydraulic hose (2.4 m) for PS710R, with ERGOCOM handle (bluetooth)
1	Hydraulic hose (5 m) for PS710R, with ERGOCOM handle (bluetooth)
1	Foot pedal for PS710R
1	Foot pedal for PS710D and PS710E
1	Carrying strap for all PS710 versions
	pack  1 1 1 1 1 1 1 1 1

ERGOCOM hoses are not available in US/North American market



## **Hydraulic foot pump**









## P4000



#### **Properties:**

- unique version in high strength aluminium alloy
- ergonomic design
- smooth, anodised (electro-oxidised) surfaces easy to keep clean
- highly efficient, two-stage pump system with fast feed
- single foot-operated pressure relief (tool return) after automatic stop when crimping is complete
- 2.2 m hose with quick coupling
- standard pressure setting 630 bar/63 MPa, (max. setting 700 bar)
- safety valve for return at all pressures
- smooth transport mode for the hose
- special output for pressure monitoring

Name	Net weight (kg)	Length mm	Width	Height	
P4000	8,8	500	180	280	



# Notes



Notes



## Overhead line connectors

Overhead line connectors	.2
Twist connector for Cu lines 10 - 35 mm²	.2
Twist connector for Al lines 31 - 99 mm²	.2
Overhead line connectors 31 - 241 mm² for AlMgSi (Super B) and Al59	.3
Overhead line connectors 62 and 99 mm² for FeAl-line	.3
Crimp tool for Cu-terminals 10 - 240 mm², Al-terminals 16 - 25 mm² (-35 solid) mm² and C-sleeves 100 mm² (total)	.4
Accessories for crimping overhead lines with T2600, V600, V611 and PVX611	.6
Tools for Cu-terminals 10 - 400 mm², Al-terminals 16 - 400 mm² and C-sleeves 6 - 240 mm² (total area)	7
Accessories for crimping overhead lines with V1300, V1311-A and PVX1300	9
Tools for Cu terminals 10 - 800 mm², Al terminals 16 - 630 mm²and C-sleeves 6 - 300 mm²	10
Accessories for crimning overhead lines with V250	11



#### Overhead line connectors



#### **System Elpress**

System Elpress consists of terminals and tools that are designed and tested together to give a certified crimping result. This ensures that users will feel confident when using our systems, and that a secure connection will be achieved through the proper handling of our products.

#### Overhead line connectors

The Elpress program for overhead line connectors includes products for splicing copper lines, alloyed aluminium lines type AlMgSi (Super B) and Al59, as well as for FeAl lines. In addition to the wellknown copper and aluminium twist connectors, we also offer LFS and LFEAL contact crimp connectors that are crimped using the Elpress V600, V1300 and V250 systems. The LFS and LFEAL contact crimp connectors and Elpress System have been tested against requirements according to SS 4241241.

## Twist connector for Cu lines 10 - 35 mm<sup>2</sup>



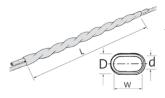






#### **Properties:**

- material copper
- for wire and line, see table
- the joint is rotated so that it is screwed in the opposite direction to the turn of the line
- tool: wrench



mm² (Cu)	Name	W mm	d	D	L	Marking	Number of twists	Single strand / Multi strand wire	Pcs/ pack
10	K10T	7,8	4	5,6	200	K10T XXXX	5	Multi strand wire	100
16	K16	11,1	5,8	7,4	250	K16 XXXX	3,5	Single strand	100
25	K25	13,8	7,1	8,9	300	K25 XXXX	3,5	Multi strand wire	100
35	K35	16,2	8,3	10,3	350	K35 XXXX	3,5	Single strand	100

## Twist connector for Al lines 31 - 99 mm<sup>2</sup>



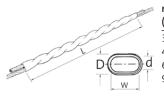








- material aluminium
- the joint is rotated so that it is screwed in the opposite direction to the turn of the line
- · tool: wrench



mm² (Cu)	Name	W mm	d	D	L	Marking	Number of twists	Pcs/ pack
31	1006	17,3	9,1	13,1	355	1006 XX	3,5	100
49	1009	21	11,0	15,4	465	1009 XX	4	100
62	1010AL	23	12,0	16,6	480	1010 XX	4	10
99	1014AL	28	14,7	19,7	660	1014 XX	4,5	10



# Overhead line connectors 31 - 241 mm<sup>2</sup> for AlMgSi (Super B) and Al59



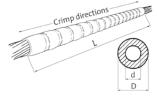






- material aluminium
- for splicing overhead lines
- meets the requirements of SS 4241241
- the connector tube is supplied with contact paste on the inside
- the conductor must be cleaned

mm² (Cu)	Name	d mm	D	L	Tool	Number of crimps	Marking	Pcs/ pack
31	LFS31	8	15	200	V600, V1300, V250	10	LFS31 16 ALMGSI XXXX AL-59	10
62	LFS62	11	16	200	V600, V1300, V250	10	LFS62 16 ALMGSI XXXX AL-59	10
99	LFS99	13,5	18,7	250	V600, V1300, V250	10	LFS99 20 ALMGSI XXXX AL-59	10
157	LFS157	17,5	24	400	V1300, V250	16	LFS157 26 ALMGSI XXXX AL-59	5
241	LFS241	21	30	450	V1300, V250	16	LFS241 32 ALMGSI XXXX AL-59	5



Crimp sequence, see nicture

2x10 crimps are required when crimping LFS99 with T2600, V600, V611 and PVX611.

## Overhead line connectors 62 and 99 mm<sup>2</sup> for FeAl-line









- outer Al-sleeve + inner steel sleeve for the centre strands
- meets the requirements of SS 4241241



mm² (Cu)	Name	d mm d1	D	D1	L	L1	Tool	Number of crimps	f Marking	Pcs/ pack
62	LFEAL62	14,3 4	16,0	6	310	95	V1300, V250, V600	10	LFEAL 62 6 XXXX	( 3
99	LFEAL99	13,5 5	18,7	8	360	95	V1300, V250, V600	10	LFEAL 99 20	3
									XXXX, LFEAL 99 8	8
									XXXX	

Elpress logotype is included on the marking. Marking XXXX = Year, week. Crimp sequence, see picture.





## Crimp tool for Cu-terminals 10 - 240 mm<sup>2</sup>, Al-terminals 16 - 25 mm<sup>2</sup> (-35 solid) mm<sup>2</sup> and C-sleeves 100 mm<sup>2</sup> (total)







#### **V600**





Tested and certified crimp head for crimping Cu-terminals, type KR/KS 10 mm<sup>2</sup>, KRF/KSF 16-150 mm², KRD/KSD 16-185 mm², KRT/KST 10-240 mm², Al-terminals 16-25 mm² (-35 solid), C-sleeves 6/6-50/50 mm², DIN 46235 10-95 mm².

Used in combination with foot pump P4000 or the electrically powered pump PS710 (battery powered version of PS710E is also available).

#### Properties:

- working pressure 63 MPa (630 bar)
- crimp force 55 kN
- robust fabric bag with room for 10 dies included

mm² (Cu)	mm² (Stranded Al)	mm² (Solid Al)	Name Crimp geometries	Net weight (kg)	Length mm	Width	Height
10-240	16-25	16-35	V600 Punch, Hexagonal, Oval	2,45	189	74	53

#### Crimp geometries















#### V611

Tested and certified hand-held tool for crimping Cu-terminals, type KR/KS 10 mm², KRF/ KSF 16-150 mm², KRD/KSD 16-185 mm², KRT/KST 10-240 mm², Al-terminals 16-25 mm² (-35 solid), C-sleeves 6/6-50/50 mm², DIN 46235 10-95 mm².

#### **Properties:**

- fast-feed to crimp engagement provides short crimp times
- crimp force 55 kN
- · delivered in sturdy textile bag

	mm² (Stranded AI)	mm² (Solid Al)	Name	Crimp geometries	Net weight (kg)	Length	Width	Height
10-240	16-25	16-35	V611	Punch, Hexagonal, Oval	2,6	425	115	53

#### Crimp geometries























Crimp geometries









Tested and certified battery-powered crimp tool for crimping Cu-terminals, type KR/KS 10 mm², KRF/KSF 16-150 mm², KRD/KSD 16-185 mm², KRT/KST 10-240 mm², Al-terminals 16-25 mm² (-35 solid), C sleeves 6/6-50/50 mm², DIN 46235 10-95 mm². PVX611DB has an extra battery.

#### **Properties:**

- protects against dirt and dust through the closed chassis
- ergonomic design ensures optimum balance in the user's hand
- swivel opening crimp fork
- · crimp force control using pressure monitoring
- one handed operation for easy work
- · LED lighting for easier work
- · fast-forward feeding for more efficient crimping
- display with information about the tool and service intervals
- tested together with Elpress TB dies and KB22/KB25
- crimp monitoring via display when the correct pressure/complete crimping is not achieved (warning light LED and signal)

mm² (Cu)	mm² (Stranded Al)	mm² (Solid Al)	Name	Crimp geometries	Net weight (kg)	Length mm	Width	Height	Note
10-150	16-25	16-35	PVX611	Punch, Oval, Hexagonal	5,50	414	116	75	Charger: 230VAC
10-150	16-25	16-35	PVX611DB	Punch, Oval, Hexagonal	5,85	414	116	75	Delivered with 2 batteries
10-150	16-25	16-35	PVX611-US	Punch, Oval, Hexagonal	5,50	414	116	75	Charger: 115VAC
10-150	16-25	16-35	PVX611-WOBC	Punch, Oval, Hexagonal	3,90	414	116	75	Without Battery/ Charger







#### T2600

Mechanical hand-held tool for crimping Cu-terminals, type KR/KS 10 mm², KRF/KSF 16-95 mm², KRD/KSD 16-120 mm², KRT/KST 10-120 mm², Al-terminals 16-25 mm² (-35 solid), and C-sleeves 6/6-50/50 mm², DIN 46235 10-95 mm².

#### **Properties:**

- · opening for easy die changes and for quick removal after jointing
- crimp force approx. 57 kN
- advanced force ratio for lowest handle force
- easy to work with in confined spaces
- only four die pairs are required to crimp 10-95 mm<sup>2</sup> Cu
- quick feed function
- · delivered in a metal box

mm² (Cu)	mm² (Solid Al)	Name	Crimp geometries	Net weight (kg)	Length mm	Width	Height
10-95	35	T2600	Punch, Hexagonal, Oval	1,9	445	185	52
10-120	35	T2600B	Punch, Hexagonal, Oval	4,12	445	185	52
10-120	35	T2600C	Punch, Hexagonal, Oval	4,12	445	185	52











# Accessories for crimping overhead lines with T2600, V600, V611 and PVX611

## Crimp dies for overhead line

For joints on overhead lines AlMgSi (Super B) and Al59, hexagonal crimping. Supplied in pairs.











Die pair TBNP 16-20.

mm² Overhead line	Name	Number of crimps	Net weight (kg)	Note
31 - 99	TBNP16-20	2x5, 2x10	0,135	Used for AIMgSI and FeAI, LFS31, LFS62 and LFS99

# Tools for Cu-terminals 10 - 400 mm<sup>2</sup>, Al-terminals 16 - 400 mm<sup>2</sup> and C-sleeves 6 - 240 mm<sup>2</sup> (total area)







#### V1300



Tested and certified crimp head for crimping Cu-terminals, type KR/KRT 10 mm², KS/KST 10 mm², KSF/KRD/KRT 16-400 mm², KSF/KSD/KST 16-400 mm², Al-terminals 16-400 mm² (-240 solid), DIN 46235 10-300 mm², C sleeves up to 240 mm² total area (C95-120). Used in combination with foot pump P4000 or the electrically powered pump PS710 (battery powered version of PS710E is also available).

#### Properties:

- working pressure 63 MPa (630 bar)
- crimp force 130 kN (13 tonnes)
- versatile and easy-to-use steel crimp head

mm² (Cu)	mm² (Stranded Al)	mm² (Solid Al)	Name	Crimp geometries	Net weight (kg)	Length mm	Width	Height
10-400	16-400	16-240	V1300	Punch, Hexagonal, Oval	3,46	263	88	75

#### Crimp geometries





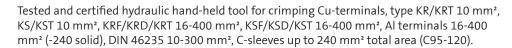








#### V1311-A



#### **Properties:**

- fast forward feeding
- crimp force 130 kN (13 tonnes)
- requires low handle force, approx 245 N at max force
- the fork can rotate 180°

mm² (Cu)	mm² (Stranded Al)	mm² (Solid Al)	Name	Crimp geometries	Net weight (kg)	Length mm	Width	Height
10-400	16-400	16-240	V1311-A	Punch, Hexagonal, Oval	4,3	588	150	74

#### Crimp geometries









## PVX1300/PVX1300DB

Tested and certified battery-powered crimp gun for contact crimping Cu-terminals, type KR/KRT 10 mm², KS/KST 10 mm², KRF/KRD/KRT 16-400 mm², KSF/KSD/KST 16-400 mm², Al-terminals 16-400 mm² (-240 solid), DIN 46235 10-300 mm², C sleeves up to 240 mm² total area (C95-120).











#### **Properties:**

- ergonomic design ensures optimum balance in the user's hand
- · crimp monitoring with warning light and signal when the correct pressure/full crimp is not achieved
- LED work lighting
- possibility of documentation of each crimp for unique service control
- crimp force 124 kN (13 tonnes)
- crimps/charging: 60-120 depending on size and temperature
- crimp time: 4-12s depending on size
- usage temperature -20°C to +40°C
- Li-Ion Makita, 5.0 Ah, 18V
- charger Li-Ion Makita, charging time 22 min 110-240VAC 50-60Hz
- DUAL: 10 300 mm<sup>2</sup>















mm² (Cu)	mm² (Stranded Al)	mm² (Solid Al)	Name	Crimp geometry	Net weight (kg)	Length mm	Width	Height	Note
10-400	16-400	16-240	PVX1300	Punch, Dual, Hexagonal, Oval	6,7	412	319	75	Delivered in standard case
10-400	16-400	16-240	PVX1300DB	Punch, Dual, Hexagonal, Oval	7,3	412	319	75	Delivered with 2 batteries
10-400	16-400	16-240	PVX1300-ADV	Punch, Dual, Hexagonal, Oval	14,2	412	319	75	Delivered in case advanced
10-400	16-400	16-240	PVX1300DB-ADV	Punch, Dual, Hexagonal, Oval	14,2	412	319	75	Delivered with 2 batteries and case adv.
10-400	16-400	16-240	PVX1300-WOBC-	Punch, Dual, Hexagonal, Oval	12,4	412	319	75	Delivered in case adv. and without Battery/
			ADV						Charger
10-300	16-400	16-240	PVX1300-US	Punch, Dual, Hexagonal, Oval	6,7	412	319	75	Delivered with battery and US-charger
10-300	16-400	16-240	PVX1300DB-US	Punch, Dual, Hexagonal, Oval	7,3	412	319	75	Delivered with 2 batteries and US-charger
10-400	16-400	16-240	PVX1300-WOBC	Punch, Dual, Hexagonal, Oval	4,8	412	319	75	Delivered without Battery/Charger



# Accessories for crimping overhead lines with V1300, V1311-A and PVX1300

## Crimp dies for AlMgSi (Super B) and Al59

Supplied in pairs. Hexagonal crimping. Use inner die holder V1316, and outer die holder V1318.











Outer die holder V1318, BNP dies, inner die holder V1316.

mm² Overhead line	Name	Number of crimps	Net weight (kg)	Die holder required	Note
31-62	B16NP	2x5	0,118	Yes	AlMgSi 31-62 mm², FeAL: 62 mm², ALUS 50 mm²
99	B20NP	2x5	0,126	Yes	AlMgSi 99 mm², FeAL: 99 mm²
157	13B26	2x16	0,420	No	Overhead line: 157 mm² (2x16 crimps)
241	13B32	2x16	0,408	No	Overhead line: 241 mm² (2x16 crimps)

## Crimp dies for overhead lines FeAl

Supplied in pairs. BxxFE dies are used for steel sleeves and BxxNP dies are used for Al-sleeves. Use inner die holder **V1316** and outer die holder **V1318**.











mm²	Die Fe	Die Al	Number of crimps
62	B6FE	B16NP	2x5
99	B8FE	B20NP	2x5

## Tools for Cu terminals 10 - 800 mm<sup>2</sup>, Al terminals 16 - 630 mm<sup>2</sup> and C-sleeves 6 - 300 mm<sup>2</sup>















Tested and certified crimp head for crimping Cu-terminals, type KR/KRT 10 mm², KS/ KST 10 mm², KRF/KRD/KRT 16-800 mm², KSF/KSD/KST 16-800 mm², Al-terminals 16-630 mm² (-300 solid), C sleeves 6/6-300/300 mm². Used in combination with foot pump P4000 or the electrically powered pump PS710 (battery powered version of PS710E is also available).

#### **Properties:**

- working pressure 63 MPa (630 bar)
- crimp force 250kN (25 tonnes)
- large crimp area, 10-800 mm²

mm² (Cu)	mm² (Stranded Al)	mm² (Solid Al)	Name	Crimp geometries	Net weight (kg)	Length mm	Width	Height
10-800	16-630	16-300	V250	Punch, Hexagonal, Oval	4,68	280	111	74

#### Crimp geometries







### Accessories for crimping overhead lines with V250

### Crimp dies for AlMgSi(Super B) and Al59

Supplied in pairs. For joints on overhead lines AlMgSi (Super B) and Al59, hexagonal crimping. Use inner die holder **V2506** and outer die holder **V2508**.











Die holder V2508, BNP dies, die holder V2506.

mm² Overhead line	Name	Number of crimps	Net weight (kg)
31-62	B16NP	2x5	0,118
99	B20NP	2x5	0,126
157	B26NP	2x8	0,140

### Crimp dies for overhead lines FeAl

Supplied in pairs. BxxFE dies are used for steel sleeves and BxxNP dies are used for Al-sleeves. Use inner die holder **V2506** and outer die holder **V2508**.











Die pair B16NP

mm²	Die Fe	Die Al	Number of crimps	
62	B6FE	B16NP	2x5	
99	B8FE	B20NP	2x5	







### Storage box L-Alu



Additional storage box for LV1300B and LV250, with space for accessories to crimp Elpress Al-terminals.

#### **Properties:**

- material plywood
- interior material polyethylene
- solid, moulded interior

Name	Net weight (kg)	Length mm	Width	Height
L-ALU	5,19	570	467	130









### Storage box LV250

Storage box with space for tool V250 and all necessary accessories to crimp Elpress Cu-terminals.

#### **Properties:**

- material plywood
- interior material polyethylene
- · solid, moulded interior

Name	Net weight (kg)	Length mm	Width	Height	
11/250	5.09	570	467	130	



### Shearbolt terminals for low and medium voltage

Shearbolt terminals	2
Shearbolt connectors 10 - 240 mm² (pre-assembled screw)	
Shearbolt connectors 10 - 630 mm² (reversible screw)	
Filler piece	
· Shearbolt terminals 10 - 630 mm² (pre-assembled screw)	
Shearbolt terminals 10 - 630 mm² (reversible screw)	5
Screw branch clamps	5
Counterhold tool	5



#### Shearbolt terminals up to 36 kV

Elpress shearbolt terminals are available as through connectors and terminals for:

- stranded and solid Al and Cu cables
- round cross section 10 to 630 mm<sup>2</sup>
- sector cross section 16 to 240 mm<sup>2</sup>



SL240N-12

The screws used are made of brass, that has the advantage of providing a lower friction compared to aluminium or steel screws. This makes it easier for the user to perform the installation. Installation tools can be a socket wrench or an impact wrench with torque force >100 Nm. We recommend that the fitter uses a counterhold tool to secure the shearbolt terminal more easily when tightening the screws.

#### Handles multiple area steps

The advantages of shearbolt terminals are that installation can be done easily without any heavy special tools and that they can manage several area steps in the same through connector/terminal, for example 10-50 mm². The user gets a reduced range of products and a flexible solution.

Shearbolt terminals are made of hardened aluminium with an alloy that allows both copper and aluminium cable to be joined, while preventing the occurence of galvanic corrosion. To reduce the number of terminal variants, screw terminals are supplied with reduction washers that allow the use of two different bolt sizes.

### Shearbolt terminals

Washers are always needed for connecting terminals with screw joints to busbars.



Use a socket wrench to tighten the screws. It is also possible to use an impact wrench.

#### **SC50R50S**

On the SC50R50S through connector, the screws are threaded into the sleeve and can handle all their cable areas on one thread length. SC50R50S is also suitable as a screen connector for 10-35 mm<sup>2</sup> Cu/Al.



Through connector SC50R50S with pre-assembled screws.

#### Labelling

Elpress marking of shearbolt terminals shows logo, product name, cable area (for stranded and solid conductors) and shearbolt installation order. The terminal palm is marked with screw size M-thread for bolted joints.

#### Cat. no. SL70R70S-10-12

SL = Shearbolt terminal

70R = max 70 mm² round conductor

70S = max 70 mm² sector conductor

10-12 = screw size 10 and 12 M thread

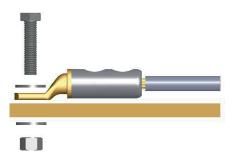
#### Cat. no. SC50R50S

SC = Shearbolt connector
50R = max 50 mm<sup>2</sup> round conductor
50S = max 50 mm<sup>2</sup> sector conductor

#### Screw and washer

The following apply for bright galvanized type nuts and screws, with strength class 8.8, used for connecting terminals with Cu and Al palms:

- Always use a torque wrench to be certain the right torque is achieved. Make sure it is calibrated at regular intervals according to the supplier's instructions.
- Use the recommended torque according to the screw manufacturer's instructions
- Always use a hard flat washer to reduce friction against the connection surface and the edge pressure, hardness min
- · Install as illustrated.



#### Tightening torque

Recommended tightening torque for wet lubricated screws and nuts of bright galvanized zinc type with strength class 8.8 and coarse threaded (normal thread), used with corresponding washer for connection of terminals with Cu- and Al palm. See table in Chapter 12.

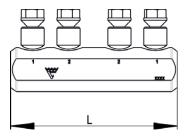


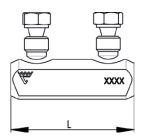
### Shearbolt connectors 10 - 240 mm² (pre-assembled screw)

#### **Properties:**

- screw material: brass, for minimum friction
- partition
- pre-assembled shear-off screws for easy handling
- voltage range: 1 kV
- meets the requirements of standard IEC 61238-1
- PEN is a filler piece for use when connecting the cable's copper screen









Through connector SC50R50S with threaded screws.

Cable type round mm²	Cable type sector mm²	Name	Screen conductor	Screen conductor (with filling piece)	d	D	L	Pcs/ pack
10-50	16-50	SC50R50S	10-35		10,7	17,3	62	10
35-95	50-95	SC95N	57-95	16-50 (SC95N/PEN)	16,8	23,0	69	1
70-150	70-150	SC150N	120-146	21-95 (SC150N/PEN)	19,5	23,0	80	1
95-240	120-240	SC240N		29-146 (SC240/PEN)	25,0	33,1	144	1

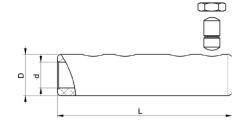
s = strip length

### Shearbolt connectors 10 - 630 mm² (reversible screw)

#### **Properties:**

- screw material: brass, for minimum friction
- partition
- reversible shear-off screws
- voltage range: 1 kV to 36 kV
- meets the requirements of standard IEC 61238-1
- PEN is a filler piece for use when connecting the cable's copper screen







Cable type round mm²	Cable type sector mm²	Name	Screen conductor	Screen conductor (with filling piece)	d	D	L	s	Pcs/ pack
50-95	50-95	SC95R95S	70-95	16-57 (SC95N/PEN)	16,0	27,0	114	58	1
95-150	95-120	SC150R95S	70-95		16,0	27,0	114	58	1
185-240	120-185	SC240R185S			20,0	33,5	134	64	1
300-400	240	SC400R240S			25,8	41,5	175	87	1
500-630		SC630R			33,0	49,0	210	106	1

s = strip length











### Filler piece

To splice the copper screen around the conductors, a filler piece is required that is placed between the screw and the screen. To select the correct filler piece, see table. Requires 2 filler pieces per splice.















#### SC95N PEN

Name	Screen conductor	Note
SC95N/PEN	16-57*	*16-50 mm² (SC95N) / 16-57 mm² (SC95R95S)
SC150N/PEN	21-95	
SC240/PEN	29-146	

### Shearbolt terminals 10 - 630 mm² (pre-assembled screw)

#### **Properties:**

- screw material: brass for minimum friction
- pre-assembled shear-off screws for easy handling
- voltage range: 1 kV for SL50N-10-12, SL95N-10-12 and SL240N-10-12, 1-36 kV for the others
- meets the requirements of standard IEC 61238-1
- the terminals are of the bimetallic type

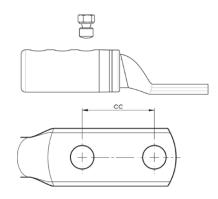


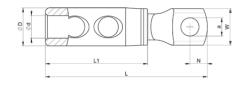












Cable type round mm	Cable type sector mm	Name	Screen conductor	Screen conductor (with filling piece)	Screw	W mm	d	D	N	сс	a	L	L1	t	S
10-50	10-50	SL50N-10-12	10-35		M10, M12	25,5	12	20/17,3	12,5		13	87	44	5,9	32
35-95	35-95	SL95N-10-12	57-95	16-50 (SC95N/PEN)	M12, M10	27,3	16	17/23	12,5		13	96	52,5	4,7	56
120-240	120-240	SL240N-10-12		29-146 (SC240/PEN)	M12, M10	31,5	25	38/33,1	15		13	144,	586	7,6	76
185-240		SL240R-12-16			M12, M16	30	20	33,5	15		12	134	79	7,9	75
185-240		SL240R-12X2-40			M12x2	31,5	20,0	33,5	15	40	12	174	79	7,9	75
300-400		SL400R-12X2-40			M12x2	42	25,8	41,5	15	40	12	210	103	9,6	99
630		SL630B-12X2-40			M12x2	55	33,0	49,0	17	40	12	218	115	11,7	108

t = palm thickness, s = strip length



### Shearbolt terminals 10 - 630 mm² (reversible screw)

#### **Properties:**

- screw material: brass for minimum friction
- reversible shear-off screws
- voltage range: 1 kV to 36 kV
- meets the requirements of standard IEC 61238-1
- the terminals are of the bimetallic type for best functionality



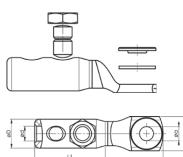


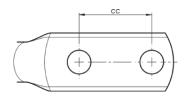












Cable type round mm²	Cable type sector mm²	Name	Screen conductor	Screw	W mm	d	D	N	сс	a	L	L1
10-70	25-70	SL70R70S-10-12	10-57	M10, M12	25,5	11,0	21	12,5		12	97	59
95-150	95	SL150R95S-10-12	70-95	M10, M12	26	16	27	12,5		12	116	75,5
95-150	95	SL150R95S-12X2-40	70-95	M12x2	30,5	16	27	15	40	12	172	75,5
185-240	120-185	SL240R185S-12-16		M12, M16	31,5	20	33,5	15		16	134	78,5
300-400	240	SL400R240S-16		M16	41,5	25,8	41,5	21		16	182	103
300-400	240	SL400R240S-20		M20	41,5	25,8	41,5	21		20	182	103
300-400	240	SL400R240S-00			41,5	33	49				187	103
500-630		SL500B-630B-12X2-40		M12x2	55	33	49	12	40	12	218	115
500-630		SL630R-1			55	33	49				243	129
500-630		SL630R-16		M16	55	33	49	30		16	241,5	129
500-630		SL630R-14		M14	55	33	49	30		14	243	129
500-630		SL630R-12X2-40		M12x2	55	33	49	15	40	12	243	129

t = palm thickness, s = strip length

### Screw branch clamps

Screw clamps for earthing applications. Enables branching of reinforcing bars with a stranded earth line in Cu or Fe.











Name	Pcs/pack
SBC50	1

### Counterhold tool

Counterhold tool for stable and safe installation of shearbolt terminals. Tools are made from durable material and are easily adjustable for terminals up to 400 mm².



Name	Pcs/pack
ISL2201	1



Notes



### Insulation kit for splicing

Heat shrink connectors - Shearbolt connectors with heat shrink insulation, 1kV1kV
Shearbolt connectors with heat shrink insulation, 1kV
Heat shrink connectors - Crimp connectors with heat shrink insulation, 1kV
Crimp connectors with heat shrink insulation, 1kV
Complete joint kit for crimping Al 50-240 mm². 1 kV



# Heat shrink connectors - Shearbolt connectors with heat shrink insulation, 1kV

#### Complete kits - click & heat

Complete kits for easy splicing of 1 kV plastic insulated 3-, 4- and 5-conductors.

The kit consists of shearbolt connectors with partition and heat shrink insulation. The connection between the cable and the through connector is done by means of screws in a shearbolt terminal. Insulation is done with suitable heat shrink insulation.



Kit for 5-conductor cable.

#### This is how it works:

- The cable conductor is spliced with a shearbolt connector fitted with torque screws that shear when the correct torque is reached.
- The different phase conductors are insulated with heat shrink insulation of polyolefin.
- The insulation is internally coated with adhesive that melts when heated
- When the adhesive is pressed forward out of the shrunken body, the installation is finished and the joint becomes entirely watertight.
- Sector-shaped conductors do not need to be rounded.
- With the attached filler piece you can easily splice a 3+1 cable to a 4G cable.



Conductors are spliced using shearbolt connectors Tighten the screw using a socket wrench, until it shears in the cut-off groove.



Shrinkage of the insulation is achieved by using heat.

### Shearbolt connectors with heat shrink insulation, 1kV

Kit for splicing 3-, 4- and 5-conductor cable according to IEC 60228. For both Cu/Al solid and stranded conductors.











Cable type round mm²	Cable type sector mm²	Name	Note
10-50	16-50	KSC50N-1-4HS	1 outer jacket, 4 SC50N, 4 inner tubes and abrasive cloth.
10-50	16-50	KSC50N-1-5HS	1 outer jacket, 5 SC50N, 5 inner tubes and abrasive cloth.
35-95	50-95	KSC95N-1-4HS	1 outer jacket, 4 SC95N, 4 inner tubes and abrasive cloth.
35-95	50-95	KSC95N-1-5HS	1 outer jacket, 4 SC95N, 5 inner tubes and abrasive cloth.
70-150	70-150	KSC150N-1-4HS	1 outer jacket, 4 SC150N, 4 inner tubes and abrasive cloth.
70-150	70-150	KSC150N-1-5HS	1 outer jacket, 5 SC150N, 5 inner tubes and abrasive cloth.
95-240	95-240	KSC240N-1-4HS	1 outer jacket, 4 SC240N, 4 inner tubes and abrasive cloth.
95-240	95-240	KSC240N-1-5HS	1 outer jacket, 5 SC240N, 5 inner tubes and abrasive cloth.

# Heat shrink connectors - Crimp connectors with heat shrink insulation, 1kV

#### Complete kits - crimp & heat

Connector kit for splicing 1 kV plastic insulated 4G or 5G cable of stranded Al conductor 16-25 mm², and for splicing or transitioning to Cu 10-16 mm² class 1, 2, 5 or 6.

The kit consists of heat shrink insulation and joint sleeves, which can take a wide range of cable. The concept includes a through connector for transition between the copper cable and the aluminium cable. Used to splice Al cable for lighting and services.

You only need one tool to crimp through connectors and you can choose between a hand tool or a crimp die with an open matrix that fits in Elpress 6-tonne tool systems.

#### This is how it works:

- The conductors are spliced with sleeves AS1625, AKS1625-1016 or KSF16.
- Use Elpress pliers EW EW1025, or TB die pair TBKA9-11.5 with 600 system.
- The inner and outer tubes of the insulation are dimensioned which means they can be easily applied and then shrunk using heat.
- The length of insulation is adapted to safely cover the cable's primary and sheath insulation
- The insulation is thick-walled and coated with a lot of adhesive that makes the joint waterproof and robust in the face of external influences.
- Meets the requirements in SS-EN 50393, EBR KJ 24:89 The through connectors are tested and approved according to EN 61238-1.







Kit for 5G cable.



Shrinkage of the insulation is achieved by using heat.

### Crimp connectors with heat shrink insulation, 1kV

Kit for splicing 4- or 5G cable of stranded Al-conductor 16-25 mm² according to IEC60228, and for splicing or transitioning to Cu 10-16 mm² class 1, 2, 5 or 6. Meets the requirements in SS-EN 50393, EBR KJ 24:89











Stranded Al mm²	mm² (Cu)	Name	Tool	Pcs/ pack	Note
16-25	10-16	KHS-AKS1025-4	V600, EW1025	4	Contents: 1 outer jacket, 4 AKS16-25-1016, 4 inner tubes and abrasive cloth.
16-25	10-16	KHS-AKS1025-5	V600, EW1025	5	Contents: 1 outer jacket, 5 AKS16-25-1016, 5 inner tubes and abrasive cloth.
16-25		KHS-AS1625-4	V600, EW1025	4	Contents: 1 outer jacket, 4 AS1625, 4 inner tubes and abrasive cloth.
16-25		KHS-AS1625-5	V600, EW1025	5	Contents: 1 outer jacket, 5 AS1625, 5 inner tubes and abrasive cloth.

### Complete joint kit for crimping Al 50-240 mm<sup>2</sup>, 1 kV

Joint kit for splicing Al conductors 50-240 mm<sup>2</sup>. MultiCrimp Punch crimping for low voltage applications (1 kV) according to IEC 60228, with the 1300-system.











mm²	Cable type round mm²	Cable type sector mm²	Name	Note
50-95	50-95	50-95	KHS-AS5095-1-4	1 outer heat shrink tube, 4 connectors, 4 inner heat shrink tube, 1 cleaning kit and manual
120-150	120-150	120-150	KHS-AS120150-1-4	1 outer heat shrink tube, 4 connectors, 4 inner heat shrink tube, 1 cleaning kit and manual
185-240	185-240	185-240	KHS-AS185240-1-4	1 outer heat shrink tube, 4 connectors, 4 inner heat shrink tube, 1 cleaning kit and manual



Notes



### Cutting and insulation stripping tools

Cutting and stripping tools	
Tool for cutting and stripping insulation 0.02 - 16 mm²	3
EMBLA / EMBLA (right-angled handles)	
Accessories EMBLA	4
Tool for stripping insulation on cables Ø 2.5 - 40 mm	5
TOR and ODEN	5
Tool for cutting and stripping conductors 0.5 - 6 mm² and cutting up to $\emptyset$ 20 mm²	6
SCT001, CT10, CT20 and UP-B41	6
Tool for cutting cable up to Ø 80 mm	7
HKS34, HKS50 and Blade for HKS50	7
HKS62, HKS80, HKS35F and HKS60F	8
Stripping tool for removing layers of PEX cables Ø 10 - 50 mm	9
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Stripping tool for PEX insulation on medium voltage cable	10
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### **Cutting and stripping tools**

#### **Stripping tools**

To strip insulation from cable there are, for example, the Embla, Tor and Oden ranges, that strip from approx. 0.02 mm² up to approx. \$\phi\$ 40 mm cable. The tools are characterised by high precision, ergonomic adaptation, user friendliness and reliability.



EMBLA, ergonomically adapted cutting and stripping tool.



The ODEN stripping tool can be used in one easy operation.

#### **Cutting tools**

Tools are available in several variants for cutting Cu and Al cable up to approx.  $\emptyset$  85 mm. In addition to the simplest mechanical tools that cut cable up to  $\emptyset$  20 mm, there is a wide range of hydraulic tools for cutting cable up to approx.  $\emptyset$  85 mm.

The size of the conductor that the tools can handle mainly depends on the type of conductor to cut; whether it is a low or medium voltage cable and whether it is, for example, a solid Class 1, flexible Class 5 or stranded Class 2 conductor. The hardness of the conductor's material also affects the results. For example, the PCT54C is capable of cutting type Cu FKKJ 4 x 95 mm² low voltage cable or Al AKKJ 4 x 240 mm² or medium voltage cable type Al AXLJ 3 x 150 mm². The insulation takes some space on the medium voltage cable, which is why it can be restrictive.



Cutting tool PCT54C.

#### Tools for PEX cable

For preparation of medium voltage cables, 12-24 kV, and removal of conducting layers and PEX insolation, tools FBS1722 and FBS1723 are available.



Stable FBS1722 stripping tool delivers better and smoother results than most other stripping tools.



### Tool for cutting and stripping insulation 0.02 - 16 mm<sup>2</sup>

#### **Properties:**

- cutting capacity (EMBLA S, standard cassette): single core conductor 1.5 mm² (AWG 16), - multi-stranded conductor 10 mm² (AWG 8)
- Versatility: The simplicity and ability to change the stripping cassettes allow stripping of most modern insulation materials. The operating range is the widest found in this type of tool.
- Precision: Fine-adjustment allows stripping of even thin insulation without conductor damage. When stripping is complete, the stripping blades are opened and kept open during the blade return so that the cable can be removed from the tool, easily and without scratches.
- Ergonomics: Specially formulated shape, soft rubber inserts in the fixed handle, low friction, optimized handle width, angled head and low weight ensures comfortable work with the lowest load.
- Long life: Stripping cassettes and cutting blades can be replaced for long tool life
- Reliable: Tested for over 150,000 cycles. Made of high strength plastic with double strength compared to standard PA6 (nylon).



### **EMBLA**

Stripping and cutting tools.

Embla is available in 3 versions:

#### EMBLA S,

- $\bullet$  with stripping blade, straight blades for PVC insulations 0.02-10 mm  $^2$  (AWG 34-8) EMBLA V,
- with stripping blade, V-shaped blades, for harder insulations 0.1-4 mm<sup>2</sup> (AWG 28-12) **EMBLA 16**,
- with stripping blade, oval-shaped blade, for 4-16 mm² (AWG 12-5)

mm²	AWG	Name	Net weight (kg)	Length mm	Width	Height
0,02-10	34-8	EMBLA S	0,184	191	123	20
0,1-4	28-12	EMBLA V	0,18	191	123	20
4-16	12-6	EMBLA16	0,182	191	123	20



### **EMBLA** (right-angled handles)

Stripping and cutting tools with right-angled handles.

mm²	AWG	Name	Net weight (kg)	Length mm	Width	Height
0,02-10	34-8	EMBLA RA S	0,136	144	168	23
0,1-4	28-12	EMBLA RA V	0,136	144	168	23
4-16	12-6	EMBLA RA 16	0,136	144	168	23











EMBLA S-cassette



**EMBLA V-cassette** 



EMBLA 16-cassette

### **Accessories EMBLA**

EMBLA and EMBLA RA can be supplemented with the following stripping cassettes for different types of cable sizes and insulation. The cassettes can be quickly and easily changed.

#### EMBLA SP S

- with stripping blade, straight blades, for PVC insulation 0.02-10  $\rm mm^2$  (AWG 34-8)  $\rm EMBLA~SP~V$
- $\bullet$  with stripping blade, V-shaped blade, for harder insulation 0.1-4 mm² (AWG 28-12) EMBLA SP 16
- with stripping blade, oval-shaped blade, for 4-16 mm² (AWG 12-5)

mm²	AWG	Name	Net weight (kg)
0,02-10	34-8	EMBLA SP S-CASSETTE	0,002
0,1-4	28-12	EMBLA SP V-CASSETTE	0,002
4-16	12-6	EMBLA SP 16-CASSETTE	0,002



### Tool for stripping insulation on cables Ø 2.5 - 40 mm





Three stripping functions.

### **TOR**

Cable stripping tool for cable insulation Ø 4.5 - 40 mm

#### **Properties:**

- two interchangeable hooks for different cable diameters
- locked positions for cross, longitudinal and spiral sections
- stripping: cable diameters 4.5 40 mm, insulation thicknesses up to 4.5 mm

Max ø conductor	Name	Net weight (kg)	Length	Width	Height
4,5-40	TOR	0,206	150	42 (52)	31 (31)
			(167)		

Dimensions: Small hook / (large hook)







ODEN strips signal, telephone, audio, instrument, data cable etc.

### **Accessories TOR**

mm²	AWG	Name	Net weight (kg)
4,5-40	11-1	TOR SP KNIFE	0,001
20-40	4-1	TOR SP BIG HOOK	0,04
4,5-25	11-3	TOR SP SMALL HOOK	0,04

#### **ODEN**

Stripping tool to strip insulation from cables Ø 2.5 - 11 mm. Used for signal, telephone, audio, instrument, data cable and similar.

#### **Properties:**

- fine-adjustment and adjustment are performed with a nine-position setting wheel
- stripping: cables  $\emptyset$  2.5-11 mm, up to 1.0 mm thick outer layers
- flexible: strips or removes the outer layer on most multi-conductors and optical cables up to  $\emptyset$  11 mm

Max ø conductor	Name	Net weight (kg)	Length	Width	Height
2,5-11	ODEN	0,043	91	40	19



### **Accessories ODEN**

Name	Net weight (kg)
ODEN SP KNIFE	0,0001



# Tool for cutting and stripping conductors 0.5 - 6 mm<sup>2</sup> and cutting up to Ø 20 mm<sup>2</sup>









#### **SCT001**

Stripping and cutting tool for cutting and stripping conductors 0.5 - 6 mm<sup>2</sup>.

#### **Properties:**

- material: high-quality steel
- cuts 0.5-6 mm² (20-10 AWG)
- strips 0.5-6 mm² (20-10 AWG)
- light and versatile
- lockable setting

mm²	Max ø conductor	AWG	Name	Net weight (kg)	Length mm	Width	Height
0,5-6	2	10-20	SCT001	0,102	140	65	10



#### **CT10**

Cable cutter for cutting cable up to approx. Ø 10 mm.

#### Properties:

- cuts Cu and Al cable up to approx. Ø 10 mm
- not intended for cutting steel
- small and manageable
- tempered forged steel cutting blade
- design of the blade inserts provides a clean cut surface

Max ø conductor	Name	Net weight (kg)	Length mm	Width	Height
10	CT10	0,16	165	50	15









#### **CT20**

Cable cutter for cutting cable up to approx. Ø 20 mm².

#### Properties:

- cuts Cu and Al cable up to approx. Ø 20 mm
- not intended for cutting steel
- sturdy and comfortable handle grip
- tempered forged steel cutting blade
- design of the blade inserts provides a clean cut surface

	ax ø nductor	Name	Net weight (kg)	Length mm	Width	Height
20	)	CT20	0,471	240	78	21









#### **UP-B41**

Cable cutter for cutting cable up to approx. Ø 15 mm.

#### Properties:

- cuts multi-stranded Cu and Al conductors.
- not intended for cutting steel
- small and manageable
- high quality, professional tool
- design of the blade inserts provides a clean cut surface
- minimal power requirement

mm²	Max ø conductor	AWG	Name	Net weight (kg)	Length mm	Width	Height
95	15	4/0	UP-B41	0,357	255	25	70



### Tool for cutting cable up to Ø 80 mm

Not for steel wire and wire reinforced cable.











Cable cutter for cutting cable up to approx. Ø 34 mm.

#### **Properties:**

- cuts normal types of Cu and Al cable
- cuts alloyed AC overhead line and BLX up to a diameter of 241 mm² (not FeAl)
- comes with durable textile bag

Max ø conductor	Name	Net weight (kg)	Length mm	Width	Height	
34	HKS34	0.908	350	185	60	











Cable cutter for cutting cable up to approx. Ø 50 mm.

Cutting tool for steel and Cu/Al cable with interchangeable blades. HKS50 is supplied with universal blade UFE1 for Al/Cu, FeAl line, flexible steel line and anchoring cables.

Comes in a sturdy textile bag with instructions for use and cleaning tool for threads.

#### **Properties:**

- scissor-motion for the best cut surface on the cut cable
- single-handed operation facilitates installation
- reliable and proven ratchet function
- move blades easily and quickly by releasing two screws
- clearly marked usage area on the blades

Max ø conductor	Name	Net weight (kg)	Length mm	Width	Height	
50	HKS50	1.443	350	185	60	_









UFE2 UFE1



### **Blade for HKS50**

Max ø conductor	Name	Net weight (kg)	Application
50	UFE2	0,13	For Cu/Al, flex. steel line, INOX, FeAl line, screw, anchoring cable, piano wire and solid Cu overhead line.
50	UFE1	0,104	For Cu/Al, flex. steel line, INOX, FeAl line, screw, anchoring cable and solid Cu overhead line.
30	UFEB	0,111	For Cu/Al, flex, steel line, FeAl line and mainly used for cutting data/signal cable.
50	UFE	0,104	For Cu/Al cable, clean cut surface and adapted for most flexible cables. Not suitable for cutting steel.









### HKS62

Cable cutter for cutting cable up to approx.  $\emptyset$  62 mm.



#### **Properties:**

- cuts normal types of Cu and Al cable
- cuts alloyed AC overhead line and BLX up to a diameter of 241 mm<sup>2</sup> (not FeAl)
- comes with durable textile bag

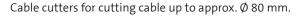
Max ø conduct	or Name	Net weight (kg)	Length mm	Width	Height	
62	HKS62	2,005	350	185	60	













#### Properties:

- cuts normal types of Cu and Al cable
- comes with durable textile bag

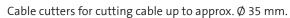
Max ø conductor	Name	Net weight (kg)	Length mm	Width	Height	
80	HKS80	3,199	585	215	65	







### HKS35F





#### Properties:

- cable cutter
- cuts normal types of Cu and Al cable
- comes with durable textile bag

Max ø conductor	Name	Net weight (kg)	Length mm	Width	Height
35	HKS35F	1,59	330	185	60







### HKS60F

Cable cutters for cutting cable up to approx.  $\emptyset$  60 mm.



#### **Properties:**

- cable cutter
- cuts normal types of Cu and Al cable
- comes with durable textile bag

Max ø conducto	Name r	Net weight (kg)	Length mm	Width	Height	
60	HKS60F	3 421	470	185	60	_



### Stripping tool for removing layers of PEX cables Ø 10 - 50 mm









### FBS1722

Stripping tool for fixed, outer conductive layers on PEX cables.

#### **Properties:**

- FBS1722 contains the stripping tool, 100 g silicone paste and instructions for use, in a padded plastic box
- insulation can be stripped from Ø 10 to Ø 50 mm, which corresponds to up to 800 mm² at 12 kV, 630 mm² at 24 kV and 500 mm² at 36 kV
- the depth of cut is set between 0 and 1.2 mm in 0.1 mm increments using a knoh
- stripping can be done up to 25 mm from the edge of the screening and the PEX surface becomes very even
- the blade is hardened, min HRC 55, and specially ground, as well as very easy to replace

Max ø conductor	Name	Net weight (kg)	Length mm	Width	Height
10-50	FBS1722	0,813	235	200	55







FBS1722 comes with box, silicone paste and instructions for use.

### **Accessories for FBS1722**

Spare parts for the FBS1722 stripping tool. RS = spare blade and SP = silicone paste.

Name	Net weight (kg)		
FBS1722RS	0,006		
FBS1722SP	0,115		



### Stripping tool for PEX insulation on medium voltage cable









### FBS1723

Stripping tool for stripping PEX insulation on medium voltage cable.

#### **Properties:**

- FBS1723 contains the stripping tool, 100 g silicone paste and instructions for use in a padded plastic box
- the tool is easy to use rotate the tool with the handle
- stripping can be done from Ø 15 to 52 mmm which corresponds to cable 12 kV 50-1000 mm², 24 kV 25-1000 mm², 36 kV up to 630 mm² and 52 kV up to 500 mm²
- depth of the blade can be adjusted from 0 to 15 mm
- unlimited stripping length
- the cutting blade is available as a spare part
- adjustable feed in 5 positions, the blade is hardened, min HRC 55, and specially ground and very easy to replace



FBS1723 comes with box, silicone paste and instructions for use.

Max ø conductor	Name	Net weight (kg)	Length mm	Width	Height
15-52	FBS1723	1,072	275	220	65

### **Accessories for FBS1723**

Spare parts for the FBS1723 stripping tool. RS = spare blade and SP = silicone paste.

Net weight (kg)		
0,001		
0,115		



### **Battery-powered cable cutters**









### PCT54C





Cutting tool PCT54C.

Simple and safe electric cable cutters for cutting copper and aluminium cable.

- electric cable cutters for cutting copper and aluminium cable
- not intended for cutting steel
- maximum cutting diameter 54 mm, which for the following cable types corresponds to:
- 1 kV Cu type FKKJ 4 x 95 mm²
- Al type AKKJ 4 x 240 mm²
- Al type SE-N1XV 4G x 240 mm²
- 12 kV Al type AXLJ 3 x 150 mm²
- tool performs a scissor motion when cutting that provides an optimal cut surface
- built-in fuse as a surge protector
- CE-marked
- comes with bag, 14.4V 3.0Ah Li-ion battery and charger

Max ø conductor	Name	Net weight (kg)	Length	Width	Height	Note
54	PCT54C	8,6	450	120	105	Charger: 230VAC
54	PCT54C-US	8,6	450	120	105	Charger: 115VAC
54	PCT54C-WOBC	8,0	450	120	105	Without Battery/ Charger



### Hydraulic hand-held cable cutters and cable cutter heads



KL2585 cutting head

### KL2585

Hydraulic cable cutting head for copper and aluminum cable.

#### **Properties:**

- cuts up to  $4 \times 150 \text{ mm}^2$  Cu conductor and  $\emptyset$  85 mm Al, paper and plastic insulated conductors (there may be restrictions depending on the conductor's design and materials)
- cuts steel-reinforced cables, but not steel wire-reinforced cables
- used with foot pump P4000 or electrically powered pump PS710
- supplied in plywood box

mm²	Max ø conductor	AWG/ MCM	Name	Net weight (kg)	Length mm	Width	Height
630	85	1000	KL2585	10,35	250	377	75







HKL40, KL40. HKL55 and KL55



### HKL40/KL40, HKL55/KL55, HKL85/KL85

A series of cable cutters covering almost all needs when cutting power cables and lines. The cutter heads (KL) are operated with one of Elpress' pumps, e.g. foot pump P4000 or pump PS710.Not for steel wire and wire reinforced cable.

Max ø conductor	Name	Net weight (kg)	Length	Width	Height
40	HKL40	6,058	645	165	85
55	HKL55	4,133	560	140	55
85	HKL85	7,6	745	190	72
40	KL40	4,7	285	105	85
55	KL55	3,5	300	110	55
85	KL85	6,7	385	170	75

#### **Technical Specifications**

### HKL40/KL40/HKL55/KL55/HKL85/KL85

Hydraulic manual cutters	HKL40	HKL55	HKL85
Hydraulic cutting heads	KL40	KL55	KL85
Max. opening	Ø 40	Ø 55	ø 85
Max. cutting force, KN	88	43	55
Max. cutting capacity, examples.			
copper cable	Ø 40	400 (500) mm²	630 mm²
Cu annealed solid conductor		Ø 20	
Cu rod	Ø 30		
Aluminium cable	Ø 40	3x240+95 mm²	3x240+95 mm² 630 (800 mm²)
Al annealed solid conductor		Ø 25	
ACSR	Ø 40		
Al bar	Ø 40		
Telephone cable		Ø 55	
Steel wire (<180daN/mm²)	Ø 11		
Steel rod	Ø 18		

Notes



### Deep earthing

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Deep earthing system FSHD	
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Driving sleeves for FS and FSHD deep-earthing systems	
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### Deep earthing system

#### **Benefits**

Elpress systems for deep earthing have many advantages:

- The ground line has no joints no risk of contact failure.
- Tip and leading rod are manufactured for a large area range; 16 95 mm<sup>2</sup>.
- Can be used for different types of line e.g. soft or hard copper, galvanized or stainless steel.
- When copper line is used, the extension rods act as sacrificial anodes and provide good protection against corrosion.
- Full control over the line and tip is maintained and it is possible to continuously measure the earthing resistance.
- Thanks to the few components of the system, driving is both uncomplicated and reliable.
- The system has a low overall weight compared to other systems.
- The overall cost of a complete earth connection will be lower than that made in a conventional manner.
- Rod length 800 mm for best ergonomics.



Radio base station is an application for Elpress deep earthing systems.

#### Theory

Elpress' approach is an earthing system without joints. The electrode consists of a copper line that is driven down by a system consisting of 0.8 m long steel rods. A hardened steel tip paves the way for the ground line that is inserted into the steel tip and clamped by the leading rod. For every 0.8 m length of driven line and rod, an extension rod is pushed into the preceding rod. Because the earthing resistance can be continually measured at the other end of the line, one can stop driving when a suitable value is reached and the last extension rod is then withdrawn

Driving takes place with the aid of a power hammer with an adapted driving sleeve or a sledge hammer and impact sleeve FS62C.



Impact sleeve FS62C

#### Service life

Elpress deep-earthing system consists of steel rods and a copper line. The steel rods act as sacrificial anodes with relatively high corrosion current against the copper electrode (cathode).

This combination of metal both stabilises and equalises its surroundings. If a lead sheathed cable is located in the soil a few metres from the earth connection, the corrosion current from the lead anode to the Fe+Cu earth connection is 40% less than the value of an earth connection without FE rods. In other words, the lead sheath has a theoretical service life of almost double.

Experiments have shown that after a few months, the corrosion current drops to virtually zero. The explanation is that a special layer – the polarization layer – is formed next to the electrode. The current is thereby reduced and thus also the corrosion. The amount of the reduction depends on the properties of the soil. An AC load should theoretically counteract the corrosion. This means that the practical service life is often longer than the theoretical.



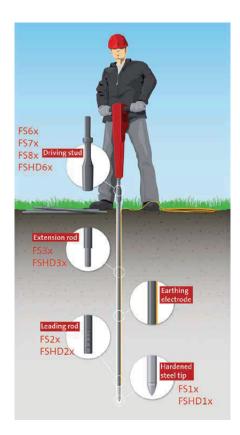
### Structure and operation of the system

## Elpress systems consist of the following 5 parts:

- · hardened steel tip
- leading rod
- extension rod
- driving sleeve/impact sleeve
- earth line (not supplied by Elpress)

#### This feature is simple

- the earth line is inserted into the hardened steel tip and clamped by the leading rod.
- the extension rods are fitted with a guide pin, which during work is pushed into the preceding rod.
- earthing resistance can be measured continuously. When the appropriate value is reached, driving is interrupted and the last extension tube is withdrawn (and can therefore be reused).



#### **Practical advice:**

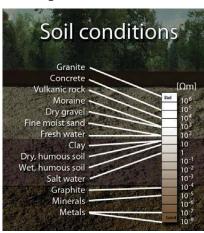
1. Plan the earth connection.
What are the soil conditions?
Normal and loose soil - steel pipe Ø 17
mm is sufficient.

Hard and rocky soil- steel rod  $\emptyset$  21 mm (type HD) should be used. Is a parallel earth connection possible?

- 2. Determine the soil resistivity. Based on that and the maximum earthing resistance it can be estimated how much line is needed.
- 3. Start the driving by locking the line into the hardened tip with the leading rod. 16 mm² line should be folded double before the tip is attached. In loose soil, a sledgehammer and impact stud is sufficient. In heavier soil/at greater depth, a power hammer should be used. NOTE: Do not rotate the driving sleeve during the work
- 4. Make sure that the line maintains the same speed down into the soil as the rod. If it does not, there are the following possibilities:
- more rods than line required; the rod may have been bent and then runs parallel to the surface of the soil and the line does not follow the pipe through the ground.
- the rod continues and the line stops; the line has come loose and can be pulled up or the tip has folded.
- both stop; stone or rock has been found. If the stone does not shatter after about 10 seconds, you must start over.

In the event of interrupted driving, start again at a distance at least 1.5 times the line length already driven down.

5. Preferably measure the earthing resistance continuously while driving down the earth line. Arrange a parallel earth connection if necessary. Splicing and branching of the earth line is contact crimped by means of Elpress through connectors or branching sleeves and tools.



1. Resistivity in different soil conditions.



2. Measurement of ground resistance.



3. The earth line is locked to the hardened steel tip with the leading rod.



Driving starts.



### Deep earthing system FS

Elpress deep-earthing system FS consists of 3 parts. Tip (FS1x), leading rod (FS2x) and extension rod (FS3x).









### FS1x





mm²	Name	(kg)	Length	Pcs/pack	
16-70	FS11	0,176	135	5	
70-95	FS12	0,176	135	5	













Steel leading rod, equipped with a grooved notch to lock the earth line effectively. For loose and normal soil conditions.

Ø	Name	Net weight (kg)	Length	Pcs/pack
17	FS21	0.644	800	5









FS31



Steel extension rod, HD, equipped with a guide pin that fits inside the preceding rod. For loose and normal soil conditions.

ø	Name	Net weight (kg)	Length	Note	Pcs/pack
17	FS31	0.804	870	Length incl. driving can	5



### Deep earthing system FSHD

Elpress deep-earthing system with thicker rods for tougher soil conditions FSHD (HD: "Heavy Duty") consists of 3 parts. Tip (FSHD1x), leading rod (FSHD2x) and extension rod (FSHD3x).









### FSHD11



Hardened steel tip intended for hard and rocky ground. Used in conjunction with leading rod FSHD23.

mm²	Name	Net weight (kg)	Length	Pcs/pack
25-70 (95)	FSHD11	0.254	153	5









### FSHD23



Steel leading rod, equipped with a grooved notch to secure the earth line effectively. Designed for hard and rocky ground.

Ø	Name	Net weight (kg)	Length	Pcs/pack
21	FSHD23	1,088	800	5









### (F FSHD31



Steel extension rod, HD, equipped with a guide pin that fits inside the preceding rod. Robust rod intended for hard and rocky ground.

Ø	Name	Net weight (kg)	Length	Note	Pcs/pack
21	FSHD31	1,224	870	Length incl. driving cap	5



### Accessories for Elpress deep-earthing systems









# **(E** Withdrawal handle FS



Pull handle with grip-friendly design that facilitates withdrawal and allows reuse of the last extension rod FS3x/FSHD3x.

Ø	Name	Net weight (kg)	Length mm	Width	Pcs/pack
18,5/22,5	FS41	0,403	230	60	1









## (E Impact sleeve FS



Impact sleeve used when driving using a sledgehammer, or similar, to prevent deformation of the rod end. Specially designed for use with FS21 or FS31 rods.

Name	Net weight (kg)	Length mm	Width	Pcs/pack
FS62C	1,018	110	45	1









# ( Impact stud FS



Impact stud used when driving using a sledgehammer, and similar, to prevent deformation of the rod end.

Name	Net weight (kg)	Length mm	Width	Pcs/pack
FS61	0,081	58	22	1









# ( Impact sleeve FSHD



Impact sleeve used when driving using a sledgehammer, or similar, to prevent deformation of the rod end. Specially designed for use with FSHD23/FSHD31

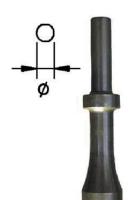
Name	Net weight (kg)	Length mm	Width	Pcs/pack
FSHD62C	0,93	110	45	1











## Driving sleeves for FS and FSHD deep-earthing systems

- specially designed for use with the FS21 and FS31 rods
   protects the end of the rod from deformation when driving with a power hammer
   for FS-type rods with an external diameter of 17 mm
- marked with the catalogue number

Name	Tool	Shaft ø	Flange length	Total length	Pcs/ pack	Note
FS71C	BBD 12 TS, BHB 14	19	108	305	1	HD version also available for rods with 21 mm outer diameter
FS72C	BBD 12 T-01, Cobra 148/248, Pico 20, RH 571 5L/5LS, RH 658 5L/5LS, BHB 25	22	108	305	1	HD version also available for rods with 21 mm outer diameter
FS73C	TEX 23E, TEX 25E	25	108	305	1	HD version also available for rods with 21 mm outer diameter
FS81C	TE 52, TE 72, TE 92	18		265	1	HD version also available for rods with 21 mm outer diameter
FS83C	USH27	29		310	1	HD version also available for rods with 21 mm outer diameter
FS85C	BHF 25, BHF 30S	27	80	302	1	HD version also available for rods with 21 mm outer diameter
FS88C	TE905/TE805	22		288	1	
FS81D	SDSMax Syst.	18		215	1	
FS74C	TEX 11-DCS, TEX-11-DKS, BR 37, BR 45, DR 19	22	82	280	1	HD version also available for rods with 21 mm outer diameter
FS77C	TEX 31/31s, TEX41/41s, BR 67 UK BR 87 UK	32	160	380	1	HD version also available for rods with 21 mm outer diameter



### System structure and function - deep earthing

#### **Earthing**

An earth connection is a conductor placed in the soil, with the aim of diverting electrical current from an installation connected to the earth connection and into the surrounding soil.

A customer who buys power takes earthing for granted. This is despite the fact that the use of power without, or with poor, earthing incurs great risks. All power suppliers must have approved earth connections at their installations. This means that voltage surges that can occur for various reasons are led into the ground so that they do not cause damage. Earthing thus functions as, among other things, personal protection, property protection, signal transfer protection, lightning protection and the like.

An approved earthing should have: (1) low electrical resistance, (2) ability to conduct voltage stably (despite weather changes) and (3) long service life, i.e. good resistance to corrosion.

Soil conditions or external conditions? The importance of the soil as a conductor of electric current is great. The technical specifications and requirements for earthing demonstrate the advantages of deep-earth connections, both as a technical and economic solution, in relation to

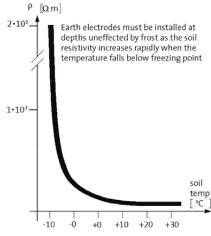
surface-earth connections.
Current conduction occurs in the soil through electrolytic processes, known as ionic conduction. Solid particles such as gravel are not usually conductive.
The electrical conductivity of the soil

therefore mainly depends on the proportion of saline water bound by capillary forces and osmotic pressure in the pores between grains of sand and in hygroscopic humus particles (e.g.clay).

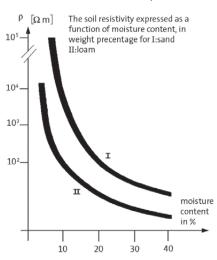
The water in deeper lying ground layers usually has a higher salinity than the water in the surface layer. The higher the moisture content of the soil, the better the conductivity. Soil humidity normally varies between 5-40%. At variations below 14-18%, conductivity deteriorates significantly.

Cold (frost) significantly impairs the ground's conductivity. It is of great importance that all this is taken into account for earth connections or earth connection systems.

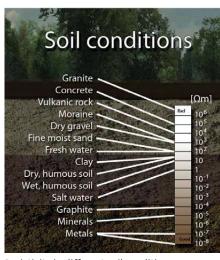
Weather conditions - cold, heat, rain and wind - mainly affect the upper layer of the soil (0 - 1.5 m), which therefore exhibits the most powerful variations. The most efficient earthing is thus reached when the electrode is placed deep enough so as not to be affected by changes in soil humidity and temperature.



Soil resistance in relation to temperature.



Soil resistance in relation to humidity.



Resistivity in different soil conditions.

#### Resistivity

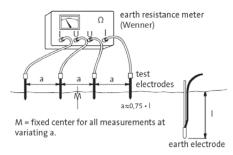
The electrical properties of the soil are quality declared by means of its resistivity, which is measured in  $\Omega m$  (former unit  $\Omega cm$ ,  $1 \Omega m$  =100  $\Omega cm$ ). Soil with good electrical conductivity thus has low resistivity: 10 - 100  $\Omega m$ .

For each case of different soil type, soil resistance must be measured and preferably during several seasons and in different weather conditions. In measurement today almost exclusively voltage compensated electronic resistance bridges are used (measurement method according to Wenner) with 4 connection contacts, 2 of which are for current electrodes and 2 for voltage probes.

The connectors are connected to 4 vertical metal tips that are driven down in a row about 0.3-0.5 m deep a metre apart. (See image)

If the instrument reading is R, the resistivity of the soil is calculated according to the following equation:

 $p=2\ x\ a\ x\ R\ \Omega m$  In unlayered soil, resistivity is independent of the electrode distance a. By increasing distance a, the current penetrates deeper into the ground and the measured resistivity can fall or increase depending on the resistivity of the ground layer at 1 metre's depth. When calculating approximate earthing resistance of the earth connection when the depth is I, the resistivity of the soil must be measured with electrode distance a  $\approx$  0.75 x l.



Measurement of ground resistance.



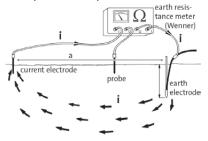
Measuring earthing resistance of the earth connection



#### **Earthing resistance**

Due to the high resistance of the soil (109 x resistivity metal) at current bleed in the soil a strong electrical field is formed in the earth connection, which diminishes in strength with distance from the earth connection. At a certain distance, this field can be neglected (removed earth).

The earthing resistance of the earth connection is usually measured with the same type of instrument used to measure the resistance of the soil. However, this measurement requires only one voltage probe and a current electrode (auxiliary earth connection). The location of probes and electrodes varies between different measurement methods The two methods that follow are a method of accurate technical measurement and a more practical, simplified method.



Measuring earthing resistance of the earth connection - Method 1

#### Method 1

(acc. to the lightning protection standard SS 4870110). This method has a measurement error of +/ - 2%.

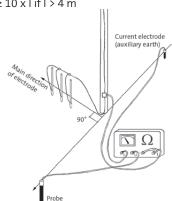
The summary gives this method:

- The probe and auxiliary electrode are placed in a straight line from the earth connection to be measured as illustrated.
- If the ground is layered, measurement should be carried out in two directions. The largest value is used.
- The reliability of the measurement result depends on the location of the probe/ auxiliary electrode. Note the distance table below. These provide normally acceptable measurement accuracy.

earth connection - probe = 0.5a-0.6a earth connection - electrode = a

 $a \ge 40 \text{ m if } l \le 4 \text{ m}$ 

 $a \ge 10 \times |if| > 4 \text{ m}$ 



Measuring earthing resistance of the earth connection - Method 2.

#### Method 2

(acc. to EBR-standard U2:80)

This method normally has a measurement error of more than 2%, but practically is easier to perform than Method 1.

The summary gives this method:

- Probes and electrodes are placed as illustrated, 90° from the main direction of the earth connection.
- The position of the probe/electrode is equal when measuring both an individual earth connection as earth connection system, i.e. at least 80 m from the earth connection.
- Measurement of an earth connection is carried out with an open earth conductor clamp.
- Measurement of the resulting transition resistance on multiple earth connection systems is carried out with the clamp closed and with the measuring line connected on the top of the earth conductor clamp. With the help of the conductivity and the maximum earthing resistance, which is required by, among other things, the high current regulations, it is possible to estimate how much line may be needed according to the formula:

I = p / R

I = length in metres

p = soil resistance in ohmmeter

R = earthing resistance in ohms.

In the discussion of the advantage of deep-earth connections compared to surface-earth connections, it should be mentioned here that the earthing resistance of a horizontal surface-earth connection is twice that of a similar line length in a deep- earth connection, i.e.

$$R0 = 2 \times p / I$$

#### Parallel connection

Parallel connection of several earth sockets is often necessary for practical reasons to achieve a sufficiently low value of earthing resistance during earthing. In order to limit reciprocal connection between individual earth connections, deep-earth connections shall be installed a distance apart of 1.5 times the depth of the earth connection I. Resulting earthing resistance:

$$Rres = k \times Rm$$

where Rm is the mean of the resistance value of the earth connection and k a reduction factor, the value of which is obtained from the following table.

No. of parallel earth connections k for a = 1.5l

0.60



Parallel connection.

2

3

5 10

From economic aspects it can be pointed out that the diameter of the earth connection has a negligible role when calculating the earthing resistance in deep earthing. This means that when using Elpress deep-earthing systems with copper line, the cost will be lower than when using, for example, conventional systems. What is important in practice in terms of the cable diameter is what currents the system is dimensioned for and what rules and requirements apply.

Examples of applicable requirements: the lightning protection standard states Culine min 25 mm², EBR prescribes min. Cu-line 35 mm<sup>2</sup> for earth connections in overhead line networks and min. 50 mm<sup>2</sup> for earth connections in ground cable networks.

#### Corrosion

The service life of an earth connection depends on its resistance to corrosion (rust). The prerequisite for all types of corrosion is an electrolyte fluid that allows the transport of positive metal ions from anode to cathode. At the anode, metal atoms are dissolved in the electrolyte, forming free positive ions - oxidation- and at the cathode these ions are neutralized and deposited on the metal surface - reduction.

In galvanic corrosion caused by contact between two metals, the corrosion rate is proportional to the galvanic tension between the metals. A base metal has higher negative potential than a nobler metal and therefore forms the anode in a corrosion process.

There is also a clear correlation between the corrosion rate and ground resistance. The rate of corrosion depends on the composition of the soil. Influencing factors are the pH of the soil, temperature, oxygen content, moisture content and resistivity. These factors affect the corrosion current lk, which is directly proportional to the rate of corrosion. Ik can be determined by direct measurement with an Ammeter or calculated, if the transition resistance Rö between the two electrodes is known, according to formula:

lk = Ug / Rö

Ug = galvanic voltage

In some cases, Rö can be measured with a resistance bridge of the same type used to measure the earthing resistance of an earth connection. The rate of corrosion is often expressed in μm/year where 1 μm represents 1/1000 of 1 mm and denotes the thickness of the corroded away outer metal layer for 1 year. The table below indicates some practical values as guide values for different soil resistivity.

Resistivity	Corrosion
p < 1 Ωm	100 μm/year
p < 1-10 Ωm	100-30 μm/year
p < 10-100 Ωm	30-4 μm/year
p > 100 Om	negligible



Notes



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# Some important comments on contact crimping



#### **About System Elpress**

There is a wide range of electrical terminals today, and it can be difficult to know if you have chosen the right solution for your installation.

A first step is to ensure that a system is chosen, consisting of terminal, tools and a standard conductor.

In order for this combination of material to be classified as a system, there must be common test documentation, a type test according to a standard relevant to the material.

There may also be a need to identify the correct terminal depending on the cable class. Cables are divided into different classes depending on their structure. With System Elpress you get a complete solution, KRF/KSF in combination with Dual can be combined with all Cu cable classes. Elpress systems for aluminium indented crimping are a robust solution that can be used with all types of Al cables.

Not choosing a system carries great risks. All terminals are designed with respect to a specific tool system. Small differences in dimensions of terminals and tools can lead to serious consequences, such as hot running or fire.

#### **Terminals**

Elpress terminals have been developed over 60 years of continuous work to always meet the highest standards. Our terminals are designed to be able to operate at a continuous temperature of 90°C and to always be able to carry the same load that the relevant cable area can handle.

This means, among other things, that tubes for our KRF/KSF are dimensioned to be adapted to the cable's conductivity. This type of terminal should be crimped with a hexagonal geometry that provides a symmetrical shape that distributes crimp force evenly and ensures that thin strands are not damaged shortening the lifetime of the connection.

Our aluminium terminals are designed according to the same criteria and requirements as mentioned above, and should be crimped with a punch tool that ensures that the aluminium insulating oxide layer is broken and that good points of contact are created between conductors and terminal.

#### Cables

Elpress terminal systems are designed to be used in conjunction with cables according to IEC 60228. This is an international standard used all over the world and describes the structure and conductivity of a cable  $(\Omega/km)$  The norm divides cables into classes as shown below.





Class 5 Flexible conductor

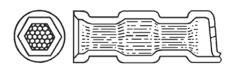


Class 2 Stranded conductor



Types of conductor

Cables in each class shall have mechanical and electrical properties that meet the requirements of the norm, which means that they can be used with System Elpress without special adaptation. In addition to the classification of conductors, the differences between cables are mainly in the design of the insulation.



Hexagonal crimping.



Indented crimping.



#### **Trained users**

Another important aspect of a system is a knowledgeable and trained operator. Good and safe work requires knowledge of materials, regulations and the importance of using a system solution. We offer company-adapted training that includes both theoretical and practical parts.



# Standards for contact crimping





SEK - Svensk elstandard, https://elstandard.se/



IEC, https://www.iec.ch/



## Standards for electrical terminals

SEK Svensk Elstandard is appointed by the government to be responsible for all standardisation within the electrical area in Sweden.

The Standards are established mainly through international and European collaborations within the International Electrotechnical Commission (IEC) and CENELEC (Comite' Européen de Normalisation Electrotechnique). SEK represents and coordinates Swedish companies and authorities.

These standards are available on the SEK website. There are also manuals that show regulations and recommendations for different types of installations. For type testing of electrical terminals, the current standard is IEC 61238-1-1, it supersedes all national standards. It has been active since 1993 and was last updated in 2018 and is thus the standard that best meets the requirements that can be imposed on today's installations. In addition to this, there are a large number of more industry-specific standards for railways or switchgear where, in addition to the requirements of IEC 61238-1-1, there may be a need for vibration and environmental testing.

#### Tests against standard

Many existing products for electrical terminals are older than IEC 61238-1-1, this does not mean that they have to be retested against the new standard to be acceptable, the standard they were tested against at launch applies. This is rarely a problem as they are likely to be used in installations of the same age. In newer installations with higher demands on current and temperature, it is important to choose materials tested according to current standards.

#### Crimp results

For a good crimp result, you have to ensure clean conductor surfaces, without visible oxide lavers.

A good cable stripper guarantees clean stripping without damage to individual strands, follow Elpress instructions for stripping lengths.

Crimping tools should be checked before starting work, to avoid the risk of injury and to ensure a good result.

The crimp dies are the key to a successful crimping process, whether they are hydraulically or manually operated. It very important that all tool parts are kept dry and clean and that they are regularly checked for damage. Damage and/or contamination of tool parts can lead to a deterioration in the end result and shortened tool life.





# Use and safety instructions

#### Instructions and directions

Elpress hydraulic and mechanical tool systems are some of the safest on the market. Safety requires that instructions and directions are available and followed closely. Each Elpress tool is therefore accompanied by detailed instructions on how to use the tool. These instructions should be read carefully before use, in the best interests of the operator.

#### Correct use of the tools:

- increases productivity
- increases tool life
- ensures the quality of work done
- · minimises the risk of accidents

#### Safety rules

Below are some simple and common rules that we at Elpress recommend all operators to follow:

- Before starting work with a crimp tool, a thorough visual inspection should be carried out. Pump, crimp head, forks, couplings, hoses and other accessories must be checked to ensure that they are faultless and clean. The correct placement of the inserts in the forks should also be checked before starting work.
- All operators must wear personal protective equipment such as A51 gloves, goggles and safety shoes.
- Hydraulic pressure must not be applied to a hose that is heavily bent or knotted. The hose is made for particularly high pressure and cannot be replaced by another type.
- Hydraulic tools must never be carried in the hose or coupling.
- Operate with caution, do not drop heavy objects on the hydraulic hose.
   This can damage the steel reinforcement and cause leakage. If leakage occurs, oil under high pressure may come into contact and penetrate the skin resulting in internal injury. If this happens, contact a doctor immediately.
- The tools must be serviced and calibrated at regular intervals.
- Make sure that the correct tool or tool insert has been selected for the terminal and conductor to be crimped.
- Check that the installation is unpowered before carrying out work. The tools are not designed for "Live working".
- Keep in mind that there is very high crimp pressure during work. Therefore, never stand in front of a tool in the direction of crimping force.
- Pay attention to the risk of crushing and cutting injuries during work. This applies to all types of crimping tools and cable cutters.
- If there is a suspicion of failure of a crimp system, always contact the Elpress Service Centre.

#### Check of crimping results

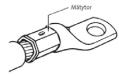
In order to ensure that the tool has achieved the predetermined shape change for each cable terminal, the crimp result shall be measured. This shape change provides both mechanical strength and good electrical properties.

#### Hexagonal crimping

For terminals and through connectors of copper the following applies:

- The "N" dimension is checked in the direction of the crimp.
- Measure with calipers and compare with the table's "N" dimensions.
- If the measurement result exceeds the "N" dimension (according to the table that follows) after correct contact crimping, contact the Elpress service centre.





# Crimp die table type KRF/KSF with Dual dies (N measurement)

# Type KRF/KSF with DUAL dies

KRF/KSF	DB-die nr	max N mm
10	8	6,7
16	9	7,5
25	11	9,0
35	13	10,6
50	14,5	11,8
70	17	13,6
95	20	16,0
120	22	17,7
150	25	20,3
185	27	21,7
240	30	23,9
300	32	25,7
400	38	30,5

# Crimp die table type KRF/KSF (N-measurement)

# Type KRF/KSF with B-dies

KRF/KSF	Die No.	max N mm
10	8	6,3
16	9	7,3
25	11	8,8
35	13	10,2
50	14,5	11,2
70	17	13,4
95	20	16,4
95	20	15.8 (TB die)
120	22	16,3
150	25	20,1
150	25	20,3 (CB and KB dies)
185	27	20,5
240	30	23,3
300	32	24,5
400	38	30,3
500	42	30,4
630	53	38,4
800	53	38.4

# Crimp die table type KRD/KSD (N-measurement)

# Type KRD/KSD with B-dies

•	=		
K	RD/KSD	Die No.	max N mm
1	6	8	6.3
2	5	9	7.3
3	5	11	8.8
5	0	12	10.2
7	0	14	11.6
9	5	16	13.0
1	20	19	15.0 (KB dies)
1	20	19	15.2
1	50	22	16,3
1	85	25	20.1
1	85	25	20,3 (CB and KB dies)
2	40	27	20.5
3	00	30	23.3
4	00	32	24.5

# Crimp die table type KRT/KST (N-measurement)

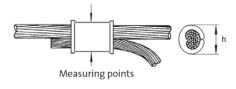
# Type KRT/KST with B-dies

KRT/KST	Die No.	max N mm
10	7	5.9
16	8.5	7.5
25	10	8.2
35	12	10.2
50	14	11.6
70	16	13.0
95	18	14.0
95	18	13.8 (KB dies)
120	19	15.0 (KB dies)
120	19	15.2
150	22	16.3
185	24	17.7
240	26	19.5
300	30	23.3
400	32	24.5



#### **Oval crimping**

For Cu branching sleeves, the "h" dimension must be checked. This is done at the maximum height of the crimped oval, preferably with calipers. The measurements are compared to the table below. If the "h" measurement is exceeded, after a contact crimping, contact the nearest Elpress service centre. See measurement points on the image below.

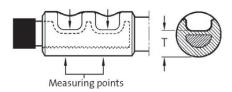


# Crimp die table type C sleeves (H-dimensions)

C-die No.	Sleeve	max h mm
5	C6-10	12.5
6	C16-25	15.5
8-9	C25-50	22.0
13	C50-70, C70-95	26.5
15	C95-120	30.8
18	C150-185	44.5
21	C240-300, C23	54.4

#### Indent crimping

For Al terminals, the measurement "T" must be checked, which is measured at the bottom of the indent that the punch has achieved on the terminal. This is best done with special calipers, contact Elpress if necessary. Compare measured "T" measurement with table. If the "T" measurement is exceeded, after indented crimping, contact the nearest Elpress service centre. See measurement points on the image below.



#### Crimp die table type AK/AS (T-measurement)

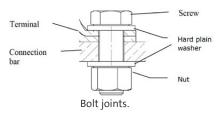
Type AS/AK/AKK	Tools					
AS/AK/AKK	Matrix	Punch	max T mm			
16	P13M/TP13M	P13D/TP13D	6.8			
25	P13M	P13D	6.8			
35	P20M	P20D	10.8			
50	P20M	P20D	10.8			
70	P20M	P20D	10.8			
95	P25M	P25D	13.5			
120	P25M	P25D	13.5			
150	P25M	P25D	13.5			
150SOLID	13P29M	13P29D	14.3			
185	P32M	P32D	18.4			
240	P32M	P32D	18.4			
300	P36M	P36/40/44D	21.0			
300B	13P37M/P2537M	13P37D/P2537D	22.5			
400B	13P37M/P2537M	13P37D/P2537D	22.5			
400	P40M	P36/40/44D	22.8			
500B	P44M	P36/40/44D	24.5			
500A	P2552M	P2552D	31.0			
630A	P2552M	P2552D	31.0			
630	W60M	W60D	36.0			
800	W60M	W60D	36.0			
1000	W60M	W60D	36.0			
1200	W70M	W70D	41.0			



## **Bolt joints**

#### **Bolt joints**

Users/installers of bolted connectors always have to adhere to, and follow electrical codes and norms in the local region where they are making such installations. The information below is general and hence, should never be seen as an installation instruction. The installation of a terminal with bolt joint for electrical transmission requires special attention. It is important that this is done in a correct manner, as important as the contact crimping at the other end of the terminal as described above. The joint must achieve a sufficiently high clamping force, distributed in a desirable manner and ensure the electrical properties over a very long time under high and varying loads of different characteristics. It is very important to follow the installation instructions. These are based on theoretical calculations, verified tests and experience from field studies. Tightening must be carried out in a controlled manner using torque tools, where the relevant screw is tensioned to the specified torque. The accuracy of the tool is of great importance. The clamping force of a properly tightened screw shall create a contact area large enough to ensure good conductivity, without the risk of overheating. In order for the clamping force to be distributed evenly and create a sufficiently large contact area, hard flat washers must always be used, type BRB HB200 SMS 70, under screw head and nut. See image below. This applies regardless of the hardness of the conductive materials (which are softer than HB200). Otherwise, there is risk of large deformation of the conducting material that reduces the tension, which can increase the risk of inadequate contact area and overheating.



#### **Tension washers**

elements or spring washers often increases the risk of settlement. If a spring washer of type DIN 6796, with a very high clamping force, is positioned and secured between e.g. nut and the hard flat washer, it can provide an increased margin towards excessively high settlement. The diameter of the tension washer should be less than or equal to the flat washer's, even after tightening fully. Otherwise, the risk of settlement at the outer edge of the flat washer increases where the clamping forces are concentrated. When using spring washers, 1 is sufficient and it is preferably placed on the opposite side of the terminal.

The use of different types of locking

# Screw Hard plain washer Cable shoe flag Connection bar Hard plain washer with big outer Spring washer DIN 6796 (not fully tightened on the pictun

Bolt joint with spring washer.

# Mounting the terminal against the connection rail

Max. 2 terminals of the same size on the same screw. Current load should be checked.

#### Preparatory:

- Clean contact surfaces from dirt, oxide layers and grease using a steel brush and denatured alcohol. This is especially important for aluminium. Surfaces that are tinned, nickel-plated, silver plated must not be brushed.
- Petroleum jelly or contact grease reduces corrosion risk on cleaned surfaces

#### Fastener selection:

- Screws and nuts of strength class 8.8.
- Greased galvanized screws provide the least dispersion of the pre-tension force.
- Choose stainless A4-80 in environments when there is a high risk of corrosion.

#### Selection of washers:

- Always select hard flat washers of the BRB, HB200 type.
- The tension washer can normally be excluded. If a tension washer of type DIN 6796 is used, it must be placed between the screw head/nut and the flat washer. It must never be placed directly against an electrical contact surface without a flat washer in between. The flat washer must have an external diameter at least as large as the tension washer.
- 1 spring washer is sufficient and it should be placed on the rear of the busbar, between nut and hard flat washer, see diagram.

#### Installation:

- The screws must be tightened with torque tools so that tightening is controlled.
- Torque wrenches must be calibrated regularly. Oil the screw when installing.
   Even if the torque is recorded correctly, the pre-tension force depends entirely on the friction.
- Tightening torque according to the table above. Accuracy better than ±5%.
- The terminal palm and busbar may be of different materials.

Al/Al gives a weaker joint. It is important to clean and use contact grease. Tension washer + flat washer can reduce the risk of settlement.

Al/Cu gives a higher risk of corrosion and settlement, use contact grease. Cu/Al provides low risk of galvanic corrosion when the rail is made of Al. Cu/CU provides the best joint, good contact and small risk of settlement.

#### Recommended tightening torque

Thread	Steel 8.8 *	Steel 8.8 *	Steel 8.8 *	Steel 10.9 *	Steel 10.9 *	Steel 10.9 *	Stainless	* Stainles	s *Stainless *
-	Mv	Ff	р	Mv	Ff	р	Mv	Ff	Р
M5	5,5	6,6	118,0	8,0	9,2	164,0	5,5	6,2	111,0
M6	9,5	9,2	114,0	13,0	13,0	160,0	9,5	8,6	107,0
M8	23,0	17,0	116,0	32,0	24,0	164,0	22,0	16,0	109,0
M10	45,0	27,0	92,0	64,0	38,0	129,0	45,0	25,5	88,0
M12	78,0	40,0	125,0	110,0	56,0	175,0	76,0	37,0	116,0
M16	200,0	75,0	156,0	280,0	110,0	229,0	185,0	69,0	144,0

Mv = tightening torque (Nm)
Ff = pre-tensioning force (kN)
p = flat pressure (N/mm²)
FZB = electroplated + gloss chromed
FZY = electroplated + hard chromed
FZM = FZM= mechanically galvanized
\* (FZB, FZY, FZM)
A4/80



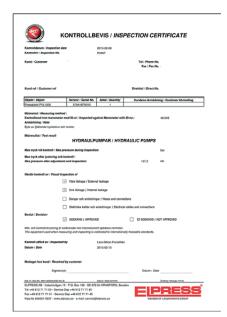
# Service and maintenance

#### Service and maintenance

Our service department maintains, repairs, checks, calibrates and certifies Elpress tools and power sources. Following a review of the equipment by the service department, certificates are issued that verify the performance of the tools. To ensure that your crimped terminals maintain a high and even level of quality, regular checks shall be done of the crimping tools.

#### We offer:

- Contract preventive maintenance, Elpress Basic and Elpress Advance
- · Calibration of tools
- Repairs (servicing of tools)
- Rental of crimping equipment



#### Preventive maintenance

Elpress service offers a flexible service solution for increased security with fast service and high availability.

Our service agreements are available in 2 levels, Elpress Basic and Elpress Advance. To sign a service agreement with Elpress means the following:

- Planned and preventive maintenance ensures better performance for your equipment.
- Regular service intervals minimise the risk of unforeseen stoppages by indicating any safety or functional defects and recommending measures to avoid these problems
- Regular service intervals are normally implemented every 12 months for a fixed price
- The price is based on the service level and tool equipment.
- A certificate is issued after the equipment has complied with calibration requirements
- Calibration can also be done on-site at the customer



#### **Elpress Basic**

This forms the basis of a service agreement and includes the following points:

- General inspection of the tool
- Safety aspects according to declaration of conformity (compliance with the Machinery Safety Directive, Low Voltage Directive, EMC Directive).
- Function test
- Checking of accessories, e.g. crimp dies etc.
- Issue of Certificate
- The inspection follows Elpress final inspection and acceptance inspection requirements.

#### **Elpress Advance**

Elpress Advance includes:

 Elpress Basic + corrective maintenance Includes calibration with certification and consumables repairs at a fixed price.



# Calibration with certification of tool

Calibration follows the same points and requirements as Elpress Basic, but it is the customer's responsibility to submit the tool for calibration.

# Rental of contact crimping equipment

Sometimes the accumulation of work can be greater than can be expected, or individual projects may require more resources than usual and then it is possible to rent equipment at Elpress. When repairing equipment for a company, Elpress can rent tools to the company if required, until the original equipment is repaired and returned.

#### Purchased a new product?

Send the Product registration form to Elpress and Elpress Basic is included for free the first year.



#### Information

More information is available from the service department: https://www.elpress.net/en/products/system-elpress/service/



#### **Technical information**

#### **Connecting materials**

Elpress uses copper, brass and aluminium as terminal materials.

The copper and brass products are electrolytically tin plated for increased corrosion resistance. In a bimetal (copper aluminium) terminal, the copper part is untreated.

#### **Brass**

Brass is mainly used for flat pin sleeves in areas up to 6 mm², where good suspension properties are desired.
Brass is an alloy of about 70% copper and about 30% zinc and has very good cold form properties.

#### Copper

The copper used by Elpress for terminals has a purity of at least 99.95 %. Its excellent properties for use in electrical terminals are among the following:

- high conductivity (only silver is better)
- high corrosion resistance
- · good formability
- good sealability

In manufacturing the neck of the terminal element is soft soldered in order to obtain as good form properties and good enclosure around the conductor as possible during the contact crimping. This then provides a terminal that exhibits low transitional resistance and good mechanical properties.

#### **Aluminium**

The aluminium used for through connectors and cable terminals has a purity of at least 99.7 % and its excellent qualities are:

- · low weight
- strong, in relation to its weight
- good electrical conductivity, approximately 60% of the conductivity of copper
- easy to work with

#### Conductor design

#### Cable standard IEC 60228 provides:

Information about materials, construction and resistance values for both copper and aluminium conductors.

Class 1 solid conductor

Class 2 stranded conductor

Class 5 flexible conductor

Class 6 highly flexible conductor

#### **UL-approved terminals**

UL is a US standard that is also internationally accepted. Elpress standard Cu-terminals type KR/KS, KRF/KSF are UL approved acc. to file no. E205350. Cu-terminals type KRF/KSF are for stranded and flexible copper cable, Class 2 and 5 according to IEC 60228 and have a working range of 1-500 mm².

# MCM and AWG cross-reference table to the corresponding area in mm<sup>2</sup>

MCM No.	Area mm²	AWG No.	Area mm²
250	127	36	0,013
300	152	34	0,020
350	177	32	0,032
400	203	30	0,051
450	228	28	0,080
500	253	26	0,13
550	279	24	0,20
600	304	22	0,33
650	329	20	0,56
700	355	19	0,65
750	380	18	0,82
800	405	17	1,04
850	431	16	1,31
900	456	15	1,65
1000	507	14	2,08
1100	557	13	2,62
1200	608	12	3,31
1300	659	11	4,17
1400	709	10	5,26
1500	760	9	6,63
1600	811	8	8,37
1700	861	7	10,6
1800	912	6	13,3
1900	963	5	16,8
2000	1013	4	21,2
		3	26.4
		2	33.6
		1	42.4
		1/0	53,5
		2/0	67,4
		3/0	85,5
		4/0	107

#### Remarks:

- 1. The information in this table comes from catalogues published by respected cable providers and does not refer to official standards.
- 2. The types relating to AWG vary depending on the different design of the conductors, i.e. the number of strands.

AWG > 20 refers to single strand conductors.

AWG ≤ 20 refers to multi stranded conductors.

Exact areas for specific number of strands can be found in cable provider catalogues.



# **Development - technical services**

#### **Development - technical services**

Elpress is one of Europe's leading manufacturers of electrical crimping systems and has 60 years of experience in application solutions in everything from nuclear power plants to small electronic devices.

Products in electrical applications are subjected to both mechanical and thermal loads. Elpress invests considerable resources to achieve success through continuous product development towards better value, quality and performance.

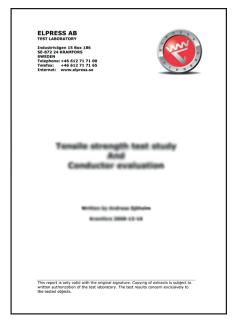
For this purpose there is modern laboratory equipment for, among other things:

- High current testing
- Mechanical tensile strength testing
- Cyclic current testing
- Vibration testing
- Corrosion testing
- Resistance determination

The activities also include theoretical studies, prototype development, technical documentation and advice etc. The competence of the staff together with good laboratory and calculation aids is a strong competitive tool both in terms of consultancy services and their own development projects.



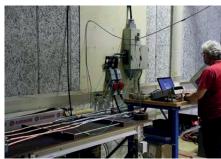
Test of terminals.



Laboratory report.



Tests according to IEC 61238-1-1 in own premises



Flexible and customized test setups



# General comments on the use of Elpress terminals for voltages of 12 kV and above

#### **Terminals**

The modern and easy-to-use cable terminations for 12 to 36 kV PEX insulated cable consisting of prefabricated modules or even fully finished terminations, provide no or very little restriction in the use of terminals with type designations AK, AKK or KRF. This also includes the "top pins" with the type designation AKP.

One detail to take into account when using KRF terminals outdoors is that this terminal is equipped with an inspection hole that must be sealed. Your supplier of cable terminations can provide its specific solution.

Terminals type AK, AKK or "top pin" AKP can today be used on high voltage cable terminations where solutions are available up to 84 kV. In case of doubt, always consult with your cable termination supplier for specific solutions for different issues regarding technical details regarding the design. When installing cable terminations for oil impregnated paper cable where an oil reservoir is used, manufacturers usually have their own specially designed solutions for the conductor connections.

#### Terminals type AK

Terminal type AK is used at termination of an Al conductor for connection to busbars and apparatus sockets

#### **Terminals type AKK**

Terminals of type AKK are used at the end of an Al conductor for connection to a Cu bus bar.







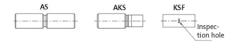


#### Through connectors type AS

Through connectors type AS used when splicing aluminium-conductors.

#### Through connectors type AKS

Through connectors of type AKS are used for jointing of Al conductors to Cu conductors.



# Joint sleeves PEX insulated cable against PEX insulated cable

In Sweden, four types of splice are currently used in the voltage range 12 to 36 kV. These are tape, heat shrink, cold shrink and push-on joints. All these joints are designed to accept AS, AKS and KSF through connectors. No connectors with conical ends are required today. Different manufacturers have their own solutions that are designed to take care of, for example, the punch holes and the distance between the insulation edge and the through connector. Always note the joint manufacturer's di-

rections regarding maximum lengths and diameters of the connectors. If you are not sure, or if the installation instructions do not indicate what you are considering, consult your joint supplier.

At higher voltages, e.g. 52 and 84 kV, other requirements are placed on the through connectors depending on the joint design and design. However, there are solutions where "normal" through connectors are used together with filler materials in the voltage range up to 145 kV

# PEX insulated cable against oil impregnated cable

When installing a transition splice between cables with oil impregnated insulation and PEX insulation at voltages of 12 kV and above, connectors with partitions must be used, regardless of the splicing method and make. AKS, KSF-M and AS connectors always have partitions.

# Oil impregnated against oil-impregnated cable

When splicing two cables with this type of insulation, connectors of type AS, AKS, or KSF can be used, whether it is an oil tube connector or a "dry" heat shrink connector.





# SYSTEM ELPRESS

**System Elpress** symbolizes our **cornerstones**—safety and quality. In order to achieve a secure connection, we offer **certified solutions** of the combination cable, terminal and tool.

For perfect crimping connections, **Elpress Academy** offers Crimping Technology training and seminars.



For non-standard solutions you can **consult** us and let our own production and laboratory verify your solution. A preventive **service** maintenance of the tool is the base for the system to work.

Certification, Academy, Consulting and Service is System Elpress – your secure connection!



We manufacture tested systems for electrical connectors and their tools. You get a secure connection.

# SYSTEM ELPRESS CERTIFICATION



#### We offer:

Tool delivered with a calibration certificate

Verified and tested combination of cable, terminal and tool

Certified solutions for customized product development

Product approval in accordance with IEC, UL, DNV and CSA

Third part quality and environment certification in accordance with ISO9001 and ISO14001



In order to achieve a secure connection we offer certified solutions of the combination cable, terminal and tool.

This is so that you as customer can feel secure when you use our system and be sure that a safe connection will be made when our products are used correctly.

# FOR YOUR SAFETY

#### The System includes:

- Terminal, connector
- Crimping tool
- Correct cable
- · Trained and skilled operator

The system is developed and tested in accordance with existing norms and standards, for example IEC.

#### **Product development**

- Customized solutions
- Specialized segment solutions
- Leading technology in our industry
- Innovative products







# SYSTEM ELPRESS CONSULTING





#### We offer:

Tests in laboratory
Problem solving
Technical and customer support
Customized terminals and tools
Audits and validations at your premises







A well educated personnel ensures the final quality of products and services.

Our Academy certificate is a Quality Assurance Document between you and your customer.

# SYSTEM ELPRESS ACADEMY



#### We focus on the following four areas:

Utility sector and installers
Transformer manufacturers
Traction/Train manufacturers
Wind Power manufacturers



# **Utility and installation personnel**

ACADEMY

General training for all staff. Provides a general knowledge of crimping in all areas;

- Terminals below 10 mm<sup>2</sup>
- Cu-connectors over 10 mm<sup>2</sup>
- Al-connectors from 16 mm<sup>2</sup>
- · Cu-branching
- Bolt connections
- Deep earthing
- Standards and requirement
- Safety and maintenance
- Quality inspection

The program combines theory and practice and concludes with a written test. Course participants will receive certificate after the completion of their training.

Possibility to customize the training so the content fits the needs of the company.

#### **Transformer manufacturers**

For operators who work daily in the production. The aim is to train personnel in the special conditions applying in the transformer manufacturing. The training focuses on areas like;

- Management of tools
- Calculations and preparation for crimping
- Work procedure
- Quality inspection
- · Safety in use
- Preventive maintenance in daily production

The training consists of a theoretical and a practical part and ends with a written test. Course participants will receive certificate after the completion of their training.

We can provide education for all personnel such as operators, supervisors, designers and quality departments. The education includes a thorough knowledge of calculations, tool selection and management, problems and solutions and quality assessment.



Each training has a level that suits everyone, such as operators, designers, supervisors and quality managers. In addition, there is the possibility to customize the training so that the content fits the needs of the company. You also decide whether the training should be company-based or held in Elpress's training facilities.

#### Train and vehicle manufacturers

Educate staff in the special demands and external conditions that apply in the manufacturing of rail traffic. The training concerns;

- Management of tools
- Work procedure
- Elpress Dual-technology
- · Crimp technique
- Quality inspection
- · Safety in use
- Preventive maintenance in daily production

The training consists of a theoretical and a practical part and ends with a written test. Course participants will receive certificate after the completion of their training.

Education for all personnel such as operators, supervisors, designers and quality departments. Provides a thorough knowledge of calculations, tool selection and management, problems and solutions and quality assessment. Completed training gives a certificate.

#### Wind Power manufacturers

Educate staff in the special demands and external conditions that apply in the manufacture of wind turbines. The training concerns;

- Management of tools
- Work procedure
- Elpress Dual-technology
- Crimp technique
- · Quality inspection
- · Safety in use
- Preventive maintenance in daily production

The training consists of a theoretical and a practical part and ends with a written test. Course participants will receive certificate after the completion of their training.

Education for all personnel such as operators, supervisors, designers and quality departments. Provides a thorough knowledge of calculations, tool selection and management, problems and solutions and quality assessment. Completed training gives a certificate.



Preventive maintenance agreements secure the quality of your connection

# SYSTEM ELPRESS SERVICE



Preventive maintenance agreements

Calibration of certified tools

Repairs/maintenance of tools

Crimping systems for rent Sales of spare parts



# Preventive maintenance agreements

Our Service offers you a flexible solution for enhanced security, with rapid service and high availability:

- Planned and preventive maintenance guarantees high performance for your equipment.
- Regular service intervals minimize the risk of unforeseen stoppages by indicating any safety or functional defects and by recommending measures to avoid such problems.
- Regular service intervals are normally implemented every 12 months at a fixed price.

# Elpress Basic Elpress Advance

Elpress Basic service agreement includes following points:

- General inspection of the tool
- Safety aspects in accordance with declaration of conformity
- Function test
- Checking of accessories, e.g. crimp dies etc.
- Issue of Certificate

The inspection follows Elpress final inspection and acceptance inspection requirements.

Elpress Advance service agreement includes following points:

• The price is based on the service level solution and

• A certificate is issued after the equipment has

The maintenance can be performed at your

complied with calibration requirements.

• Elpress Basic + corrective maintenance

Includes the Calibration/certification and wear & tear repairs at a fixed price.

#### Calibration of certified tools

The calibration follows the same inspection points and requirements as Elpress Basic, but it is the customer's responsibility to send the tool for calibration.

# Purchased a new product?

equipment.

premisses.

Send the Product registration form to Elpress and Elpress Basic is included for free the first year.







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A2510R         1:4         A4653G         1:5         AKK120-12         5:6         AKS185-150         5:9           A2513R         1:4         A4653R         1:4         AKK120-16         5:6         AK5185-185         5:9           A25-16ETD         2:4         A4665G         1:5         AKK150-10         5:6         AK5185-70         5:9           A25-16ETT         2:6         A4665G         1:5         AKK150-12         5:6         AK5185-95         5:9           A25-16ETT         2:5         A4685G         1:5         AKK150-16         5:6         AK5240-120         5:9           A25-18ET         2:4         A50-20ETT         2:4         AKK165-10         5:6         AK5240-150         5:9           A25-18ETD         2:6         A50-20ETD         2:4         AKK185-10         5:6         AK5240-185         5:9           A25-18ETT         2:5         A50-20ETT         2:5         AKK185-12         5:6         AK5240-185         5:9           A25-18ETT         2:5         A50-20ETT         2:5         AKK185-12         5:6         AK5240-240A         5:9           A25-19SR         1:6         A50-25ETT         2:4         AKK240-10         5:6								
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A25-16ET 2:4 A4665G 1:5 AKK150-10 5:6 AKS185-70 5:9 A25-16ETD 2:6 A4665R 1:4 AKK150-12 5:6 AKS185-95 5:9 A25-16ETT 2:5 A4685G 1:5 AKK150-16 5:6 AKS240-120 5:9 A25-17PSK 1:8 A4685R 1:4 AKK16-8 5:6 AKS240-120 5:9 A25-17PSK 1:8 A4685R 1:4 AKK16-8 5:6 AKS240-150 5:9 A25-18ET 2:4 A50-20ET 2:4 AKK185-10 5:6 AKS240-185 5:9 A25-18ETD 2:6 A50-20ETD 2:6 AKK185-12 5:6 AKS240-185 5:9 A25-18ETT 2:5 A50-20ETT 2:5 AKK185-16 5:6 AKS240-35 5:9 A25-18ETT 2:5 A50-20ETT 2:4 AKK185-16 5:6 AKS240-35 5:9 A25-19SR 1:6 A50-25ETD 2:6 AKK240-10 5:6 AKS240-70 5:9 A25-19SR 1:6 A50-25ETD 2:6 AKK240-12 5:6 AKS240-70 5:9 A25-22ET 2:4 A50-25ETT 2:5 AKK240-16 5:6 AKS240-95 5:9 A25-22ETD 2:6 A6-12ET 2:4 AKK25-12 5:6 AKS240-95 5:9 A25-22ETD 2:6 A6-12ETD 2:6 AKK25-10 5:9 A25-22ETT 2:5 A6-12ETD 2:6 AKK25-10 5:9 A25-22ETT 2:5 A6-12ETD 2:6 AKK25-10 5:9 A25-25FSK 1:7 A6-12ETD 2:6 AKK25-10 5:9 A25-25FSK 1:7 A6-14ETT 2:8 AKK300-12 A25-29SF 1:7 A6-14ETT2 2:9 AKK300-12 A25-29SF 1:7 A6-14ETT2 2:9 AKK300-16 5:6 AKS300-150 5:9 A25-29SF 1:7 A6-14ETT2 2:9 AKK300-16 5:6 AKS300-185 5:9 A25-29SF 1:7 A6-14ETT2 2:9 AKK300-16 5:6 AKS300-185 5:9 A25-29SF 1:7 A6-14ETT2 2:9 AKK300-10 5:6 AKS300-240A 5:9 A25-29SF 1:7 A6-18ETT 2:4 AKK300-20 5:6 AKS300-240A 5:9 A25-29SF 1:7 A6-18ETT 2:8 AKK300-20 5:6 AKS300-240A 5:9 A25-29SF 1:7 A6-18ETT 2:8 AKK300-20 5:6 AKS300-240A 5:9 A25-29SF 1:7 A6-18ETT 2:8 AKK300-10 5:6 AKS300-10-300 5:9 A25-29SF 1:4 A6-18ETD 2:6 AKK300B-16 5:7 AKS300SUID-300 5:9 A25-29SF 1:4 A6-18ETT 2:8 AKK300-20 5:6 AKS300SUID-300 5:9 A25-29SF 1:4 A6-18ETT 2:6 AKK300B-16 5:7 AKS30SOULD-300 5:9 A25-29SF 1:4 A6-18ETT 2:5 AKK300B-16 5:7 AKS30SOULD-300 5:9								
A25-16ETD       2:6       A4665R       1:4       AKK150-12       5:6       AKS185-95       5:9         A25-16ETT       2:5       A4685G       1:5       AKK150-16       5:6       AKS240-120       5:9         A25-17PSK       1:8       A4685R       1:4       AKK16-8       5:6       AKS240-150       5:9         A25-18ET       2:4       A50-20ET       2:4       AKK185-10       5:6       AKS240-185       5:9         A25-18ETD       2:6       A50-20ETD       2:6       AKK185-12       5:6       AKS240-240A       5:9         A25-18ETT       2:5       A50-20ETT       2:5       AKK185-16       5:6       AKS240-35       5:9         A2519SR       1:6       A50-25ET       2:4       AKK240-10       5:6       AKS240-35       5:9         A2519SRK       1:6       A50-25ETD       2:6       AKK240-10       5:6       AKS240-70       5:9         A25-22ET       2:4       A50-25ETT       2:5       AKK240-16       5:6       AKS240-70       5:9         A25-22ETD       2:6       A6-12ET       2:4       AKK240-12       5:6       AKS240-95       5:9         A25-22ETT       2:6       A6-12ET       2:4								
A25-16ETT       2:5       A4685G       1:5       AKK150-16       5:6       AKS240-120       5:9         A2517PSK       1:8       A4685R       1:4       AKK16-8       5:6       AKS240-150       5:9         A25-18ET       2:4       A50-20ET       2:4       AKK185-10       5:6       AKS240-185       5:9         A25-18ETD       2:6       A50-20ETD       2:6       AKK185-12       5:6       AKS240-240A       5:9         A25-18ETT       2:5       A50-20ETT       2:5       AKK185-16       5:6       AKS240-35       5:9         A25-19SR       1:6       A50-25ETT       2:5       AKK185-16       5:6       AKS240-35       5:9         A2519SRK       1:6       A50-25ETD       2:6       AKK240-10       5:6       AKS240-70       5:9         A25-19SRK       1:6       A50-25ETT       2:5       AKK240-12       5:6       AKS240-95       5:9         A25-22ET       2:4       A50-25ETT       2:5       AKK240-16       5:6       AKS240-95       5:9         A25-22ETT       2:6       A6-12ET       2:4       AKK25-12       5:6       AKS240-10       5:9         A2524SFL       1:7       A6-12ETD       2:6								
A2517PSK       1:8       A4685R       1:4       AKK16-8       5:6       AKS240-150       5:9         A25-18ET       2:4       A50-20ET       2:4       AKK185-10       5:6       AKS240-185       5:9         A25-18ETD       2:6       A50-20ETD       2:6       AKK185-12       5:6       AKS240-240A       5:9         A25-18ETT       2:5       A50-20ETT       2:5       AKK185-16       5:6       AKS240-240A       5:9         A25-19SR       1:6       A50-25ETT       2:4       AKK240-10       5:6       AKS240-50       5:9         A2519SR       1:6       A50-25ETD       2:6       AKK240-12       5:6       AKS240-70       5:9         A2519SRK       1:6       A50-25ETD       2:6       AKK240-12       5:6       AKS240-70       5:9         A25-22ET       2:4       A50-25ETT       2:5       AKK240-12       5:6       AKS240-95       5:9         A25-22ETD       2:6       A6-12ET       2:4       AKK25-12       5:6       AKS240-95       5:9         A25-22ETT       2:6       A6-12ET       2:4       AKK25-8       5:6       AKS25-10       5:8         A25-22ETT       2:5       A6-12ETD       2:6	A25-16ETT							
A25-18ET       2:4       A50-20ET       2:4       AKK185-10       5:6       AKS240-185       5:9         A25-18ETD       2:6       A50-20ETD       2:6       AKK185-12       5:6       AKS240-240A       5:9         A25-18ETT       2:5       A50-20ETT       2:5       AKK185-16       5:6       AKS240-35       5:9         A2519SRK       1:6       A50-25ETT       2:4       AKK240-10       5:6       AKS240-50       5:9         A2519SRK       1:6       A50-25ETD       2:6       AKK240-12       5:6       AKS240-70       5:9         A25-22ET       2:4       A50-25ETT       2:5       AKK240-16       5:6       AKS240-95       5:9         A25-22ETD       2:6       A6-12ET       2:4       AKK25-12       5:6       AKS240-95       5:9         A25-22ETT       2:5       A6-12ETD       2:6       AKK25-8       5:6       AKS25-10       5:9         A25-22ETT       2:5       A6-12ETD       2:6       AKK25-8       5:6       AKS25-10       5:8         A2524SFL       1:7       A6-12ETT       2:5       AKK300-12       5:6       AKS300-150       5:9         A2529SF       1:7       A6-14ETT2       2:9	A2517PSK	1:8				5:6	AKS240-150	5:9
A25-18ETT       2:5       A50-20ETT       2:5       AKK185-16       5:6       AKS240-35       5:9         A2519SR       1:6       A50-25ET       2:4       AKK240-10       5:6       AKS240-50       5:9         A2519SRK       1:6       A50-25ETD       2:6       AKK240-12       5:6       AKS240-70       5:9         A25-22ET       2:4       A50-25ETT       2:5       AKK240-16       5:6       AKS240-95       5:9         A25-22ETD       2:6       A6-12ET       2:4       AKK25-12       5:6       AKS25-10       5:9         A25-22ETT       2:5       A6-12ETD       2:6       AKK25-8       5:6       AKS25-10S       5:8         A25-22ETT       2:5       A6-12ETD       2:6       AKK25-8       5:6       AKS25-10S       5:8         A25-24SFL       1:7       A6-12ETT       2:5       AKK300-12       5:6       AKS25-16       5:9         A2529SF       1:7       A6-14ETT       2:8       AKK300-12SOLID       5:6       AKS300-185       5:9         A2529SFN       1:7       A6-14ETT       2:9       AKK300-16SOLID       5:6       AKS300-240A       5:9         A2530SFB       1:7       A6-18ETT       2:4 <td>A25-18ET</td> <td>2:4</td> <td></td> <td>2:4</td> <td>AKK185-10</td> <td>5:6</td> <td></td> <td></td>	A25-18ET	2:4		2:4	AKK185-10	5:6		
A2519SR       1:6       A50-25ET       2:4       AKK240-10       5:6       AKS240-50       5:9         A2519SRK       1:6       A50-25ETD       2:6       AKK240-12       5:6       AKS240-70       5:9         A25-22ET       2:4       A50-25ETT       2:5       AKK240-16       5:6       AKS240-95       5:9         A25-22ETD       2:6       A6-12ET       2:4       AKK25-12       5:6       AKS25-10       5:9         A25-22ETT       2:5       A6-12ETD       2:6       AKK25-8       5:6       AKS25-10S       5:8         A2524SFL       1:7       A6-12ETT       2:5       AKK300-12       5:6       AKS25-16       5:9         A2527SK       1:7       A6-14ET2       2:8       AKK300-12SOLID       5:6       AKS300-150       5:9         A2529SF       1:7       A6-14ETT2       2:9       AKK300-16       5:6       AKS300-185       5:9         A2529SFN       1:7       A6-14ETW2       2:10       AKK300-16SOLID       5:6       AKS300B-185       5:8         A2530SFB       1:7       A6-18ET       2:4       AKK300-20       5:6       AKS300B-185       5:8         A2532C       1:5       A6-18ETD       2:6 <td></td> <td></td> <td>A50-20ETD</td> <td>2:6</td> <td>AKK185-12</td> <td></td> <td></td> <td></td>			A50-20ETD	2:6	AKK185-12			
A2519SRK       1:6       A50-25ETD       2:6       AKK240-12       5:6       AKS240-70       5:9         A25-22ET       2:4       A50-25ETT       2:5       AKK240-16       5:6       AKS240-95       5:9         A25-22ETD       2:6       A6-12ET       2:4       AKK25-12       5:6       AKS25-10       5:9         A25-22ETT       2:5       A6-12ETD       2:6       AKK25-8       5:6       AKS25-10S       5:8         A2524SFL       1:7       A6-12ETT       2:5       AKK300-12       5:6       AKS25-16       5:9         A2527SK       1:7       A6-14ET2       2:8       AKK300-12SOLID       5:6       AKS300-150       5:9         A2529SF       1:7       A6-14ETT2       2:9       AKK300-16       5:6       AKS300-185       5:9         A2529SFN       1:7       A6-14ETW2       2:10       AKK300-16SOLID       5:6       AKS300-240A       5:9         A2530SFB       1:7       A6-18ET       2:4       AKK300-20       5:6       AKS300B-185       5:8         A2532C       1:5       A6-18ETD       2:6       AKK300B-12       5:7       AKS300SOLID-300       5:9         A2535SKW       1:8       A6-18ETT <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
A25-22ET       2:4       A50-25ETT       2:5       AKK240-16       5:6       AKS240-95       5:9         A25-22ETD       2:6       A6-12ET       2:4       AKK25-12       5:6       AKS25-10       5:9         A25-22ETT       2:5       A6-12ETD       2:6       AKK25-8       5:6       AKS25-10S       5:8         A2524SFL       1:7       A6-12ETT       2:5       AKK300-12       5:6       AKS25-16       5:9         A2527SK       1:7       A6-14ET2       2:8       AKK300-12SOLID       5:6       AKS300-150       5:9         A2529SF       1:7       A6-14ETT2       2:9       AKK300-16       5:6       AKS300-185       5:9         A2529SFN       1:7       A6-14ETW2       2:10       AKK300-16SOLID       5:6       AKS300-240A       5:9         A2530SFB       1:7       A6-18ET       2:4       AKK300-20       5:6       AKS300B-185       5:8         A2532G       1:5       A6-18ET2       2:8       AKK300-20SOLID       5:6       AKS300B-240A       5:8         A2532R       1:4       A6-18ETD       2:6       AKK300B-12       5:7       AKS305-10       5:9         A2535SKW       1:8       A6-18ETT								
A25-22ETD       2:6       A6-12ET       2:4       AKK25-12       5:6       AKS25-10       5:9         A25-22ETT       2:5       A6-12ETD       2:6       AKK25-8       5:6       AKS25-10S       5:8         A2524SFL       1:7       A6-12ETT       2:5       AKK300-12       5:6       AKS25-16       5:9         A2527SK       1:7       A6-14ET2       2:8       AKK300-12SOLID       5:6       AKS300-150       5:9         A2529SF       1:7       A6-14ETT2       2:9       AKK300-16       5:6       AKS300-185       5:9         A2529SFN       1:7       A6-14ETW2       2:10       AKK300-16SOLID       5:6       AKS300-240A       5:9         A2530SFB       1:7       A6-18ET       2:4       AKK300-20       5:6       AKS300B-185       5:8         A2532G       1:5       A6-18ET2       2:8       AKK300-20SOLID       5:6       AKS300B-240A       5:8         A2532R       1:4       A6-18ETD       2:6       AKK300B-12       5:7       AKS300SOLID-300       5:9         A2535SKW       1:8       A6-18ETT       2:5       AKK300B-16       5:7       AKS35-10       5:9								
A25-22ETT       2:5       A6-12ETD       2:6       AKK25-8       5:6       AKS25-10S       5:8         A2524SFL       1:7       A6-12ETT       2:5       AKK300-12       5:6       AKS25-16       5:9         A2527SK       1:7       A6-14ET2       2:8       AKK300-12SOLID       5:6       AKS300-150       5:9         A2529SF       1:7       A6-14ETT2       2:9       AKK300-16       5:6       AKS300-185       5:9         A2529SFN       1:7       A6-14ETW2       2:10       AKK300-16SOLID       5:6       AKS300-240A       5:9         A2530SFB       1:7       A6-18ET       2:4       AKK300-20       5:6       AKS300B-185       5:8         A2532G       1:5       A6-18ET2       2:8       AKK300-20SOLID       5:6       AKS300B-240A       5:8         A2532R       1:4       A6-18ETD       2:6       AKK300B-12       5:7       AKS300SOLID-300       5:9         A2535SKW       1:8       A6-18ETT       2:5       AKK300B-16       5:7       AKS35-10       5:9								
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BC13 6.43 F541 11.6 KH5-A51852-5 9.3 KRD16-6 4.11 BC5 6.27 F561 11.6 KH5-A51852-01-4 9.3 KRD16-6 4.11 BC5 6.47 F562 11.6 KH5-A51852-01-4 9.3 KRD18-00 4.11 BC6 6.43 F572 11.7 KL295 10.13 KRD18-10 4.11 BC6 6.43 F572 11.7 KL295 10.13 KRD18-12 4.11 BC6 6.43 F573 11.7 KL295 10.13 KRD18-14 4.11 BC6 6.43 F573 11.7 KL95 10.13 KRD18-14 4.11 BC6 6.43 F573 11.7 KL95 10.13 KRD18-14 4.11 BC6 6.43 F574 11.7 KL95 10.13 KRD18-14 4.11 BC8-9 6.25 F577 11.7 KL95 10.13 KRD18-16 4.11 BC8-9 6.27 F581 11.7 KR07-5-3 3.5 KRD18-10 4.11 BC8-9 6.27 F581 11.7 KR07-5-3 4.4 KRD18-16 4.11 CL90-185 4.21 F581 11.7 KR07-5-3 4.4 KRD18-16 4.11 CL90-185 4.21 F582 11.7 KR07-5-3 4.4 KRD18-10 4.11 CL90-185 4.21 F582 11.7 KR07-5-4 4.4 KRD18-0-10 4.11 CL20-30 4.21 F582 11.7 KR07-5-4 4.4 KRD18-0-10 4.11 CL20-30 4.21 F582 11.7 KR15-3 4.4 KRD18-0-10 4.11 CL20-30 4.21 F582 11.7 KR15-3 4.4 KRD18-0-10 4.11 CL20-30 4.21 F580 11.5 KR15-4 4.4 KRD2-0-0 4.11 CL20-30 4.21 G580 11.5 KR15-4 4.4 KRD2-0-0 4.11 CL20-30 4.21 G580 11.5 KR15-4 4.4 KRD2-0-0 4.11 CL20-30 4.21 G580 11.5 KR15-4 4.4 KRD2-0-0 4.11 CL20-30 4.21 G680 11.5 KR15-4 4.4 KRD2-0-0 4.11 CL20-30 6.6 G680 11.1 KR15-4 4.4 KRD2-0-0 4.11 CL20-30 6.1 G680 11.1 K		3:6						4:11
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BCS         6:37         FSGC         11:6         KHS-ASS095-1-4         9:3         KRD185-00         4:11           BCS         6:43         FS71C         11:7         KL298         10:32         KRD185-12         4:11           BCG         6:37         FS73C         11:7         KL55         10:31         KRD185-12         4:11           BCG         6:43         FS74C         11:7         KL85         10:31         KRD185-16         4:11           BCS-9         6:37         FS81C         11:7         KR0.75-3         3:5         KRD185-16         4:11           BCS-9         6:37         FS81D         11:7         KR0.75-3         3:5         KRD240-00         4:11           C16-25         4:21         FS81D         11:7         KR0.75-4         3:4         KRD185-8         4:11           C16-25         4:21         FS82C         11:7         KR0.75-4         3:4         KRD240-10         4:11           C16-25         4:21         FS82C         11:7         KR15-3         3:4         KR0240-10         4:11           C16-25         4:21         FS81D         11:7         KR15-3         4:4         KR0240-10         4:11								
BCS         6.43         FS7IC         11.7         KL2585         10.32         KRD185-10         4.31           BC6         6.27         FS72C         11.7         KL40         10.33         KRD185-12         4.31           BC6         6.43         FS74C         11.7         KL55         10.33         KRD185-16         4.11           BC8-9         6.25         FS77C         11.7         KB0.75-3         3.45         KRD185-10         4.11           BC8-9         6.43         FS81D         11.7         KR0.75-3         3.44         KRD185-10         4.11           BC8-9         6.43         FS81D         11.7         KR0.75-4         4.4         KRD240-10         4.11           C150-185         4-21         FS82C         11.7         KR0.75-3         3.5         KRD240-10         4.11           C16-2         4-21         FS82C         11.7         KR1.5-3         3.5         KRD240-10         4.11           C16-2         4-21         FS82C         11.7         KR1.5-3         3.5         KRD240-10         4.11           C12-3         4-21         FS81D1         11.5         KR1.5-4         3.5         KRD240-10         4.11								
BCG         6:25         F572C         11:7         KL40         10:13         KRD185-12         4:11           BCG         6:37         F573C         11:7         KL15         10:13         KRD185-16         4:11           BCG         6:43         F574C         11:7         KL15         10:13         KRD185-16         4:11           BCG-9         6:37         FS81C         11:7         KR0.75-3         3:5         KRD185-82         4:11           C150-185         4:21         FS83C         11:7         KR0.75-4         3:4         KRD185-8         4:11           C16-25         4:21         FS85C         11:7         KRD.55-4         4:4         KRD240-10         4:11           C16-25         4:21         FS85C         11:7         KRD.5-3         4:4         KRD240-10         4:11           C23         4:21         FS85C         11:7         KRD.5-3         4:4         KRD240-10         4:11           C23-0         4:21         FSB02         11:7         KRL5-3         4:4         KRD240-10         4:11           C240-300         4:21         FSHD23         11:5         KRL5-3         4:4         KRD240-16         4:11 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>								
BCG         6.37         F573C         11.7         K155         10.13         KRD185-16         4.11           BCG         6.43         F574C         11.7         K185         10.13         KRD185-10         4.11           BCG-9         6.25         F577C         11.7         K80,75-3         3.5         KRD185-8         4.11           BCG-9         6.43         FS81D         11.7         K80,75-3         3.4         KRD185-8         4.21           L50-185         4.21         FS85C         11.7         K80,75-4         4.4         KRD240-10         4.11           C150-185         4.21         FS86C         11.7         K81,5-3         3.5         KRD240-10         4.11           C16-2         4.21         FS86C         11.7         K81,5-3         3.5         KRD240-10         4.11           C23-3         4.21         FS86C         11.7         K81,5-3         3.5         KRD240-10         4.11           C24-300         4.21         FSHD31         11.5         K81,5-4         3.5         KRD240-10         4.11           C55-50         4.21         FSHD31         11.5         K81,5-5         3.5         KRD25-10         4.11								
BCG         6.43         FSYAC         1.17         KIBS         10.13         KRD185-20         4.11           BCR-9         6.37         FSBIC         11.7         KR0,75-3         3.5         KRD185-8         4.11           BCR-9         6.43         FSBID         11.7         KR0,75-34         3.5         KRD240-00         4.11           L150-185         4.21         FSBIC         11.7         KR0,75-34         3.5         KRD240-00         4.11           C16-25         4.21         FSBIC         11.7         KR15-3         3.5         KRD240-10         4.11           C16-25         4.21         FSBC         11.7         KR15-3         3.5         KRD240-12         4.11           C225-50         4.21         FSHD23         11.5         KR15-3         4.4         KRD240-20         4.11           C35-70         4.21         FSHD23         11.5         KR15-5         3.5         KRD240-20         4.11           C50-70         4.21         FSHD23         11.5         KR15-5         4.4         KRD25-00         4.11           C6-10         4.21         FSHD23         11.5         KR15-5         4.5         KRD240-20         4.11 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
BC8-9         6.25         FS7C         11.7         KR0,75-3         3.5         KR0185-8         4.11           BC8-9         6.43         FSBID         11.7         KR0,75-4         3.5         KR0240-00         4.11           C150-185         4.21         FSBC         11.7         KR0,75-4         4.4         KR0240-10         4.11           C16-25         4.21         FSBC         11.7         KR1,5-3         4.4         KR0240-10         4.11           C240-300         4.21         FSBC         11.7         KR1,5-3         4.4         KR0240-12         4.11           C240-300         4.21         FSH011         11.5         KR1,5-3         4.4         KR0240-12         4.11           C25-50         4.21         FSH023         11.5         KR1,5-4         4.4         KR025-00         4.11           C6-10         4.21         FSH021         11.6         KR1,5-5         3.5         KR025-12         4.11           C6-10         4.21         FSH062         11.6         KR1,5-5         4.4         KR025-12         4.11           C50-70         4.21         FSH062         11.6         KR1,5-5         4.4         KR020-12         4.11								
BC8-9         6:37         FSSILC         11:7         KR075-3         4.4         KRD185-8         4:11           C150-185         4:21         FS83C         11:7         KR075-4         4.4         KRD240-00         4:11           C150-185         4:21         FS85C         11:7         KR075-4         4.4         KRD240-12         4:11           C23         4:21         FS85C         11:7         KR15-3         3:5         KRD240-12         4:11           C240-300         4:21         FSHD11         11:5         KR15-3         3:5         KRD240-16         4:11           C55-50         4:21         FSHD33         11:5         KR15-5         3:5         KRD240-20         4:11           C50-70         4:21         FSHD31         11:5         KR15-5         3:5         KRD25-10         4:11           C50-70         4:21         FSHD62C         11:6         KR15-5         3:5         KRD25-10         4:11           C50-70         4:21         FSHD62C         11:6         KR15-5         3:5         KRD25-10         4:11           C50-70         4:22         GB102S         2:16         KR10-10         3:4         KRD25-1         4:11     <								
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C16-25 4:21 FS85C 11:7 KR1.5-3 3.5 KRD240-12 4:11 C240-300 4:21 FS8DC 11:7 KR1.5-3 4.4 KRD240-16 4:11 C240-300 4:21 FSHD21 11:5 KR1.5-4 3.5 KRD240-20 4:11 C25-50 4:21 FSHD23 11:5 KR1.5-4 3.5 KRD240-20 4:11 C25-50 4:21 FSHD31 11:5 KR1.5-5 3:5 KRD25-10 4:11 C6-10 4:21 FSHD31 11:5 KR1.5-5 3:5 KRD25-10 4:11 C6-10 4:21 FSHD31 11:5 KR1.5-5 3:5 KRD25-10 4:11 C59-120 4:21 GEB1025 2:16 KR1.0-10 3:5 KRD25-6 4:11 C59-120 4:21 GEB1025 2:16 KR1.0-10 3:5 KRD25-6 4:11 C59-120 4:21 GEB1025 2:16 KR1.0-10 3:5 KRD25-6 4:11 C59-120 4:21 GEB1025 2:16 KR1.0-10 3:5 KRD25-8 4:11 C52500 6:48 GEB3550 2:17 KR1.0-12 3:5 KRD300-00 4:12 C170 10:6 GEB3500 2:17 KR1.0-12 3:5 KRD300-10 4:12 C1710 10:6 GEB3500 2:17 KR1.0-12 3:5 KRD300-10 4:12 C1710 4:19 GEB4010C 2:16 KR1.0-4 3:5 KRD300-12 4:12 C1710 4:19 GEB4010C 3:23 KR1.0-4 3:5 KRD300-12 4:12 C1710 4:19 GEB4010C 3:23 KR1.0-4 3:5 KRD300-12 4:12 C1710 4:19 GEB5500 3:23 KR1.0-5 3:23 KR1.0-5 3:5 KRD300-12 4:12 C1710 4:19 GR80560C 3:23 KR1.0-5 3:4 KRD300-12 4:12 D82522 6:19 GR80560C 3:23 KR1.0-5 3:4 KRD300-12 4:12 D82522 6:19 GR80560C 3:22 KR1.0-6 3:5 KRD300-20 4:12 D82525 6:19 GR80560C 3:22 KR1.0-6 4:4 KRD350-2 4:12 D82527 6:19 GSA0760C 1:17 KR1.0-6-90CR 4:9 KRD35-1 4:11 D82533 6:19 GSA0760C 1:17 KR1.0-6-90CR 4:9 KRD35-1 4:11 D82533 6:19 GSA0760C 1:17 KR1.0-6-90CR 4:9 KRD35-1 4:11 D82533 6:19 GSA0760C 1:16 KR1.0-8 3:5 KRD300-10 4:12 D82535 3:20 GSW0560C 1:16 KR1.0-8 3:5 KRD300-10 4:12 D82535 3:20 GSW0560C 1:16 KR1.0-8 3:5 KRD300-10 4:12 D82538 6:19 GSA0760C 1:17 KR1.0-6-90CR 4:9 KRD35-1 4:11 D82538 6:19 GSA0760C 1:17 KR1.0-6-90CR 4:9 KRD35-1 4:11 D82538 6:19 GSA0760C 3:23 KR1.0-5 90CR 4:9 KRD35-1 4:11 D82538 6:19 GSA0760C 3:23 KR1.0-8 90CR 4:9 KRD35-1 4:11 D82538 6:19 GSA0760C 3:24 KR1.0-8 90CR 4:9 KRD35-1 4:11 D82538 6:19 GSA0760C 3:25 KR1.5 3:5 KRD000-1 4:12 KR1.0-8 90CR 4:12 KR1.0-8 90CR 4:12 KR1.0-8 90CR 4:12 KR1.0-8 90CR 4:12 KR1.0-8 90					-			
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C25-50         4:21         FSHD23         11:5         KR1,5-4         4.4         KRD25-00         4:11           C50-70         4:21         FSHD62C         11:6         KR1,5-5         3:5         KRD25-10         4:11           C70-95         4:21         GEB102S         2:16         KR10-10         3:5         KRD25-6         4:11           C95-120         4:21         GEB102SC         2:16         KR10-10         3:5         KRD25-8         4:11           C52500         6:48         GEB3550         2:17         KR10-12         3:5         KRD300-00         4:12           CT20         10:6         GEB4010C         2:16         KR10-4         3:5         KRD300-10         4:12           CUT10         4:19         GER4010C         2:16         KR10-4         3:5         KRD300-12         4:12           CUT16         4:19         GER0560         3:23         KR10-4         4:4         KRD300-14         4:12           CUT16         4:19         GKB0560         3:23         KR10-5         3:5         KRD300-16         4:12           D82522         6:19         GR80560L         3:22         KR10-6         3:5         KRD300-24         4:12 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
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G6-10         4:21         FSH062C         11:6         KR1,5-5         4.4         KR025-12         4:11           C70-95         4:21         GEB102S         2:16         KR10-10         3:5         KRD25-6         4:11           C95-120         4:21         GEB102SC         2:16         KR10-10         4:4         KRD25-8         4:11           C52500         6:48         GEB3550C         2:17         KR10-12         3:5         KRD300-10         4:12           CT20         10:6         GEB4010C         2:16         KR10-4         3:5         KRD300-12         4:12           CUT10         4:19         GEB4010C         2:16         KR10-4         3:5         KR0300-12         4:12           CUT16         4:19         GR80560         3:23         KR10-5         3:5         KR0300-16         4:12           CUT6         4:19         GR80560C         3:23         KR10-5         3:5         KR0300-24         4:12           D82522         6:19         GR80560C         3:22         KR10-6         3:5         KR0300-24         4:12           D82525         6:19         GR80560C         3:22         KR10-6         3:5         KR0300-24         4:12			l .		-			
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C95-120         4:21         GEB102SC         2:16         KR0-10         4.4         KRD25-8         4:11           C52500         6:48         GEB3550         2:17         KR10-12         3:5         KRD300-00         4:12           CT20         10:6         GEB4610C         2:16         KR10-4         3:5         KRD300-12         4:12           CUT10         4:19         GEB4010C-TWIN         2:15         KR10-4         3:5         KRD300-12         4:12           CUT16         4:19         GRB0560         3:23         KR10-5         3:5         KRD300-16         4:12           CUT6         4:19         GRB0560L         3:23         KR10-6         3:5         KRD300-20         4:12           CUT6         4:19         GRB0560L         3:22         KR10-6         3:5         KRD300-24         4:12           D82527         6:19         GRB0560L         3:22         KR10-6         3:4         KRD35-00         4:11           D82527         6:19         GSR0760C         1:17         KR10-6-90CR         4:9         KRD35-12         4:11           D82532         6:19         GSEA0340C         1:16         KR10-8         3:5         KRD35-14					-			
CS2500         6:48         GEB3550         2:17         KR10-12         3:5         KRD300-00         4:12           CT10         10:6         GEB450C         2:17         KR10-12         4:4         KRD300-10         4:12           CUT10         10:6         GEB4010C-TWIN         2:15         KR10-4         4:4         KRD300-12         4:12           CUT16         4:19         GEB4010C-TWIN         2:15         KR10-4         4:4         KRD300-14         4:12           CUT16         4:19         GEB0560C         3:23         KR10-5         3:5         KRD300-16         4:12           CUT6         4:19         GRB0560L         3:22         KR10-6         3:5         KRD300-20         4:12           DB2522         6:19         GKB0560L         3:22         KR10-6         3:5         KRD30-24         4:12           DB2527         6:19         GSA0760         1:17         KR10-6-9GR         4:8         KRD35-10         4:11           DB2532         6:19         GSEA0340C         1:16         KR10-8         3:5         KRD35-14         4:11           DB2532         3:20         GSW0560C         1:16         KR10-8         4:4         KRD35-16								
CT10         10:6         GEB3550C         2:17         KR10-12         4:4         KR0300-10         4:12           CT20         10:6         GEB4010C         2:16         KR10-4         3:5         KRD300-12         4:12           CUT10         4:19         GEB64010C-TWIN         2:15         KR10-4         4:4         KRD300-14         4:12           CUT16         4:19         GRB0560C         3:23         KR10-5         3:5         KRD300-16         4:12           CUT6         4:19         GRB0560L         3:23         KR10-6         3:5         KRD300-20         4:12           DB2522         6:19         GRB0560L         3:22         KR10-6         3:5         KRD300-24         4:12           DB2527         6:19         GSA0760         1:17         KR10-6-45GR         4:8         KR035-10         4:11           DB2532         6:19         GSA0760C         1:17         KR10-6-90GR         4:9         KR035-10         4:11           DB2538         6:19         GSEA0340C         1:16         KR10-8         3:5         KRD35-12         4:11           DK80325         3:20         GSW0560C         1:16         KR10-8-45GR         4:8         KR035-6 </td <td></td> <td></td> <td>l .</td> <td></td> <td></td> <td></td> <td></td> <td></td>			l .					
CT20         10.6         GEBA010C         2:16         KR10-4         3:5         KR300-12         4:12           CUT10         4:19         GEBA010C-TWIN         2:15         KR10-4         4:4         KRD300-14         4:12           CUT16         4:19         GRB0560         3:23         KR10-5         3:5         KRD300-20         4:12           CUT6         4:19         GRB0560L         3:23         KR10-6         4:4         KRD300-20         4:12           DB2522         6:19         GRB0560L         3:22         KR10-6         4:4         KRD300-24         4:12           DB2527         6:19         GSA0760         1:17         KR10-6-90GR         4:8         KRD35-10         4:11           DB2530         6:19         GSEA0340C         1:16         KR10-8         4:4         KRD35-12         4:11           DB2538         6:19         GSEA0340C         2:14         KR10-8         4:4         KRD35-14         4:11           DKB0325         3:20         GSW0560C         1:16         KR10-8-45GR         4:8         KR035-6         4:11           DKB0325         3:20         GSW04010         3:23         KR2,5-3         3:5         KR0400-0			1					
CUT10         4:19         GEB4010C-TWIN         2:15         KR10-4         4.44         KR0300-14         4:12           CUT16         4:19         GRB0560         3:23         KR10-5         3:4         KRD300-16         4:12           CUT6         4:19         GRB0560L         3:23         KR10-5         4:4         KRD300-20         4:12           DB2525         6:19         GRB0560L         3:22         KR10-6         3:4         KRD300-24         4:12           DB2527         6:19         GSA0760         1:17         KR10-6-95GR         4:8         KRD35-10         4:11           DB2532         6:19         GSA0760C         1:17         KR10-6-95GR         4:9         KRD35-12         4:11           DB2532         6:19         GSEA0340C         1:16         KR10-8         3:5         KRD35-14         4:11           DK80760         3:21         GWB4010         3:23         KR10-8         4:4         KRD35-6         4:11           DK80760         3:21         GWB4010         3:23         KR20-8         4:4         KRD35-6         4:11           DR80115         3:20         GWB4010C         3:23         KR25-3         3:5         KRD400-0			1					
CUT16         4.19         GRB0560         3.23         KR10-5         3.5         KR0300-16         4.12           CUT6         4.19         GRB0560C         3:23         KR10-6         3:5         KR0300-20         4:12           DB2522         6:19         GRB0560L         3:22         KR10-6         3:5         KR0300-24         4:12           DB2527         6:19         GSA0760C         1:17         KR10-6-45GR         4:8         KRD35-10         4:11           DB2530         6:19         GSEA0340C         1:16         KR10-8         3:5         KRD35-12         4:11           DB2538         6:19         GSEA0340C         1:16         KR10-8         3:5         KR035-14         4:11           DKB0325         3:20         GSEA0340C         1:16         KR10-8         3:5         KR035-16         4:11           DKB0760         3:21         GWB4010         3:23         KR10-8-90GR         4:9         KR035-8         4:11           DK80760         3:21         GWB4010         3:23         KR2,5-3         3:5         KR0400-00         4:12           DSA0725         1:15         GWB4099         3:23         KR2,5-3         3:5         KR0400-14			l .					
CUT6         4:19         GR80560C         3:23         KR10-5         4:4         KRD300-20         4:12           DB2522         6:19         GR80560L         3:22         KR10-6         3:5         KRD30-0-24         4:12           DB2525         6:19         GSA0760         1:17         KR10-6-45GR         4:8         KRD35-10         4:11           DB2532         6:19         GSA0760C         1:17         KR10-6-90GR         4:9         KRD35-12         4:11           DB2532         6:19         GSA0340C         1:16         KR10-8         3:5         KRD35-12         4:11           DK80325         3:20         GSW0560C         1:16         KR10-8         4:4         KRD35-16         4:11           DK80760         3:21         GW84010C         3:23         KR10-8-90GR         4:9         KRD35-6         4:11           DK80760         3:21         GW84010C         3:23         KR2.0-8-90GR         4:9         KRD35-6         4:11           DK30725         1:15         GW84099         3:23         KR2.5-3         3:5         KRD400-0         4:12           DV300         6:16         HB150         1:13         KR2,5-4         3:5         KR0400-14<			l .					
DB2522         6:19         GRB0560L         3:22         KR10-6         3:5         KRD30-24         4:12           DB2527         6:19         GRB0560LC         3:22         KR10-6         4:4         KRD35-00         4:11           DB2527         6:19         GSA0760C         1:17         KR10-6-45GR         4:8         KRD35-10         4:11           DB2532         6:19         GSEA0340C         1:16         KR10-8         3:5         KRD35-12         4:11           DB2538         6:19         GSEA0340C         1:16         KR10-8         3:5         KRD35-14         4:11           DKB0760         3:20         GSW0560C         1:16         KR10-8-90GR         4:8         KRD35-6         4:11           DKB0760         3:21         GWB4010         3:23         KR10-8-90GR         4:9         KRD35-8         4:11           DKB0715         3:20         GWB4010C         3:23         KR2,5-3         3:5         KRD400-00         4:12           DSA0725         1:15         GWB4099         3:23         KR2,5-3         3:5         KRD400-14         4:12           DV1300         6:16         HBL50         1:13         KR2,5-4         3:5         KRD400-14<			1					
DB2525         6:19         GRB0560LC         3:22         KR10-6         4:4         KRD35-00         4:11           DB2527         6:19         GSA0760         1:17         KR10-6-45GR         4:8         KRD35-10         4:11           DB2530         6:19         GSEA0340C         1:16         KR10-8         4:9         KRD35-14         4:11           DB2538         6:19         GSEA0340C         2:14         KR10-8         4:4         KRD35-16         4:11           DKB0325         3:20         GSW0560C         1:16         KR10-8-8-45GR         4:8         KRD35-6         4:11           DKB0760         3:21         GWB4010         3:23         KR10-8-90GR         4:9         KRD35-8         4:11           DR50115         3:20         GWB4010C         3:23         KR2,5-3         3:5         KRD400-00         4:12           DSA0125         1:15         GWB4099C         3:23         KR2,5-3         3:5         KRD400-12         4:12           DV1300C         6:16         HBL50         1:13         KR2,5-4         4:4         KRD400-12         4:12           DV250         6:17         HKL55         10:13         KR2,5-5         3:5         KRD400-2			l .					
DB2527         6:19         GSA0760         1:17         KR10-6-45GR         4:8         KRD35-10         4:11           DB2530         6:19         GSA0760C         1:17         KR10-6-90GR         4:9         KRD35-12         4:11           DB2532         6:19         GSEA0340C         1:16         KR10-8         3:5         KRD35-14         4:11           DKB0353         6:19         GSEA0340C         2:14         KR10-8         4:4         KRD35-16         4:11           DKB0760         3:21         GWB4010         3:23         KR10-8-90GR         4:9         KRD35-8         4:11           DKB0760         3:21         GWB4010C         3:23         KR2,5-3         3:5         KRD400-00         4:12           DSA0115         1:15         GWB40999         3:23         KR2,5-3         4:4         KRD400-12         4:12           DSA0725         1:15         GWB4099C         3:23         KR2,5-4         3:5         KRD400-14         4:12           DV1300C         6:16         HB150         1:13         KR2,5-4         4:4         KRD400-14         4:12           DV250         6:17         HKL55         10:13         KR2,5-5         3:5         KRD400-			l .					
DB2530         6:19         GSA0760C         1:17         KR10-6-90GR         4:9         KRD35-12         4:11           DB2532         6:19         GSEA0340C         1:16         KR10-8         3:5         KRD35-14         4:11           DKB0325         3:20         GSW0560C         1:16         KR10-8-90GR         4:9         KRD35-6         4:11           DKB0760         3:21         GWB4010         3:23         KR10-8-90GR         4:9         KRD35-8         4:11           DRB0115         3:20         GWB4010C         3:23         KR2,5-3         3:5         KRD400-00         4:12           DSA0115         1:15         GWB4099         3:23         KR2,5-3         3:5         KRD400-12         4:12           DSA0725         1:15         GWB4099C         3:23         KR2,5-4         3:5         KRD400-14         4:12           DV1300C         6:16         HB150         1:13         KR2,5-5         3:5         KRD400-14         4:12           DV250         6:17         HKL55         10:13         KR2,5-6         3:5         KRD400-24         4:12           EB0560         1:19         HKS34         10:7         KR2,5-6         4:4         KRD500-14<			l .					
DB2532         6:19         GSEA0340C         1:16         KR10-8         3:5         KRD35-14         4:11           DB2538         6:19         GSEA0340C         2:14         KR10-8         4:4         KRD35-16         4:11           DKB0325         3:20         GSW0560C         1:16         KR10-8-45GR         4:8         KRD35-6         4:11           DKB0760         3:21         GWB4010         3:23         KR10-8-90GR         4:9         KRD35-8         4:11           DRB0115         3:20         GWB4010C         3:23         KR2,5-3         3:5         KRD400-00         4:12           DSA0725         1:15         GWB4099C         3:23         KR2,5-3         4:4         KRD400-12         4:12           DV1300         6:16         HB150         1:13         KR2,5-4         3:5         KRD400-14         4:12           DV1300C2         6:16         HKL40         10:13         KR2,5-5         3:5         KRD400-20         4:12           DV250         6:17         HKL85         10:13         KR2,5-6         3:5         KRD500-0         4:12           EB0560         1:19         HKS34         10:7         KR2,5-6         3:5         KRD500-12			l .					
DB2538         6:19         GSEA0340C         2:14         KR10-8         4:4         KRD35-16         4:11           DKB0325         3:20         GSW0560C         1:16         KR10-8-45GR         4:8         KRD35-6         4:11           DKB0760         3:21         GWB4010         3:23         KR10-8-90GR         4:9         KRD35-8         4:11           DR80115         3:20         GWB4010C         3:23         KR2,5-3         3:5         KRD400-00         4:12           DSA0115         1:15         GWB4099         3:23         KR2,5-3         3:5         KRD400-12         4:12           DSA0725         1:15         GWB4099C         3:23         KR2,5-4         3:5         KRD400-14         4:12           DV1300         6:16         HB150         1:13         KR2,5-4         4:4         KRD400-16         4:12           DV250         6:17         HKL55         10:13         KR2,5-5         3:5         KRD400-20         4:12           EB0560         1:19         HKL85         10:13         KR2,5-6         3:5         KRD500-10         4:12           EB1025         1:19         HKS534         10:7         KR2,5-6         4:4         KRD500-12								
DKB0325         3:20         GSW0560C         1:16         KR10-8-45GR         4:8         KRD35-6         4:11           DKB0760         3:21         GWB4010         3:23         KR10-8-90GR         4:9         KRD35-8         4:11           DRB0115         3:20         GWB4010C         3:23         KR2,5-3         3:5         KRD400-00         4:12           DSA0115         1:15         GWB4099         3:23         KR2,5-3         4:4         KRD400-12         4:12           DSA0725         1:15         GWB4099C         3:23         KR2,5-4         3:5         KRD400-14         4:12           DV1300C         6:16         HBL50         1:13         KR2,5-4         4:4         KRD400-16         4:12           DV1300C2         6:16         HKL40         10:13         KR2,5-5         3:5         KRD400-20         4:12           EB0560         1:19         HKL85         10:13         KR2,5-6         3:5         KRD500-00         4:12           EB0560         2:19         HKS34         10:7         KR2,5-6         4:4         KRD500-12         4:12           EB1025         1:19         HKS63         10:8         KR4-3         3:5         KRD500-14								
DKB0760         3:21         GWB4010         3:23         KR10-8-90GR         4:9         KRD35-8         4:11           DR80115         3:20         GWB4010C         3:23         KR2,5-3         3:5         KRD400-00         4:12           DSA0715         1:15         GWB4099         3:23         KR2,5-3         4:4         KRD400-12         4:12           DV1300         6:16         HB150         1:13         KR2,5-4         3:5         KRD400-16         4:12           DV1300C2         6:16         HKL40         10:13         KR2,5-5         3:5         KRD400-20         4:12           DV250         6:17         HKL55         10:13         KR2,5-5         4:4         KRD400-24         4:12           EB0560         1:19         HKS34         10:7         KR2,5-6         3:5         KRD500-10         4:12           EB0560         3:25         HKS35F         10:8         KR4-3         3:5         KRD500-14         4:12           EB1025         1:19         HKS60F         10:8         KR4-4         3:5         KRD500-16         4:12           EB1025         3:25         HKS60F         10:8         KR4-4         3:5         KRD500-10         4:								
DRB0115         3:20         GWB4010C         3:23         KR2,5-3         3:5         KRD400-00         4:12           DSA0115         1:15         GWB4099         3:23         KR2,5-3         4:4         KRD400-12         4:12           DSA0725         1:15         GWB4099C         3:23         KR2,5-4         3:5         KRD400-14         4:12           DV1300         6:16         HB150         1:13         KR2,5-5         3:5         KRD400-16         4:12           DV1300C2         6:16         HKL40         10:13         KR2,5-5         3:5         KRD400-20         4:12           DV250         6:17         HKL55         10:13         KR2,5-5         4:4         KRD400-24         4:12           EB0560         1:19         HKL85         10:13         KR2,5-6         3:5         KRD500-00         4:12           EB0560         3:25         HKS34         10:7         KR2,5-6         3:5         KRD500-12         4:12           EB1025         1:19         HKS50         10:7         KR4-3         3:5         KRD500-14         4:12           EB1025         1:19         HKS60F         10:8         KR4-3         3:5         KRD500-16         4:			GWB4010	3:23	KR10-8-90GR	4:9		
DSA0725         1:15         GWB4099C         3:23         KR2,5-4         3:5         KRD400-14         4:12           DV1300         6:16         HB150         1:13         KR2,5-4         4:4         KRD400-16         4:12           DV1300C2         6:16         HKL40         10:13         KR2,5-5         3:5         KRD400-20         4:12           DV250         6:17         HKL55         10:13         KR2,5-5         4:4         KRD400-24         4:12           EB0560         1:19         HKL85         10:13         KR2,5-6         3:5         KRD500-00         4:12           EB0560         2:19         HKS34         10:7         KR2,5-6         4:4         KRD500-12         4:12           EB1025         1:19         HKS35F         10:8         KR4-3         3:5         KRD500-14         4:12           EB1025         1:19         HKS60F         10:8         KR4-4         3:5         KRD500-16         4:12           EB3550         1:19         HKS80         10:8         KR4-4         4:4         KRD500-24         4:12           EB3550         1:19         HYD.SLANG KPL. 2,4M ERG PS710E         6:57         KR4-5         3:5         KRD50-10	DRB0115		GWB4010C		KR2,5-3	3:5	KRD400-00	
DSA0725         1:15         GWB4099C         3:23         KR,5-4         3:5         KRD400-14         4:12           DV1300         6:16         HB150         1:13         KR2,5-4         4:4         KRD400-16         4:12           DV1300C2         6:16         HKL40         10:13         KR2,5-5         3:5         KRD400-20         4:12           DV250         6:17         HKL55         10:13         KR2,5-5         4:4         KRD400-24         4:12           EB0560         1:19         HKL85         10:13         KR2,5-6         3:5         KRD500-00         4:12           EB0560         2:19         HKS34         10:7         KR2,5-6         4:4         KRD500-12         4:12           EB1025         1:19         HKS35F         10:8         KR4-3         3:5         KRD500-14         4:12           EB1025         1:19         HKS60F         10:8         KR4-4         3:5         KRD500-16         4:12           EB3550         1:19         HKS80         10:8         KR4-4         4:4         KRD500-24         4:12           EB3550         1:19         HYD.SLANG KPL. 2,4M ERG PS710E         6:57         KR4-5         3:5         KRD50-16					-	4:4		
DV1300         6:16         HB150         1:13         KR2,5-4         4:4         KRD400-16         4:12           DV1300C2         6:16         HKL40         10:13         KR2,5-5         3:5         KRD400-20         4:12           DV250         6:17         HKL55         10:13         KR2,5-5         4:4         KRD400-24         4:12           EB0560         1:19         HKS34         10:7         KR2,5-6         3:5         KRD500-00         4:12           EB0560         2:19         HKS34         10:7         KR2,5-6         4:4         KRD500-12         4:12           EB0560         3:25         HKS35F         10:8         KR4-3         3:5         KRD500-12         4:12           EB1025         1:19         HKS50         10:7         KR4-3         3:5         KRD500-16         4:12           EB1025         2:19         HKS60F         10:8         KR4-4         3:5         KRD500-20         4:12           EB3550         1:19         HKS80         10:8         KR4-4         4:4         KRD500-24         4:12           EB3550         2:19         HYD.SLANG KPL. 2,4M ERG PS710E         6:57         KR4-5         3:5         KRD50-12	DSA0725		GWB4099C		-	3:5	KRD400-14	
DV250         6:17         HKL55         10:13         KR2,5-5         4:4         KRD400-24         4:12           EB0560         1:19         HKL85         10:13         KR2,5-6         3:5         KRD500-00         4:12           EB0560         2:19         HKS34         10:7         KR2,5-6         4:4         KRD500-12         4:12           EB0560         3:25         HKS35F         10:8         KR4-3         3:5         KRD500-14         4:12           EB1025         1:19         HKS50         10:7         KR4-3         4:4         KRD500-16         4:12           EB1025         2:19         HKS60F         10:8         KR4-4         3:5         KRD500-20         4:12           EB3550         1:19         HKS80         10:8         KR4-4         4:4         KRD500-24         4:12           EB3550         1:19         HYD.SLANG KPL. 2,4M ERG PS710E         6:57         KR4-5         3:5         KRD50-10         4:11           EB4010         1:19         HYD.SLANG KPL. 2,4M ERGO PS710E         6:57         KR4-6         3:5         KRD50-8         4:11           EB4010         2:19         HYD.SLANG KPL. 5M ERGO PS710R         6:57         KR6-4         4	DV1300	6:16	HB150	1:13	KR2,5-4	4:4	KRD400-16	4:12
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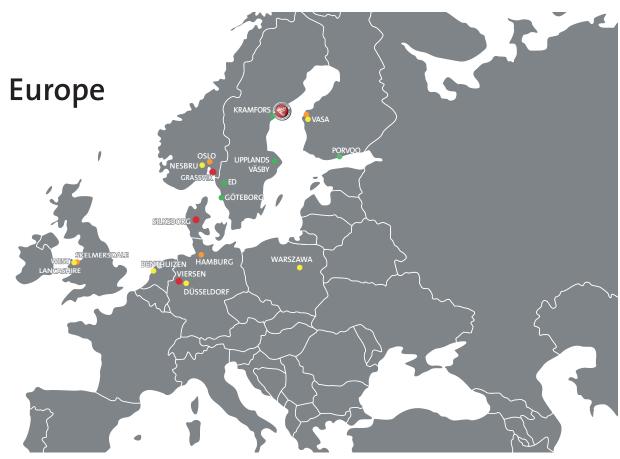


















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