

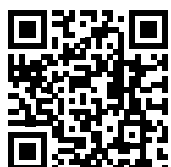
1

Connectors

EP series

Railway connectors for the
electro-pneumatic brake system and
emergency brake override
according to UIC 541-5 VE

Catalogue F121.en



More information
schaltbau.com

Connector to UIC standard 541-5 VE, EP Series

The connector is designed in accordance with the specifications of the international railway standard UIC 541-5. It adds to the range of our well-proven connectors for the railway industry. This heavy-duty connector is designed to ensure the electrical connection within a train for the electro-pneumatic brakes (EP brakes) as well as the bypass of an electro-pneumatic emergency brake. Both systems have functions which overlap through

their control and monitoring elements. They are fed by a common electrical cable that runs the length of the train. Integrated in the receptacle is a switching element as pilot contact which is used for feedback signalling a plug being mated, whereas the end of train is signalled by means of a pin contact in the dummy receptacle.

Features

EP series

- Feedback**
 - Plug being mated: via a switching element integrated in the receptacle shell
 - End of train: via a pin contact in the dummy receptacle
- Shell**
 - Receptacle shell with metal handle
 - Metal latch locking: Handle of receptacle and plug when mated
 - Better protection against splash water

- Contacts**
 - High-quality, screw machine contacts
 - Gold-plated or silver-plated contact surface
 - Crimp terminals

- Flammability:**
 - Meets the requirements of UL94-V0 and the following fire-protection standards: EN 45545, NF F1610/2, NF F611030

Applications


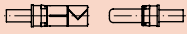
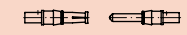
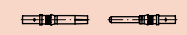
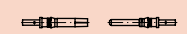
EP series

- DMUs, EMUs, rail cars, and passenger coaches**
 - Power and signal transfer for electro-pneumatic brakes as well as electro-pneumatic emergency brake override (EBO)

- Freight wagons**
 - Power and signal transfer for electro-pneumatic brakes

Specifications

EP series

EP series	UIC 541-5VE		
Applicable standard	UIC 541-5VE		
Contact arrangement and identification			
Pin insert: Rear view Socket insert: Front view			
Rated voltage	250 V		
Contacts	Contact cavities	Wire gauge	Rated current
 Crimp contacts P	1, 2, 3, 4	10 mm ²	35 A
 Crimp contacts C	A, B	6 mm ²	25 A
 Crimp contacts H	C, E	0.75 ... 1.0 mm ²	6 A
 Crimp contacts H	D	2.5 mm ²	12 A
---	F, G	empty	---
Terminal type	Crimpen		
Pilot contact	Integrated in receptacle shell together with 1 S870 Series SPDT. 10 A, s. a. Catalogue D70.en		
Contact resistance	IEC 60512-2	≤ 2 mΩ	
Operating temperature range	-50 °C ... +80 °C		
Degree of protection	EN 60529	IP69K when mated or receptacle closed	
Mechanical endurance	IEC 60512-5, test 9a	> 10,000 mating cycles	
Materials			
Receptacle shell	Aluminium die-cast		
Plug shell	Polyamide PA 6.6, black		
Inserts	for plug and receptacle: Polyamide PA 6.6, black		
Seals	Silicone		
Contacts	Copper wrought alloy, crimpable		
Finish	Silver or gold plated		

Item no. EP series

• **EP plug** Example: **EP SK Lxxxx**

Series ↑

EP

Connector type ↑

SK	Connector cable, single ended
VK	Connector cable, double ended
ST	Plug

Cable length (connector type SK and VK only) ↑

Lxxxx Cable length to customer requirements

• **EP receptacle** Example: **EP DK R1 S1 E1 Lxxxx**

Series ↑

EP

Connector type ↑

DK	Receptacle with connector cable
KD	Receptacle
BD	Dummy receptacle

Backshell ↑

R0	---
R1	with cable gland M40x1.5
R2	with adapter Pg29
R3	without adapter
R4	made of metal

Pilot contact ↑

S0	---
S1	with snap-action switch and terminal block

Drainage slots ↑

E0	---
E1	with drainage slots

Cable length (connector type DK only) ↑

Lxxxx Cable length to customer requirements

• **Accessories** Example: **EP A2**

Series ↑

EP

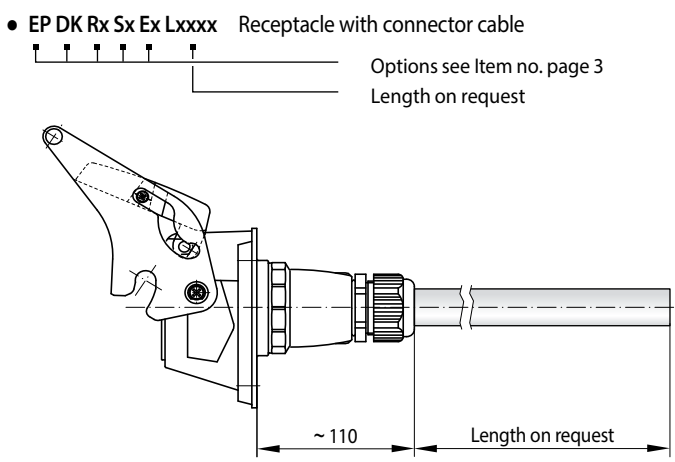
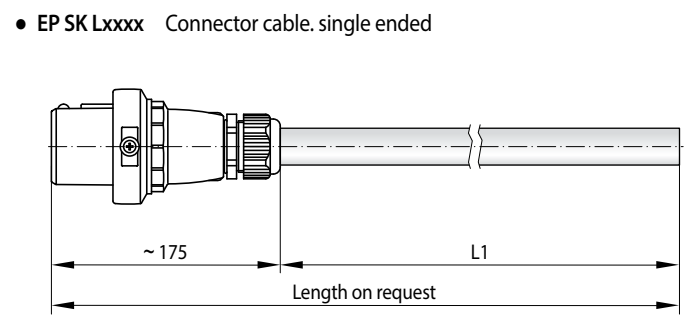
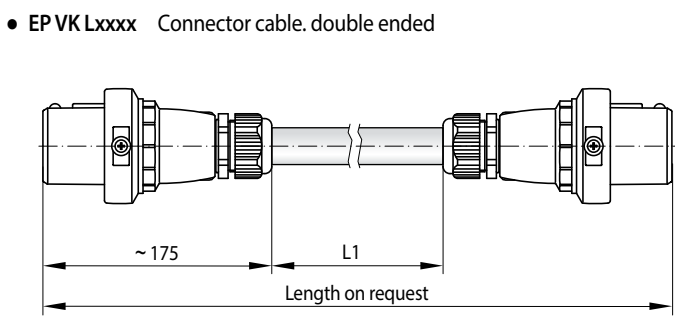
Type ↑

A1	Junction box with 11 pole terminal block
A2	Junction box with 9 pole terminal block

Note:
Presented in this catalogue are only stock items which can be supplied in short delivery time. For some variants minimum quantities apply. Please do not hesitate to ask for the conditions.

Special variants:
If you need a special variant of the contactor, please do not hesitate to contact us. Maybe the type of contactor you are looking for is among our many special designs. If not, we can also supply customized designs. In this case, however, minimum order quantities apply.

Pre-assembled cables EP series



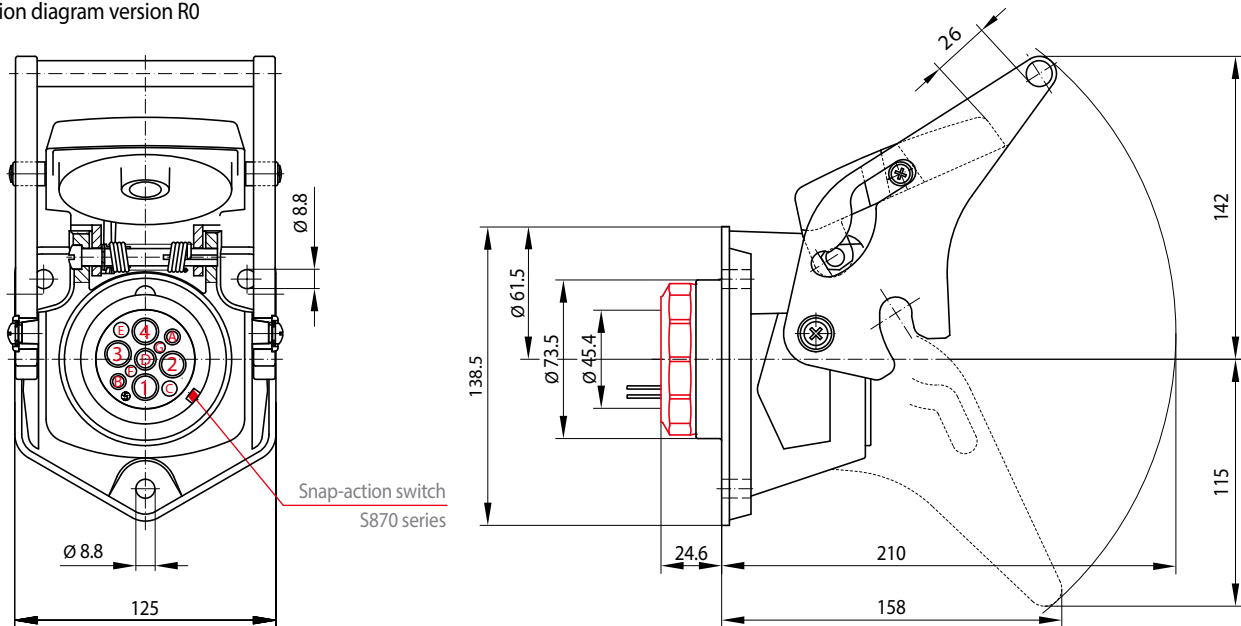
EP KD Rx Sx Ex Receptacle, pin contacts included

EP series

EP BD Rx Sx Ex Dummy receptacle, 1 pin contact for feedback included

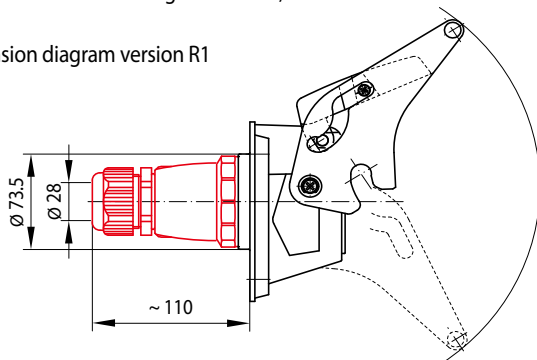
- **EP KD R0 Sx Ex** Receptacle without backshell
- **EP BD R0 Sx Ex** Dummy receptacle without backshell

Dimension diagram version R0



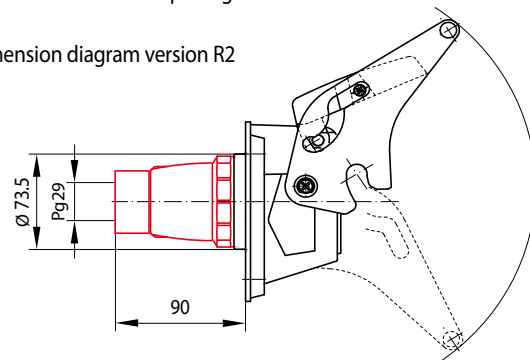
- **EP KD R1 Sx Ex** Receptacle with backshell and cable gland M40x1,5
- **EP BD R1 Sx Ex** Dummy receptacle with backshell and cable gland M40x1,5

Dimension diagram version R1



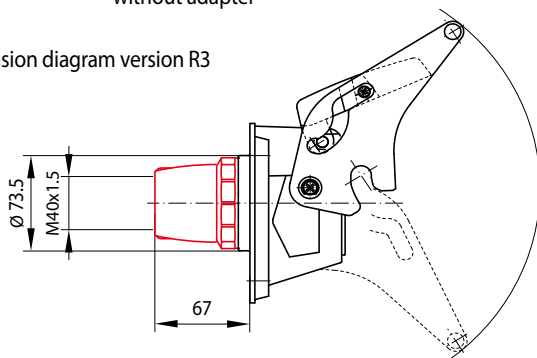
- **EP KD R2 Sx Ex** Receptacle with backshell and adapter Pg29
- **EP BD R2 Sx Ex** Dummy receptacle with backshell and adapter Pg29

Dimension diagram version R2



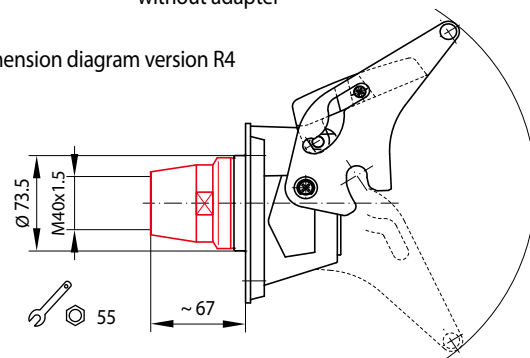
- **EP KD R3 Sx Ex** Receptacle with backshell without adapter
- **EP BD R3 Sx Ex** Dummy receptacle with backshell without adapter

Dimension diagram version R3



- **EP KD R4 Sx Ex** Receptacle with metal backshell without adapter
- **EP BD R4 Sx Ex** Dummy receptacle with metal backshell without adapter

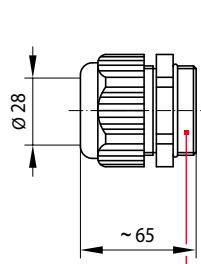
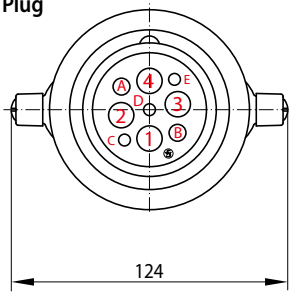
Dimension diagram version R4



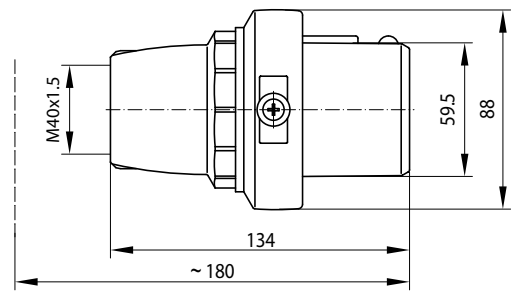
EP ST Plug, socket contacts included

EP series

• Plug



Cable gland M40x1.5 Fs sw with integrated strain relief



Total length including cable gland M40x1.5

EP A1, EP A2 Cable junction box

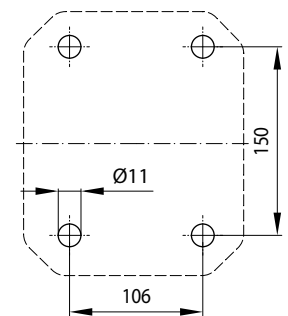
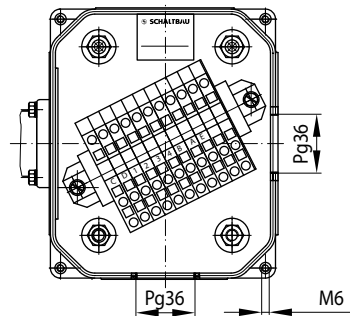
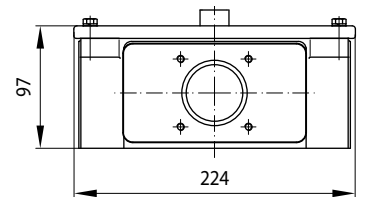
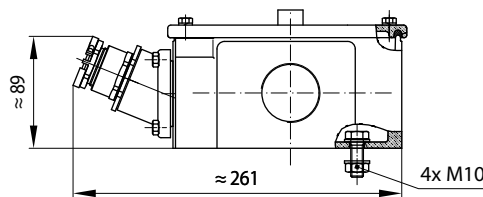
Accessories

Cable junction box

Junction box for holding a preassembled connector cable such as EP DK R1 S1 E1 L3000.

The following variants are available:

Item no.	Description
EP A1	Junction box with 11 pole terminal block for receptacles with pilot contact (S1)
EP A2	Junction box with 9 pole terminal block for receptacles without pilot contact (S0)

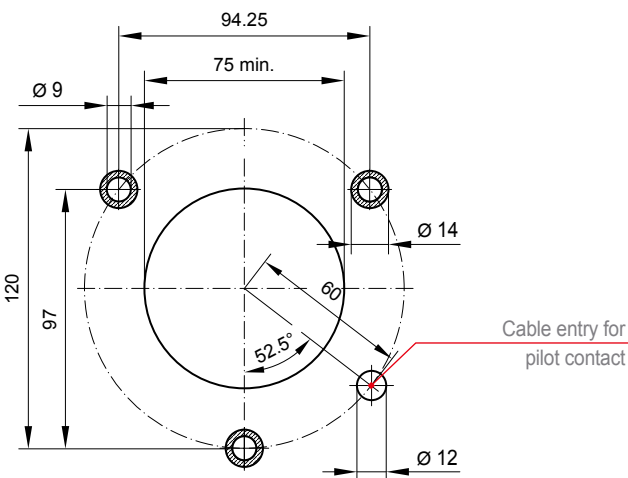


i To be mounted via 4 M10 screws at the bottom of the box, see dimension diagram.

Mounting holes

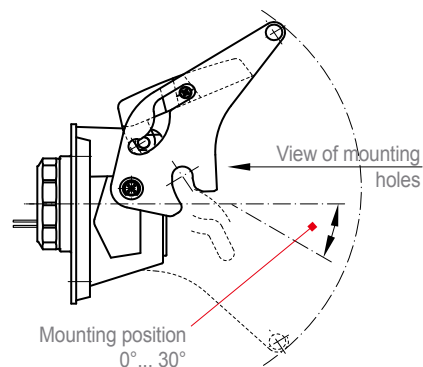
EP series

Mounting holes of receptacle and dummy receptacle:



Please observe the following instructions::

- Metal plate must be earthed
- Surface finish of metal plate: Rz 6.3 ... 12.5 µm
- Terminal block for pilot contact: wire gauge 2.5 mm² max.
- Earth connection via mounting holes
- Tightening torque 15 Nm min
- Mounting position: 0° up to -30°

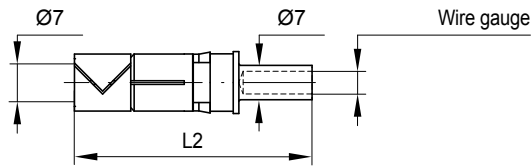
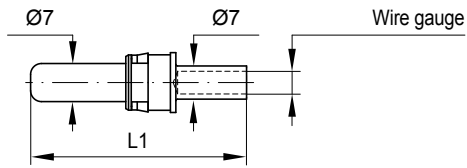


- i** • Mounting holes: Front view
- Hatched part of drawing free of lacquer, zinc or tin plated

Contacts Crimp contacts (pin/socket)

EP series

• Crimp contacts P for cavities 1, 2, 3, 4



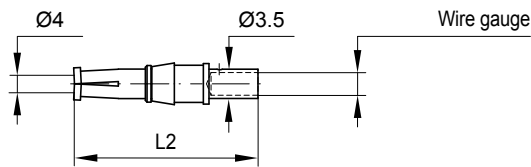
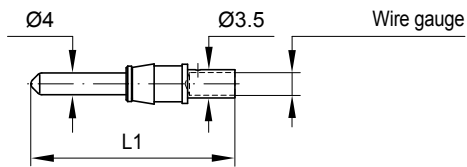
Item no.	L1	Ordering code Description
1-1440-821556	39.7	SPC-10.0-Ag Pin contact P for receptacle
1-1440-821545	39.7	SPC-2.5-Ag* Pin contact P for dummy receptacle

Item no.	L2	Ordering code Description
1-1440-821534	42.2	BPC-10.0-Ag Socket contact P for plug

Wire gauge	Rated current
10 mm ²	35 A
2.5 mm ²	12 A

* For feedback signalling end of train only one pin contact is implemented in contact cavity 4 of a dummy receptacle

• Crimp contacts C for cavities A, B

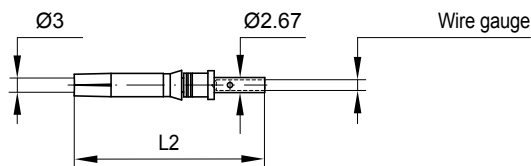
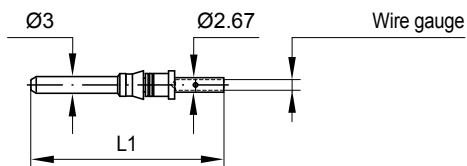


Item no.	L1	Ordering code Description
1-1440-316407	37.5	PC-C/6.00-Ag Pin contact C for receptacle

Item no.	L2	Ordering code Description
1-1440-316394	32.6	SC-C/6.00-Ag Socket contact C for plug

Wire gauge	Rated current
6 mm ²	25 A

• Crimp contacts H for cavities C, E

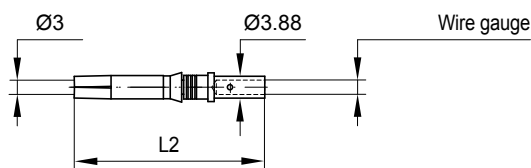
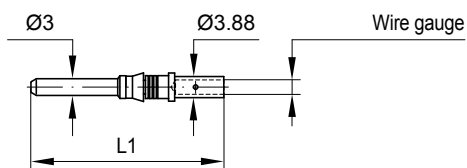


Item no.	L1	Ordering code Description
1-1440-3802759	35.5	SHC-1.00-Au-30 Pin contact H for receptacle

Item no.	L2	Ordering code Description
1-1440-802748	33.8	BHC-1.00-Au-30 Socket contact H for plug

Wire gauge	Rated current
1 mm ²	6 A

• Crimp contacts H for cavities D



Item no.	L1	Ordering code Description
1-1440-821216	35.5	SHC-2.50-Au-30 Pin contact H for receptacle

Item no.	L2	Ordering code Description
1-1440-821192	33.8	BHC-2.50-Au-30 Socket contact H for plug

Wire gauge	Rated current
2.5 mm ²	6 A

Tools

EP series

- **CTM-U/≤120** Crimp tools for contacts P

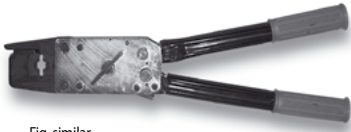


Fig. similar

Item no.	Ordering code / Description
1-1440-283794	CTM-U/≤120 Crimping tool for crimping insert CEP-120
1-1440-283807	CID-H/≤120/S Crimp insert for 10 mm ² ... 120 mm ² , contacts P / 10 mm ²

- **CTM-I/≤AWG12** Crimp tools for contacts H*



Fig. similar

Item no.	Ordering code / Description
1-1440-357714	CTM-I/≤AWG12 Crimping tool for contacts H* / 2,50 mm ²
1-1440-357718	CLM-I/2.50 Crimp locator for contact positioning

* for crimp contacts SHC-2.50-xx-30, BHC-2.50-xx-30

- **CTM-H/≤6.00** Crimp tools for contacts C and H



Fig. similar

Item no.	Ordering code / Description
1-1440-339551	CTM-H/≤6.00 Crimp tool for AWG 25 ... 9 (0.14 mm ² ... 6 mm ²), contacts P / 2.50 mm ² , C / 6.00 mm ² , H** / 1.00 mm ²

** not for crimp contacts SHC-2.50-xx-30, BHC-2.50-xx-30

- **ETC-P, ETC-C/H, ETC-B** Extraction tools



Fig. similar

Item no.	Ordering code / Description
1-1440-780933	ETC-P Extraction tool for contacts, contact insert cavities 1, 2, 3, 4
1-1440-267598	ETC-C/H Extraction tool for contacts, contact insert cavities A, B
1-1440-201918	ETC-B Extraction tool for contacts, contact insert cavities C, D, E

Schaltbau GmbH

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with compliments:



The production facilities of Schaltbau GmbH have been IRIS certified since 2008.



Certified to DIN EN ISO 14001 since 2002. For the most recent certificate visit our website.



Certified to DIN EN ISO 9001 since 1994. For the most recent certificate visit our website.

Electrical Components and Systems for Railway Engineering and Industrial Applications

Connectors

- Connectors manufactured to industry standards
- Connectors to suit the special requirements of communications engineering (MIL connectors)
- Charging connectors for battery-powered machines and systems
- Connectors for railway engineering, including UIC connectors
- Special connectors to suit customer requirements

Snap-action switches

- Snap-action switches with positive opening operation
- Snap-action switches with self-cleaning contacts
- Snap-action switch made of robust polyetherimide (PEI)
- Snap-action switch with two galvanically isolated contact bridges
- Special switches to suit customer requirements

Contactors Emergency disconnect switches

- Single and multi-pole DC contactors
- High-voltage AC/DC contactors
- Contactors for battery powered vehicles and power supplies
- Contactors for railway applications
- Terminal bolts and fuse holders
- DC emergency disconnect switches
- Special contactors to suit customer requirements

Electrics for rolling stock

- Equipment for driver's cab
- Equipment for passenger use
- High-voltage switchgear
- High-voltage heaters
- High-voltage roof equipment
- Equipment for electric brakes
- Design and engineering of train electrics to customer requirements