

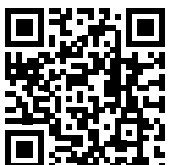
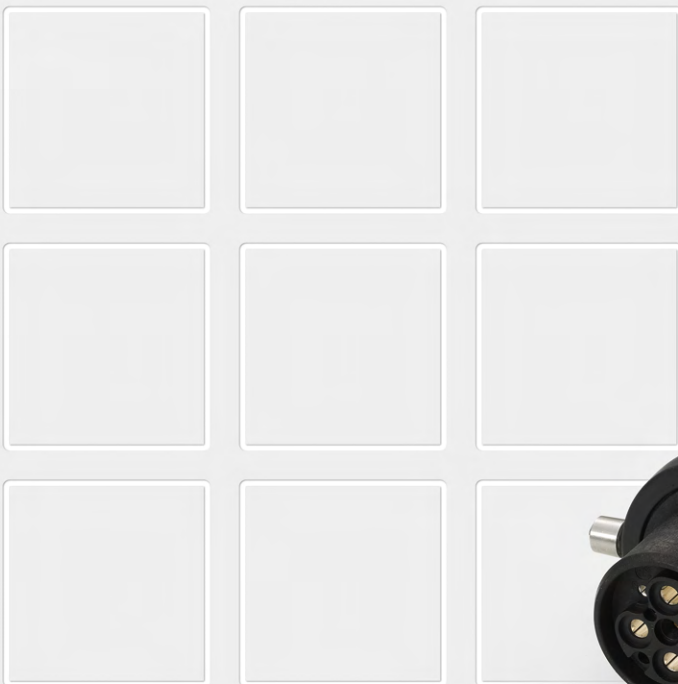
1

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**


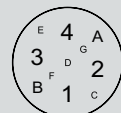
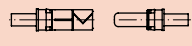
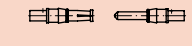
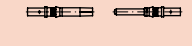
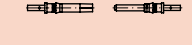
Power and signal transfer for electro-pneumatic brakes as well as electro-pneumatic emergency brake override (EBO)

-  **Freight wagons**

Power and signal transfer for electro-pneumatic brakes

Specifications

EP series

EP series	UIC 541-5VE		
Applicable standard			
Contact arrangement and identification	 		
Pin insert: Rear view Socket insert: Front view			
Rated voltage	250 V		
Contacts	Contact cavities	Wire gauge	Rated current
	1, 2, 3, 4	10 mm ²	35 A
	A, B	6 mm ²	25 A
	C, E	0.75 ... 1.0 mm ²	6 A
	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		

Ordering code

EP series

• EP plug

Example: **EP SK L3000**

Series

EP

Connector type

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

Cable length (connector type SK and VK only)

- L2000 Cable length 2,000 mm
- L3000 Cable length 3,000 mm
- L4500 Cable length 4,500 mm

• Accessories

Example: **EP A2**

Series

EP

Type

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

• EP receptacle

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

Series

EP

Connector type

- KD Receptacle
- BD Dummy receptacle
- DK Receptacle with connector cable

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



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.

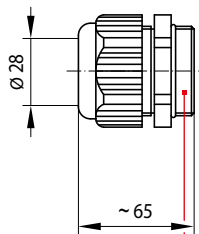
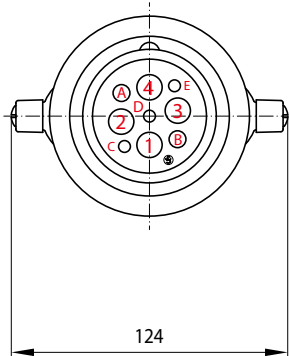
Special variants:

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.

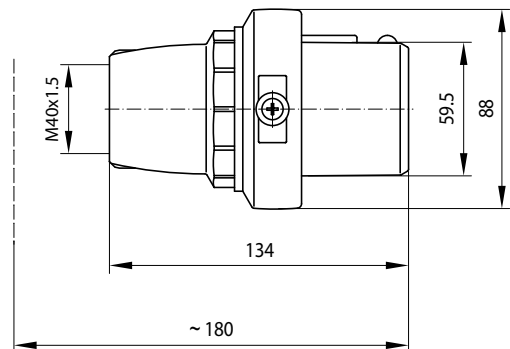
EP ST Plug, socket contacts included

EP series

• Plug



Cable gland M40x1.5 Fs sw with integrated strain relief



Total length including cable gland M40x1.5

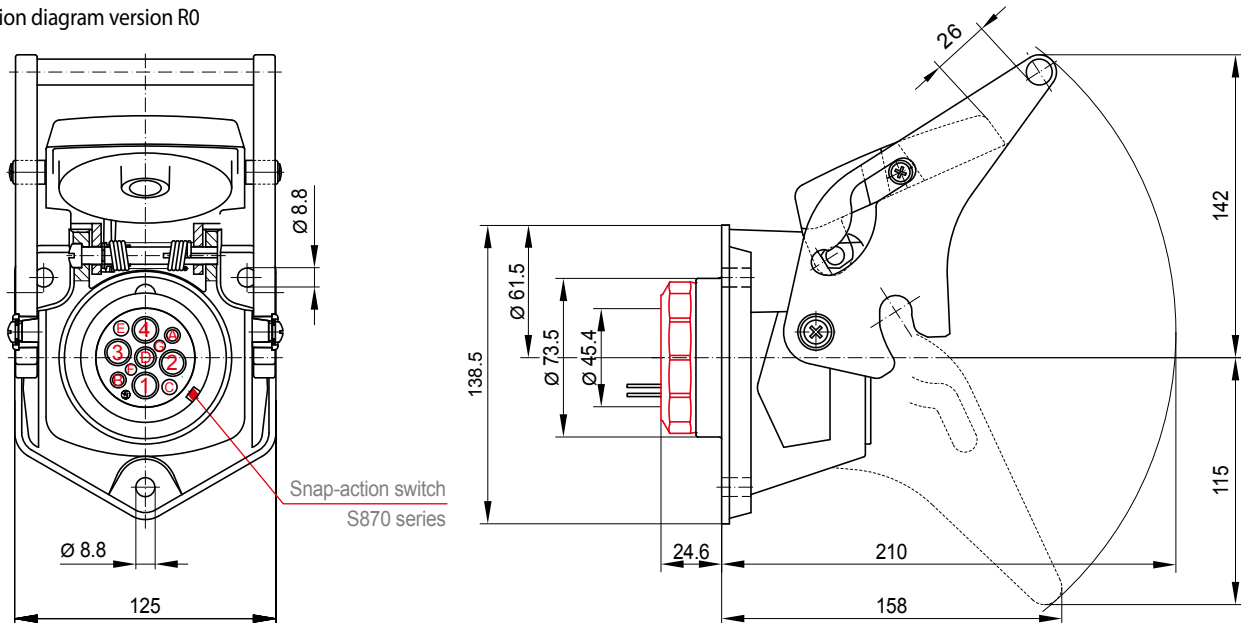
EP KD Rx Sx Ex Receptacle, pin contacts included

EP series

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

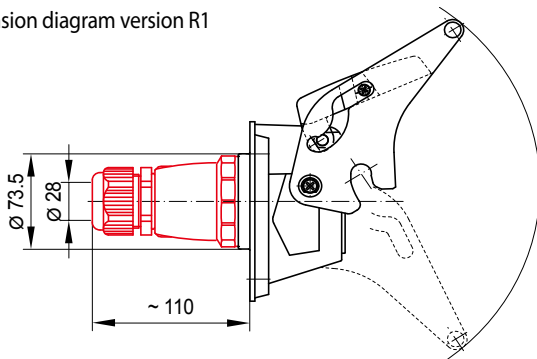
- **EP KD R0 Sx Ex** Receptacle without backshell
- **EP BD R0 Sx Ex** Dummy receptacle without backshell

Dimension diagram version R0



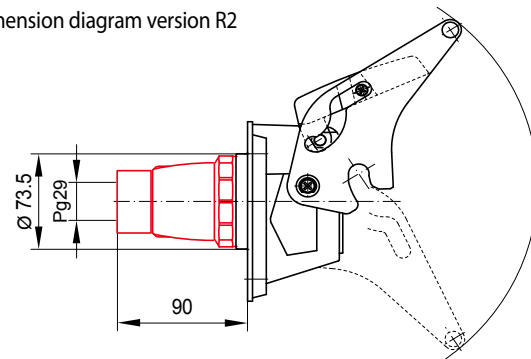
- **EP KD R1 Sx Ex** Receptacle with backshell and cable gland M40x1,5
- **EP BD R1 Sx Ex** Dummy receptacle with backshell and cable gland M40x1,5

Dimension diagram version R1



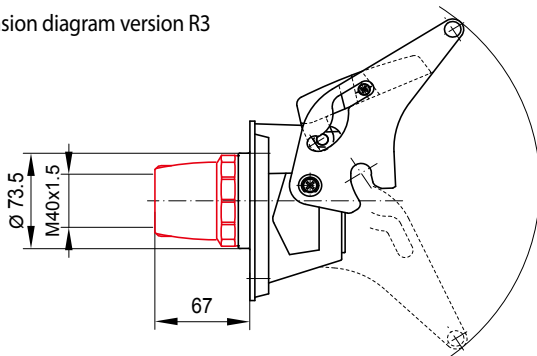
- **EP KD R2 Sx Ex** Receptacle with backshell and adapter Pg29
- **EP BD R2 Sx Ex** Dummy receptacle with backshell and adapter Pg29

Dimension diagram version R2



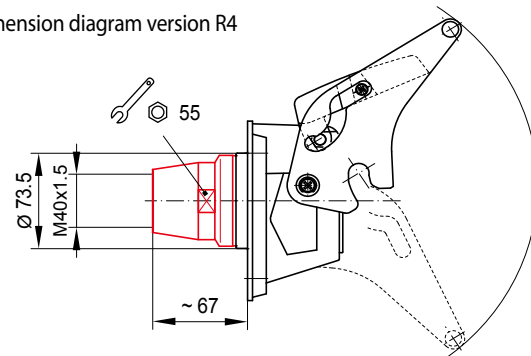
- **EP KD R3 Sx Ex** Receptacle with backshell without adapter
- **EP BD R3 Sx Ex** Dummy receptacle with backshell without adapter

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



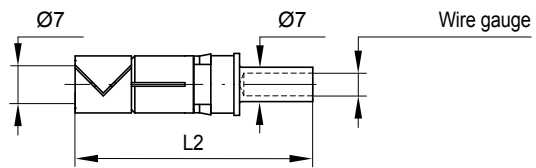
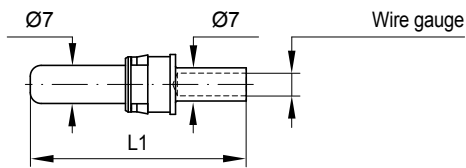
Contacts Crimp contacts (pin/socket) EP Series

• Ordering code contacts

Example: **SHC-1,00-Au-30**

Contact type	S Pin		Special design UIC	Version	30
	B Socket				
Contact diameter	P Ø 7 mm			Contact surface	Ag
	C Ø 4 mm				Au
	H Ø 3 mm			Wire gauge	1.00
			1 mm ² , example (see also tables below)	Terminal	C
				Crimp	

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



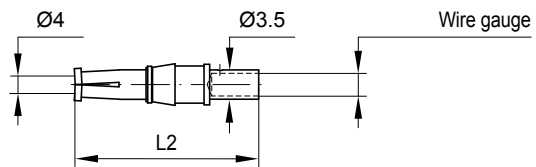
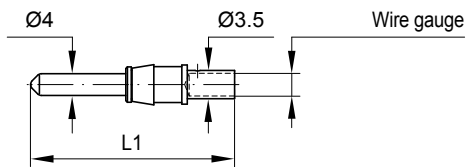
Ordering code	L1	Pin contact
SPC-10.0-Ag	39.7	for receptacle
SPC-2.5-Ag*	39.7	for dummy

Ordering code	L2	Socket contact
BPC-10.0-Ag	42.2	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 for cavities A, B

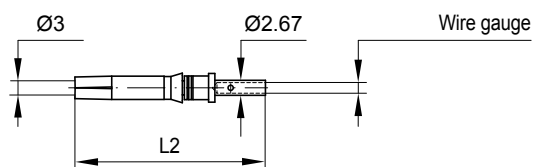
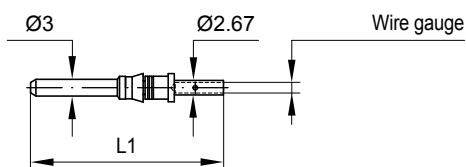


Ordering code	L1	Pin contact
SCC-6.00-Ag	37.5	for receptacle

Ordering code	L2	Socket contact
BCC-6.00-Ag	32.6	for plug

Wire gauge	Rated current
6 mm ²	25 A

• CCrimp contacts for cavities C, E

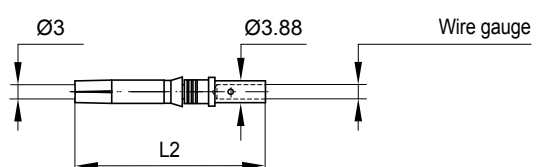
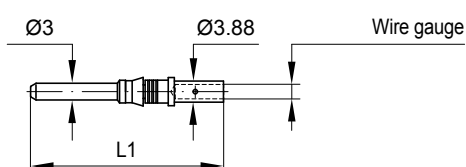


Ordering code	L1	Pin contact
SHC-1.00-Au-30	35.5	for receptacle

Ordering code	L2	Socket contact
BHC-1.00-Au-30	33.8	for plug

Wire gauge	Rated current
1 mm ²	6 A

• Crimp contacts for cavities D



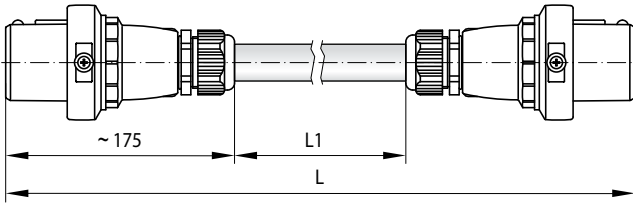
Ordering code	L1	Pin contact
SHC-2.50-Au-30	35.5	for receptacle

Ordering code	L2	Socket contact
BHC-2.50-Au-30	33.8	for plug

Wire gauge	Rated current
2.5 mm ²	6 A

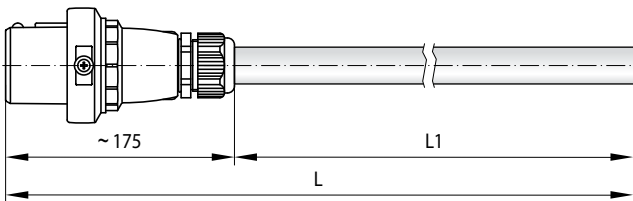
Pre-assembled cables

- EP VK Lxxxx Connector cable, double ended



Ordering code	Total length L	Length L1
EP VK L2000	2,000 mm ± 10	1,650 mm
EP VK L3000	3,000 mm ± 10	2,650 mm
EP VK L4500	4,500 mm ± 10	4,150 mm

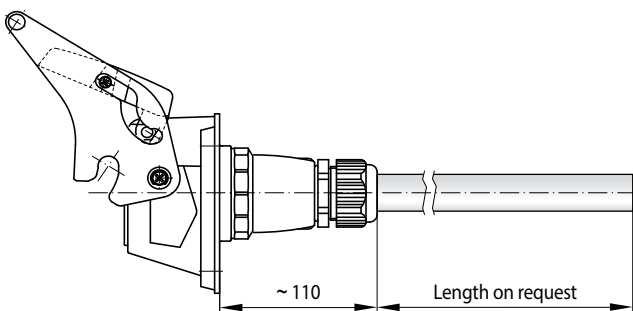
- EP SK Lxxxx Connector cable, single ended



Ordering code	Total length L	Length L1
EP SK L2000	2,000 mm ± 10	1,825 mm
EP SK L3000	3,000 mm ± 10	2,825 mm
EP SK L4500	4,500 mm ± 10	4,325 mm

- EP DK Rx Sx Ex Lxxxx Receptacle with connector cable

↑ ↑ ↑ ↑ ↑
Options see ordering code page 3
Length on request



Tools

EP series

- CWZ-120 Crimp tools for contacts Type P

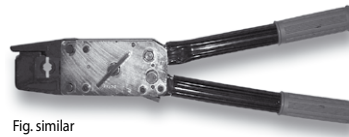


Fig. similar

Ordering code	Description
CWZ-120	Crimping tool for crimping insert CEP-120
CEP-120	Crimp insert for wire gauges 10 mm ² ... 120 mm ² , contacts Type P

- CWZ-600-1 Crimp tools for contacts Type C and H



Fig. similar

Ordering code	Description
CWZ-600-1	Crimp tool for wire gauges AWG 25 ... 9 (0.14 mm ² ... 6 mm ²), contacts Type C and H

- AWZ-P, AWZ-C/H, AWZ-B Extraction tools



Fig. similar

Ordering code	Description
AWZ-P	Extraction tool for contacts, contact insert cavities 1, 2, 3, 4
AWZ-C/H	Extraction tool for contacts, contact insert cavities A, B
AWZ-B	Extraction tool for contacts, contact insert cavities C, D, E

EP A1, EP A2 Cable junction box

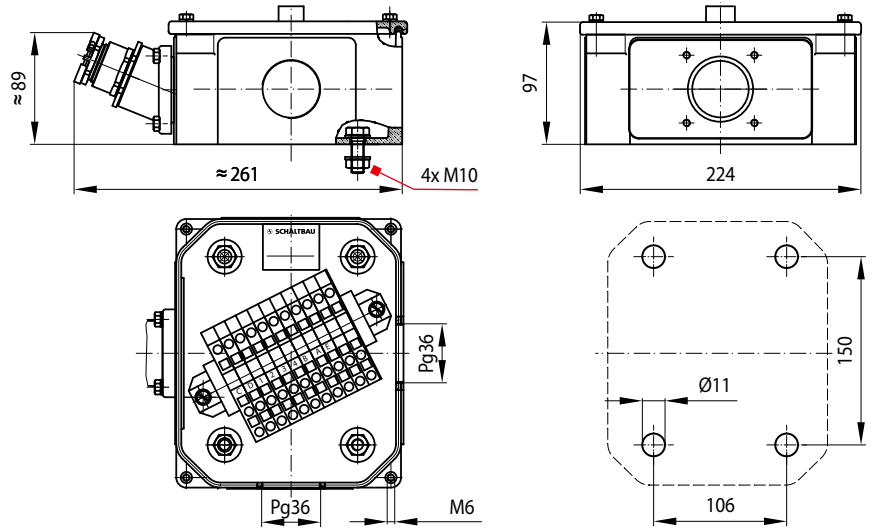
Accessories

Cable junction box

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

The following variants are available:

Ordering code	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)

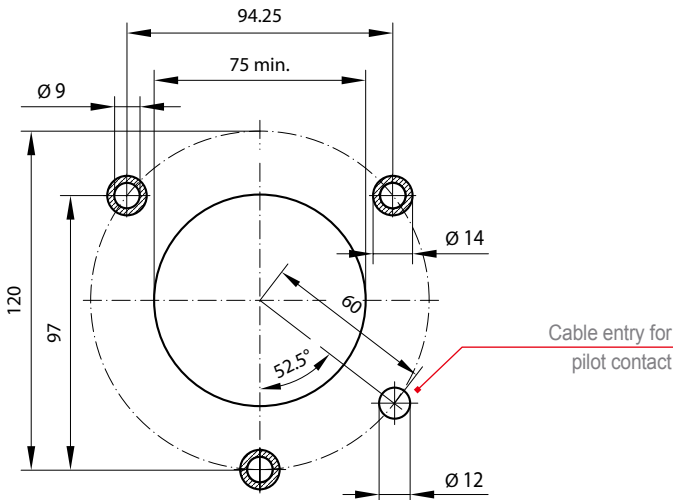


i To be mounted via 4 M10 screws at the bottom of the box, see dimension diagram.

Mounting holes

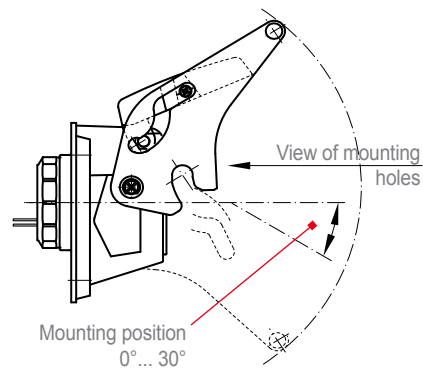
EP series

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

Schaltbau GmbH

For detailed information on our products and services visit our website – or give us a call!

Schaltbau GmbH
Hollerithstrasse 5
81829 Munich
Germany



Phone +49 89 9 30 05-0
Fax +49 89 9 30 05-350
Internet www.schaltbau.com
e-Mail contact@schaltbau.de

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