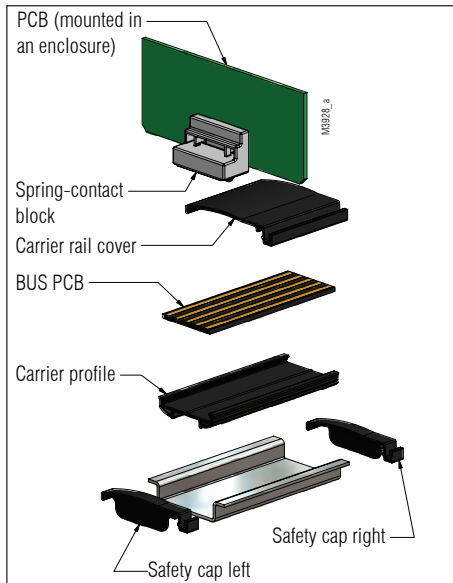


In-Rail-Bus

Bus system in DIN-rail



Approval and Markings



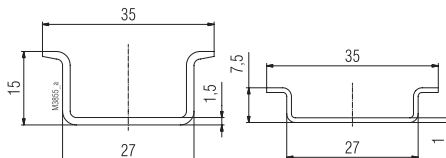
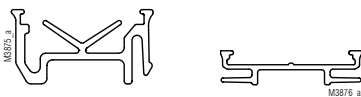
Your Advantages

- Reliable and consistent supply, connection and distribution of energy, signals and data

Features

- Universal use with various enclosure types
- High current (5 A per pcb-rail)
- Quick and easy mounting in the DIN-rail
- Contour and layout of the bus pcb can be adapted according to customers' requirements e.g. defined by the customer
- Designed for standard DIN-rail dimensions
- Optional coding of the bus system to prevent incorrect assembly
- Large stand-off to DIN-rail floor allows the mounting of SMD components on the bus pcb underside
- The carrier profile is securely fixed by safety caps (left and right) on the DIN-rail

Carrier profile 15 Carrier profile 7.5



- Pcb rail "breaks" are possible, e.g. for operation of bus signals inside instruments

Technical Data

Order reference

Carrier profile 15*):		
250 mm:	KO 4303-257-5.4;	Art.-No.: 0063838
500 mm:	KO 4303-257-5.2;	Art.-No.: 0061802
750 mm:	KO 4303-257-5.7;	Art.-No.: 0063866
1000 mm:	KO 4303-257-1;	Art.-No.: 0060632
Carrier profile 7.5*):		
250 mm:	KO 4303-257-6.4;	Art.-No.: 0063839
500 mm:	KO 4303-257-6.2;	Art.-No.: 0063864
750 mm:	KO 4303-257-6.7;	Art.-No.: 0063865
1000 mm:	KO 4303-257-2;	Art.-No.: 0060719
Bus pcb for spring contact block, 5-poles*):		
250 mm:	KO 4303-256-1.6;	Art.-No.: 0063837
500 mm:	KO 4303-256-1.2;	Art.-No.: 0061804
750 mm:	KO 4303-256-1.7;	Art.-No.: 0063861
1000 mm:	KO 4303-256-1;	Art.-No.: 0060631
Bus pcb for spring contact block, 8-poles:		
250 mm:	KO 4303-356-3.3;	Art.-No.: 0068919
500 mm:	KO 4303-356-3.2;	Art.-No.: 0068918
750 mm:	KO 4303-356-3.1;	Art.-No.: 0068917
Carrier rail cover*):		
250 mm:	KO 4303-158-2.4;	Art.-No.: 0063836
500 mm:	KO 4303-158-2.2;	Art.-No.: 0061806
750 mm:	KO 4303-158-2.7;	Art.-No.: 0063862
1000 mm:	KO 4303-158-2.1;	Art.-No.: 0060630
Safety cap, Right*):	KO 4303-158-3;	Art.-No.: 0060722
Safety cap, Left*):	KO 4303-158-4;	Art.-No.: 0060723
Spring contact block without coding*):	KO 4303-153.2;	Art.-No.: 0060720 (with Au-contacts)
Spring contact block with coding*):	KO 4303-153.4;	Art.-No.: 0060721 (with Au-contacts)

Plastics

Carrier profile:	Polyamide (PA66)	(1)
Carrier-rail cover	Polyamide (PA6)	(2)
Spring contact block:	Polyamide (PA6) and Polyamide (PA46)	(3) (4)
Safety cap (right/left):	Polycarbonate (PC)	(5)

Temperature withstand:

	PA66 (1)	PA6 (2)	PA6 (3)	PA46 (4)	PC (5)
complying with Vicat			205°C (B50)		144°C (B50)
compl. with EN 75-1/-2 (1.8 MPa):	250 °C	80 °C	100 °C	> 290°C	138 °C
compl. with EN 75-1/-2 (0.45 MPa):	250 °C	190 °C	200 °C	> 290°C	143 °C

Flame retardancy

complying with UL 94:

V-0

Bus rails:

5; 8; variants, on request

Spring contact material:

copper, tinned gold plated

Bus pcbs

Pcb thickness:

1.5 mm

Cu-coating thickness:

min. 70 µm

Contact surface:

for 5-poles version*):

Au 0.5 - 0.8 µm (others on request)

for 8-poles version:

Au 0.2 - 0.3 µm (others on request)

Max. contact resistance

Spring contact block - bus element: ≤ 20 mΩ

Max. current carrying capacity: 5 A (per bus rail)

25 A (max. total current)

Max. voltage

Bus rail to bus rail:

AC 63 V DIN EN 60 664

Bus rail to DIN-rail:

AC 63 V DIN EN 60 664

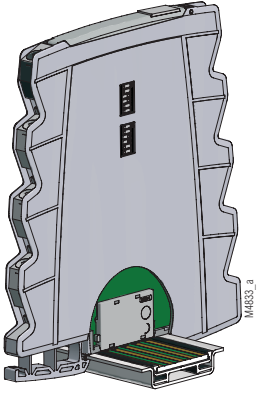
Bus rail to bus rail:

AC 30 V UL 840, C22.2 No 14.5

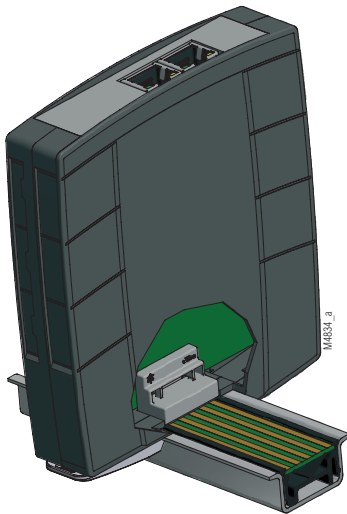
Bus rail to DIN-rail:

AC 30 V UL 840, C22.2 No 14.5

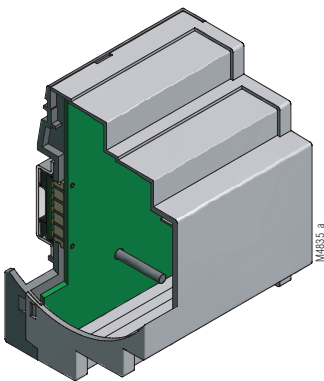
Enclosure KS 4460
in use with bus-system



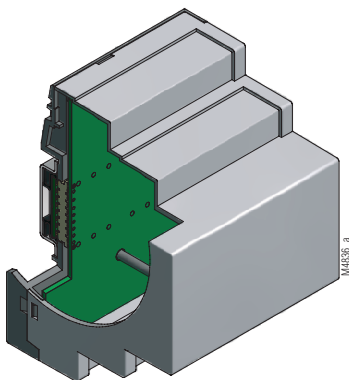
Enclosure series KS 4400
in use with bus-system



Enclosure series KU 4500
in use with bus-system



Enclosure series KU 4100
in use with bus-system



Technical Data

Contact pressure

Spring contact to bus rail: 100 cN (double contact)

Spring contact block fixing: **The use of temperature stable materials allows soldering without the need for shielding cover**

Creepage current resistance

Carrier profile,

Carrier rail cover

PA6: CTI 600 $\hat{=}$ insulating material I DIN EN 60664-1

Spring contact block

PA6: CTI 375 $\hat{=}$ insulating material III a DIN EN 60664-1

PA4.6: CTI < 400 $\hat{=}$ insulating material III a

Safety caps

PC6: CTI 175 $\hat{=}$ insulating material III a DIN EN 60664-1

Carrier profile

PA66: CTI 500 $\hat{=}$ insulating material II DIN EN 60664-1

Air gap and creepage distance: ≥ 2 mm

Voltage U_{eff} : 63 V

Overvoltage category: II

Rated shock voltage U_{bem} : 0,8 kV

Contamination class: 3

DIN-rail:

DIN EN 60 715 TH35-7.5 or optionally

DIN-rail 35 x 15 x 1,5 mm

Shock stability: Amplitude 0.35 mm; 10 ... 55 Hz DIN EN 60068-2-6

Swing test: 2 h

Swing direction: 3 axle

Net weight

Spring contact block: approx. 2.5 g / piece

Carrier profile: approx. 115 g / m

Bus cover: approx. 60 g / m

Safety caps (right/left): approx. 0.6 g / piece

Accessories:

- Carrier rail cover
- Customized lengths of bus pcb available on request
- Safety cap

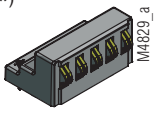
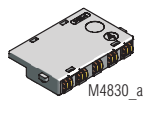
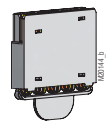
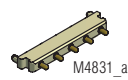
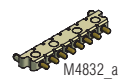

Further features:

- The complete possibilities of the bus pcb allows:
 - * the input of the bus signal via pcb terminals
 - * coupling of two bus pcs via terminal strip
 - * Pcb crossovers with multi-coated pcs
 - * Coding via a coding pin to the spring-contact block via a specific code hole in the bus pcb

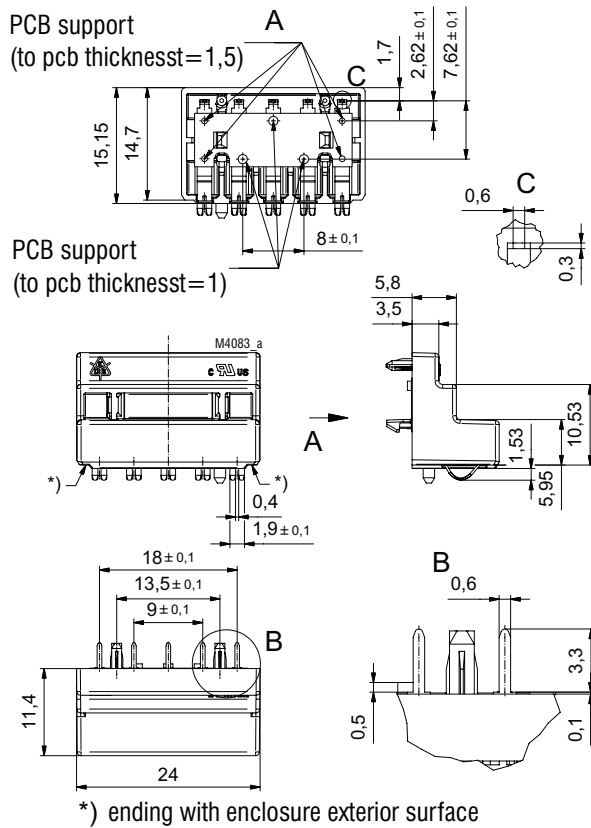
Technical Notes:

- The complete track system shall only be supplied by one isolated power supply or control transformer rated max. 10,000VA or equivalent
- The rail system is intended for the use with spring contact block assemblies and mounting means as designed by the manufacturers mechanical specifications or equivalent
- The spring block assembly must be mechanically secured and soldered to the printed wiring board according to the manufacturers instructions and mechanical design or equivalent

Ovverview

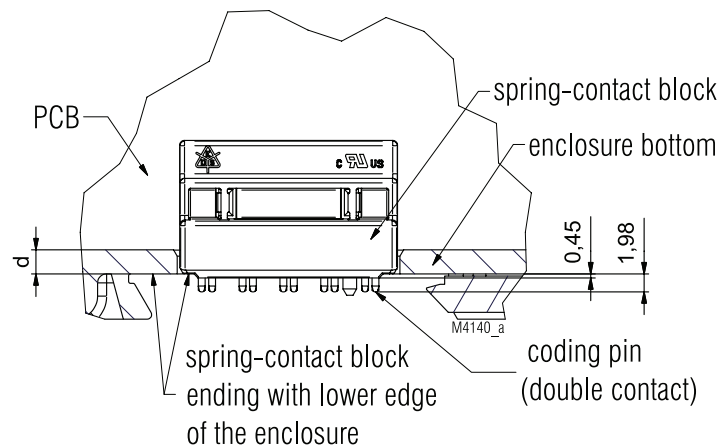
Overview spring contact block for In-Rail-Bus						
Designation	KO4303-153 ^{*)}	KS4460-12	KS4460-15	KO4303-400	KO4303-401	KO4303-402
Pole	5	5	5	5	8	8
Picture	*) 					
Pcb configuration	Vertical	Vertical	Vertical	Horizontal	Horizontal	Vertical
Fixing	Machine soldering	Machine soldering	Pluggable	Reflow solder method	Reflow solder method	Reflow solder method
Standard Dimensions (B x H x T)	24 x 11.4 x 15,15	24 x 4 x 16.15	22,5 x 4 x 24	24 x 2.54 x 8.1	24 x 2.54 x 8.1	23.7 x 2.27 x 10.4
Further Information		See datasheet spring contact block KS 4460-12	See datasheet spring contact block KS 4460-15	See datasheet spring contact block 5-poles	See datasheet spring contact block 8-poles	See datasheet spring contact block 8-poles

Dimension Spring contact block

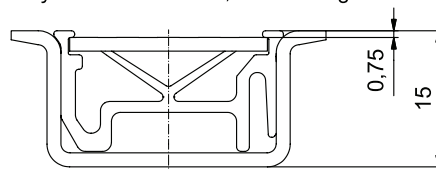


Configuration of spring contact block

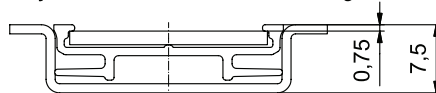
Configuration of
spring contact block
on pcb seen from
lower egde of the enclosure



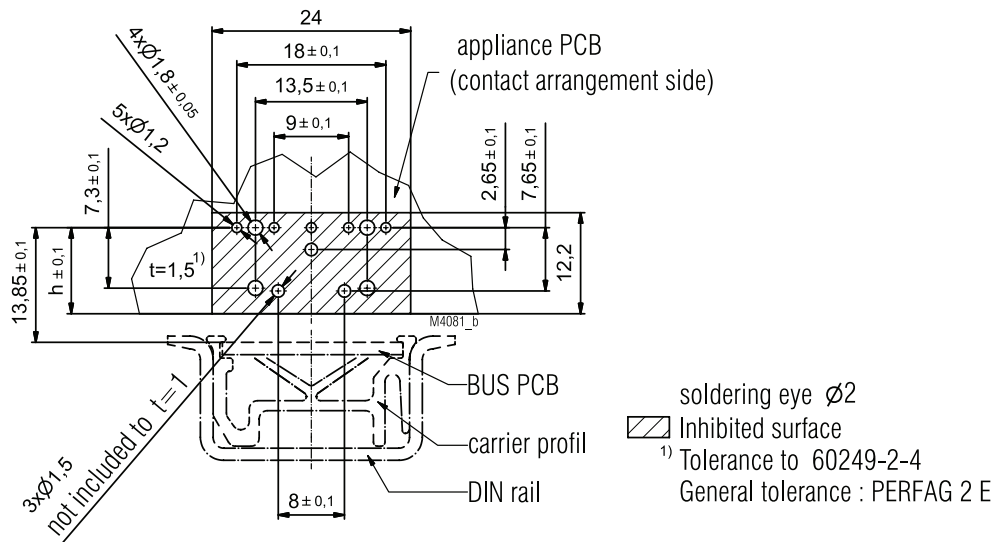
BUS system in DIN-rail, 15mm high



BUS system in DIN-rail, 7,5mm high



Drilling plan for appliance pcb

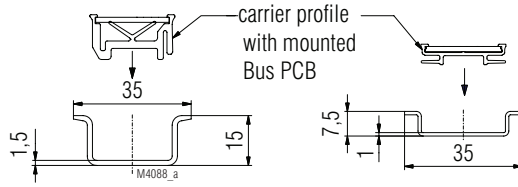


distance h in relation to lower edge of the pcb for different enclosure series
(dimension h changes with thickness of enclosure bottom)

enclosure series	enclosure bottom thickness d	distance h±0,1
KO4300	2,65	10,4
KU4000	2	11,05
KU4100	2,15	10,9
KO4730-KO4737	2,5	10,55

step 1

put in the pre-mounted carrier profile
in to the DIN rail



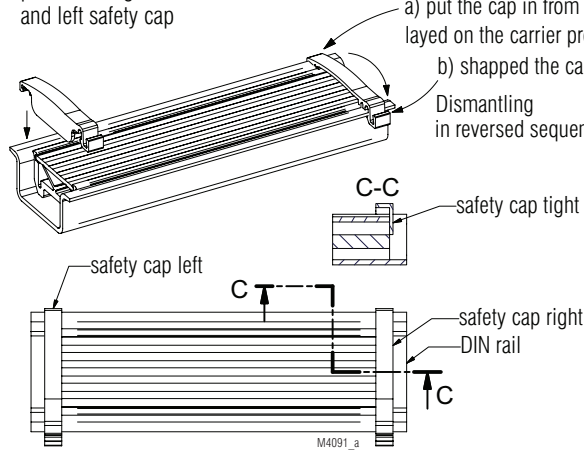
step 2

put on the right
and left safety cap

Pay attention to the sequence :

- a) put the cap in from above
laid on the carrier profile
- b) shaped the cap on below

Dismantling
in reversed sequence



step 3

snap on the appliance
on the In-Rail-Bus

efficient power to the Bus
 $F \geq 5N$
(Per appliance snapped on
with contact spring block)

safety cap on both
sides tight to the carrier profile
The safety cap fixes the carrier profile
in the DIN rail and protects the ends of the Bus

