

Шины IN-RAIL

Технические характеристики

По вопросам продаж и поддержки обращайтесь:

Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +(727)345-47-04

Беларусь +(375)257-127-884

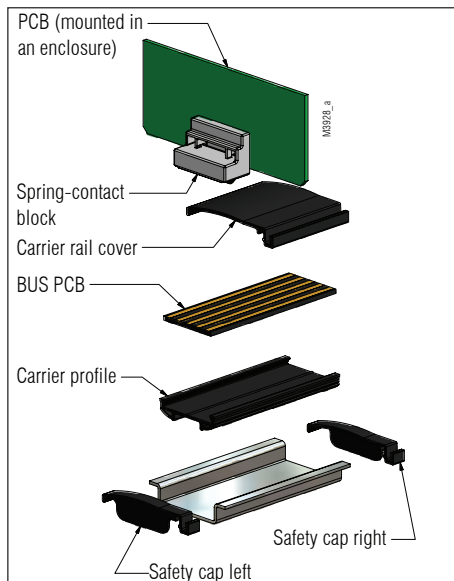
Узбекистан +998(71)205-18-59

Киргизия +996(312)96-26-47

эл.почта: ddo@nt-rt.ru || сайт: <https://dold.nt-rt.ru/>

In-Rail-Bus

Bus system in DIN-rail



Approval and Markings



Your Advantages

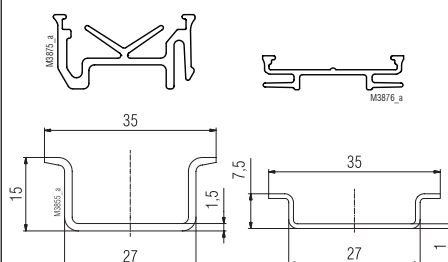
- Reliable and consistent supply, connection and distribution of energy, signals and data

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:

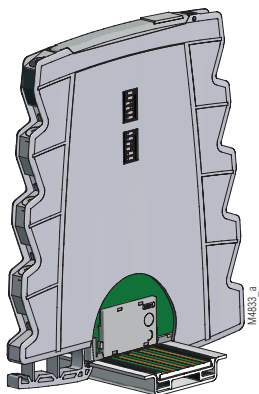
5 A (per bus rail)

25 A (max. total current)

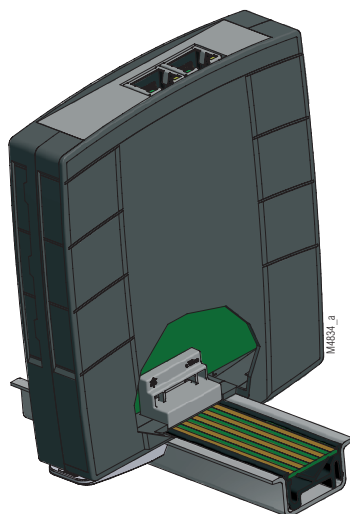
Max. voltage

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

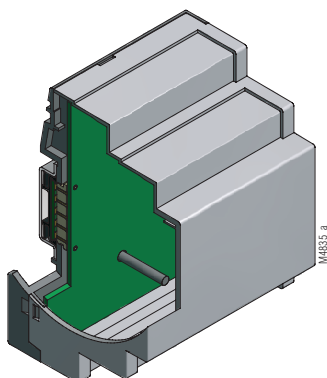
Enclosure KS 4460
in use with bus-system



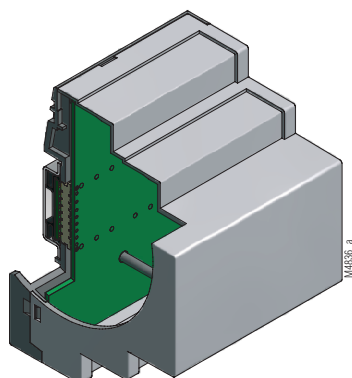
Enclosure series KS 4400
in use with bus-system



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:

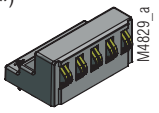
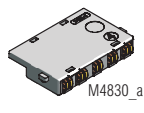
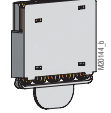
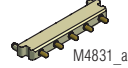
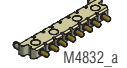
- The complete possibilities of the bus pcb allows:
 - * the input of the bus signal via pcb terminals
 - * coupling of two bus pcbs via terminal strip
 - * Pcb crossovers with multi-coated pcbs
 - * Coding via a coding pin to the spring-contact block via a specific code hole in the bus pcb

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

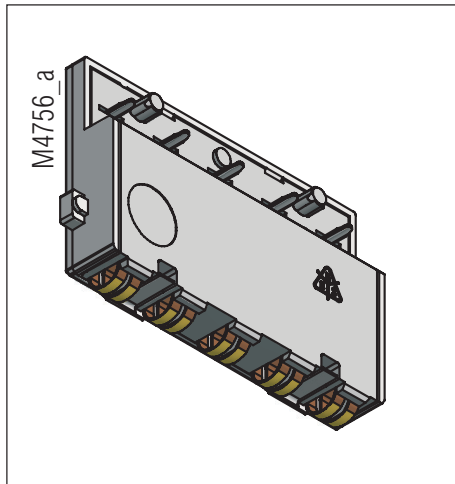
Ovwerview

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

In-Rail-Bus

Spring contact block 5-poles, solderable
KS 4460-12



Approvals and Markings



*) in preparation

Your Advantage

- Gold-plated twin arched contacts ensure a permanent and reliable contact

Features

- Current carrying capacity up to 5A per contact spring
- Solder pins ensure a stable connection to the pcb
- Unlimited scalability covers all systems widths starting from 6 mm slices

Technical Data

Type	Dimension x	Dimension Y	
KS 4460-12.00 0 19	0,3	1,8	
KS 4460-12.01 1 19	1,05	3,2	
KS 4460-12.01 2 19	0	3,2	

Enclosure material: Polyamid PA46

Temperature stability

compl. with EN 75-1/2 (1.8 MPa): 290 °C

compl. with EN 75-1/2 (0.45 MPa): 290 °C

Flame retardancy

complying with UL 94: V-0

Bus rails:

5

Contact material:

Copper alloy, gold plated

Max. contact resistance

Spring contact block - bus element $\leq 20 \text{ m}\Omega$

Max. current carrying capacity: 5 A (per bus element); 25 A (max. total current)

Spring contact on bus element: 100 cN (double contacts)

Spring contact block fixing:

Spring contact block can be machine soldered;
use of heat-resistant plastic means no cover for the terminal block facing the soldering bath is required

Creepage current resistance: CTI 325 $\hat{=}$ insulating material III a IEC 60 664-1

Air gap and creepage distance: $\geq 2.0 \text{ mm}$ IEC 60 664-1

Voltage U_{eff} : 63 V

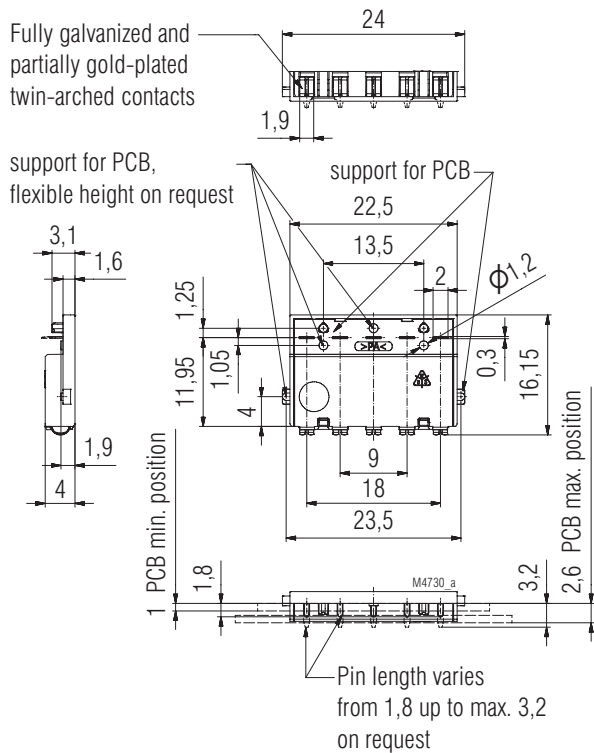
Overvoltage category: II

Rated impuls voltage U_{Bem} : 0.8 kV

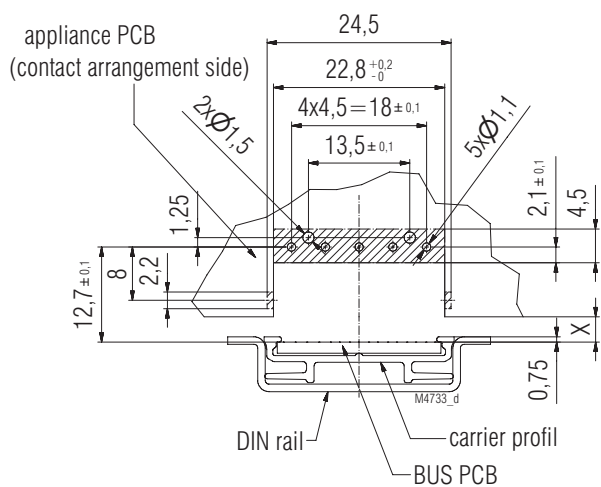
Pollution degree: 3

More informationen
see datasheet
In-Rail-Bus

Dimension



Drilling plan



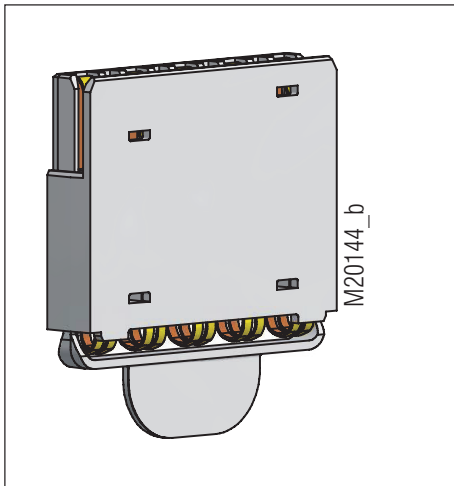
Land for soldering $\phi 2$

Blocked area

General tolerance: PER FAG 2 E

In-Rail-Bus

Spring contact block 5-poles, pluggable
KS 4460-15



Approvals and Markings



*) in preparation

Your Advantages

- Simple and safe mounting with plug-in-technology offers also an additional or alternative In-Rail-Bus-connection
- Integrated coding prevents incorrect assembly
- Gold-plated twin arched contacts ensure a permanent and reliable contact

Features

- Suitable for pcbs with 1.0 and 1.5 mm thickness
- Current carrying capacity up to 5A per contact spring
- Unlimited scalability covers all systems widths starting from 6 mm slices

Technical Data

Type	pcb thickness (mm)	Dimension X	X
KS 4460-15.00 0 19	1	1,1	
KS 4460-15.00 1 19	1,5	1,6	

Enclosure material: Polyamid PA46

Temperature stability	
compl. with EN 75-1/2 (1.8 MPa):	290 °C
compl. with EN 75-1/2 (0.45 MPa):	290 °C

Flame retardancy

complying with UL 94: V-0

Bus rails: 5

Contact material: Copper alloy, gold plated

Max. contact resistance

Spring contact block - bus element $\leq 20 \text{ m}\Omega$

Max. current carrying capacity: 5 A (per bus element); 25 A (max. total current)

Spring contact on bus element: 100 cN (double contacts)

Spring contact block fixing: Plug in with pcb

Creepage current resistance: CTI 325 $\hat{=}$ insulating material III a IEC 60 664-1

Air gap and creepage distance: $\geq 2.0 \text{ mm}$ IEC 60 664-1

Voltage U_{eff} : 63 V

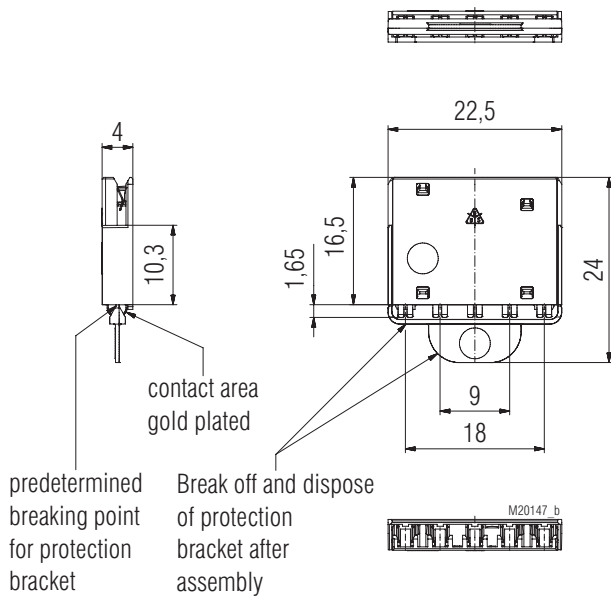
Overvoltage category: II

Rated impuls voltage U_{Bem} : 0.8 kV

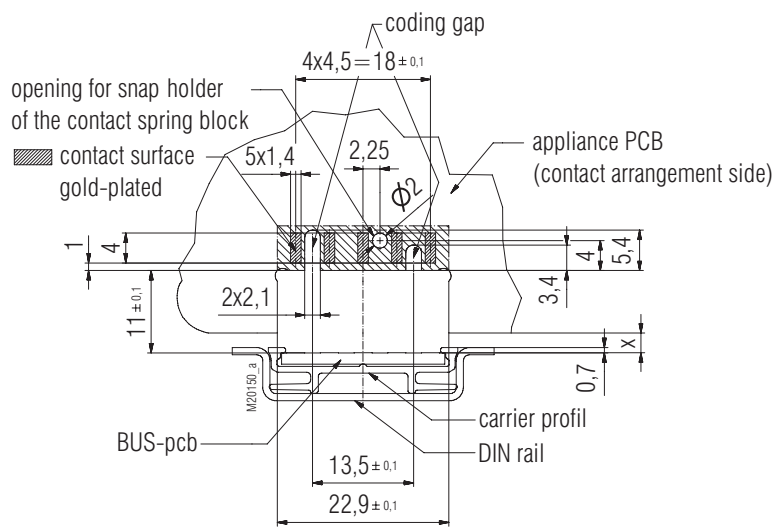
Pollution degree: 3

More informationen
see datasheet
In-Rail-Bus

Dimension

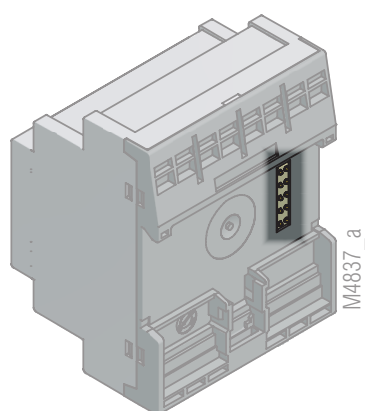


Drilling plan



In-Rail-Bus

Spring contact block 5-poles, reflow-solderable
for horizontal pcb



Application example:
Enclosure KU 4589 for distribution cabinets

Approvals and Markings



*) in preparation

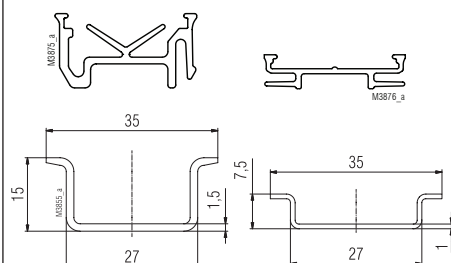
Your Advantages

- Modular, flexible for horizontal pcbs
- Reliable and consistent supply, connection and distribution of energy, signals and data

Features

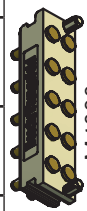
- Universal use with various enclosure types
- High current (5 A per bus pcb-rail)
- Quick and easy mounting in the DIN-rail
- Contour and layout of the bus pcb can be according to customers' requirements e.g. defined by the customer
- Designed for standard DIN-rail dimensions
- Large stand-off to DIN-rail 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

Type	Contact pins	 M4838_a Pic. 10 pins
KO 4303-400	5	
KO 4303-400.1	10	
KO 4303-400.2	7	

Enclosure material: Polyamid PA46

Temperature stability	
compl. with EN 75-1/2 (1.8 MPa):	290 °C
compl. with EN 75-1/2 (0.45 MPa):	290 °C

Flame retardancy

complying with UL 94:

V-0

Bus rails:

5

Contact material:

copper tinned, gold plated

Max. contact resistance

Spring contact block - bus element: typically: $\leq 20 \text{ m}\Omega$

Max. current carrying capacity:

2.5 A per spring contact pin
5 A two contact pins per potential necessary
25 A (max. total current)

Spring contact on bus element:

at 0.7 mm working stroke 85 cN

Spring contact block fixing:

by reflow solder method

Creepage current resistance:

CTI 325 $\hat{=}$ insulating material III a IEC 60 664-1

Air gap:

$\geq 0.8 \text{ mm}$ IEC 60 664-1

Creepage distance:

$\geq 2.0 \text{ mm}$ IEC 60 664-1

Voltage U_{eff} :

63 V

Overvoltage category:

II

Rated impuls voltage U_{Bem} :

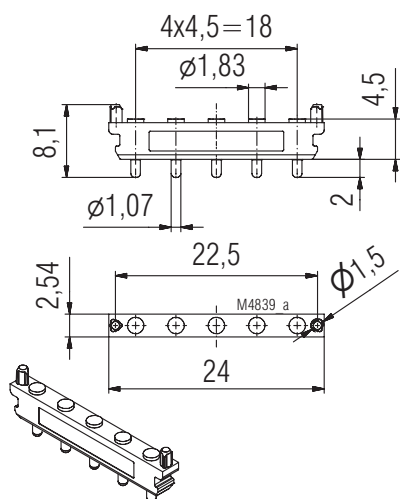
0.8 kV

Pollution degree:

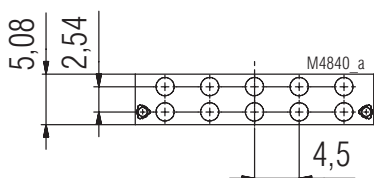
3

More informationen
see datasheet
In-Rail-Bus

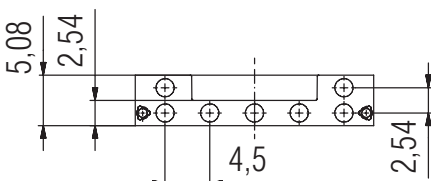
Dimension spring contact block



Spring contact block KO 4303-400

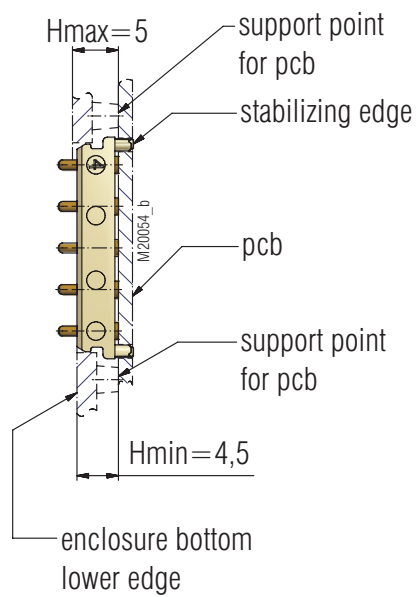


Spring contact block KO 4303-400.1

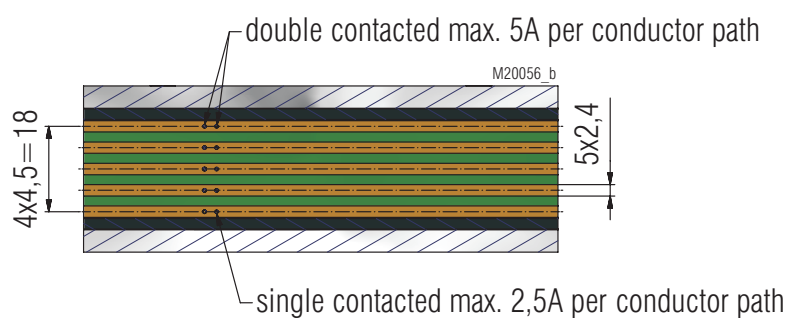
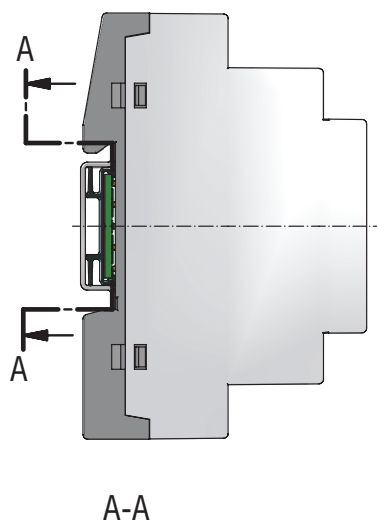
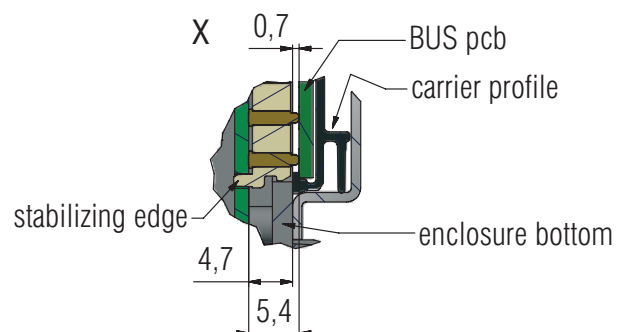
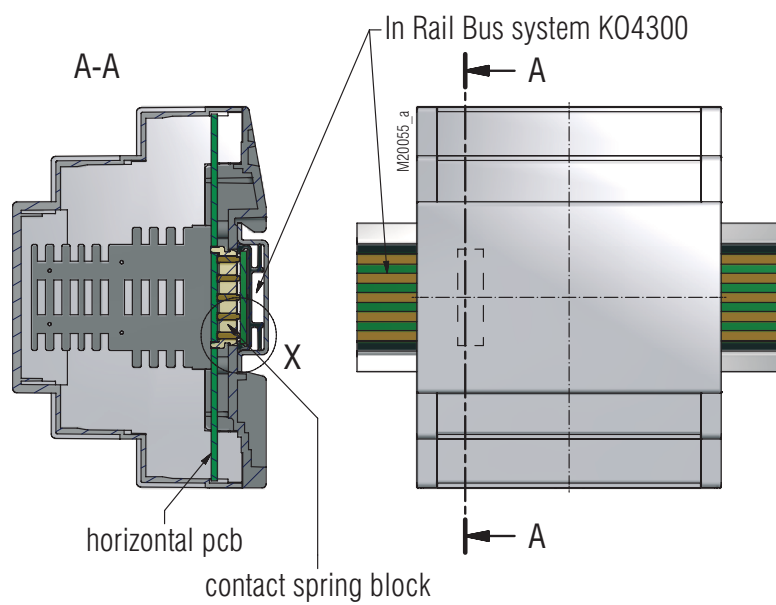


Spring contact block KO 4303-400.2

Permitted installation positions for the spring contact block in the enclosure bottom between $H = 4,5 \dots 5,4$ mm

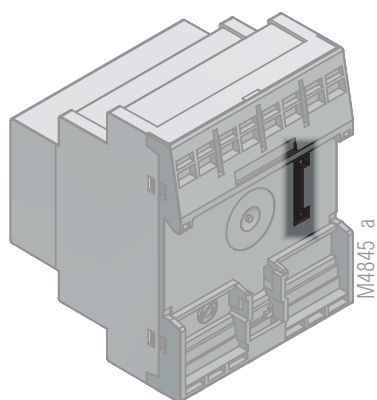


Installation example



In-Rail-Bus

Spring contact block 8-poles, reflow solderable
for horizontal pcb



Application example:
Enclosure KU 4189 for distribution cabinets

Approvals and Markings



*) in preparation

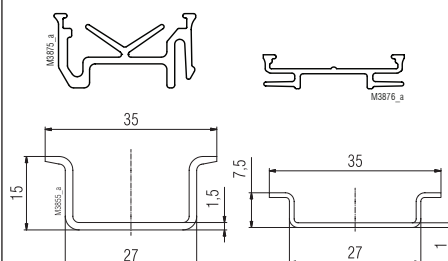
Your Advantages

- Modular, flexible for horizontal pcbs
- Reliable and consistent supply, connection and distribution of energy, signals and data

Features

- Universal use with various enclosure types
- High current (5 A per power cable)
- Quick and easy mounting in the DIN-rail
- Contour and layout of the bus pcb can be according to customers' requirements e.g. defined by the customer
- Designed for standard DIN-rail dimensions
- 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

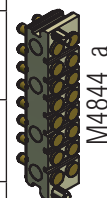
Carrier profile 15 Carrier profile 7.5



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

Technical Data

Order reference	Type	Contact pins
Spring contact block:	KO 4303-401	8
Spring contact block:	KO 4303-401.1	16
Spring contact block:	KO 4303-401.2	10



Pic.
16 pins

Order reference	Type	Dimension [mm]
Bus element:	KO 4303-256-3.3	250
Bus element:	KO 4303-256-3.2	500
Bus element:	KO 4303-256-3.1	750

Enclosure material: Polyamid PA46

Temperature stability	
compl. with EN 75-1/2 (1.8 MPa):	290 °C
compl. with EN 75-1/2 (0.45 MPa):	290 °C

Flame retardancy

complying with UL 94:

V-0

Bus rails:

8

Contact material:

copper tinned, gold plated

Max. contact resistance

Spring contact block - bus element: typically: $\leq 20 \text{ m}\Omega$

Max. current carrying capacity:

2.5 A per spring contact pin
5 A two contact pins per potential necessary
31 A (max. total current)

Spring contact on bus element:

at 0.7 mm working stroke 85 cN

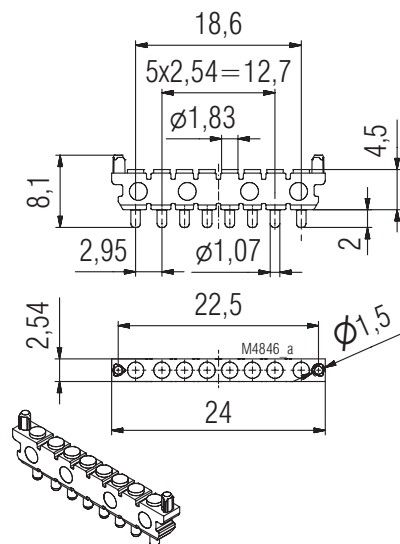
Spring contact block fixing:

by reflow solder method

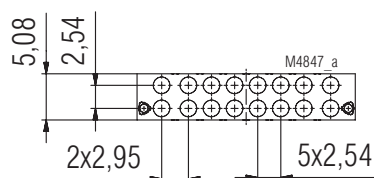
	Outside of the enclosure	Inside of the enclosure
Creepage current resistance:	CTI 325 $\hat{=}$ insulating material III a IEC 60 664-1	
Air gap:	$\geq 0.8 \text{ mm}$	$\geq 0.2 \text{ mm}$
Creepage distance:	$\geq 1.25 \text{ mm}$	$\geq 0.5 \text{ mm}$
Voltage U_{eff} :	25 V	
Overvoltage category:	II	
Rated impuls voltage U_{Bem} :	0.8 kV	
Pollution degree:	3	2

More informationen
see datasheet
In-Rail-Bus

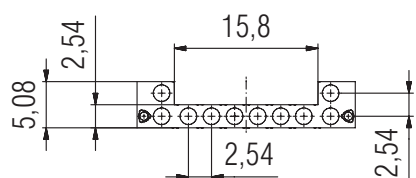
Dimension spring contact block



Spring contact block KO 4303-401

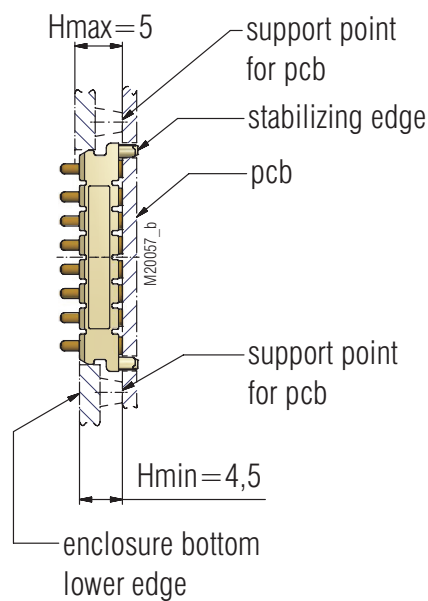


Spring contact block KO 4303-401.1

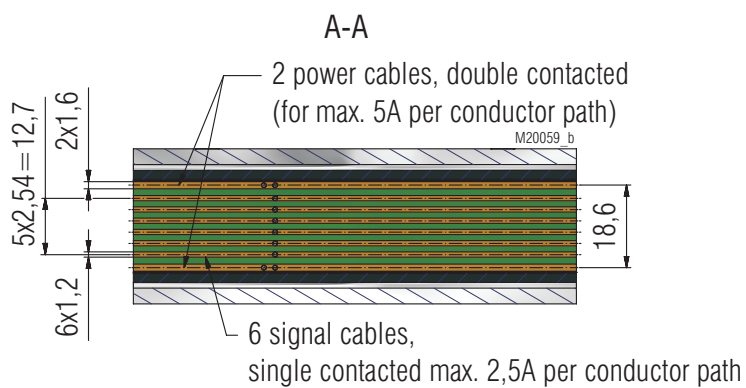
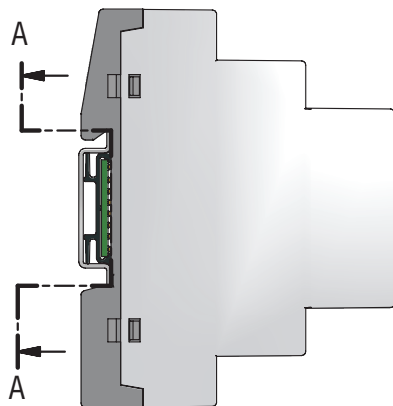
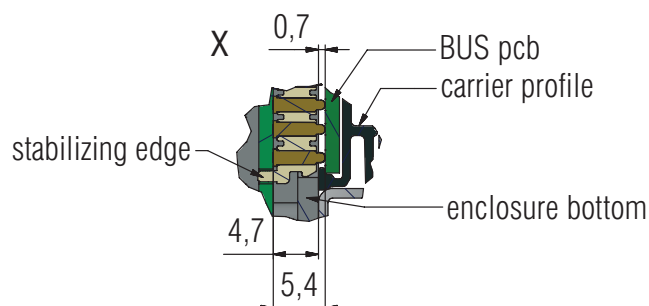
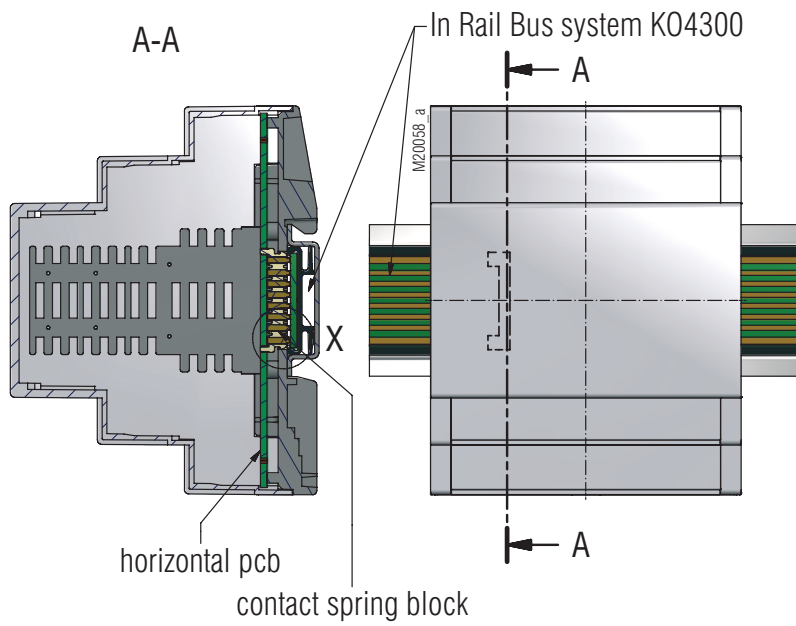


Spring contact block KO 4303-401.2

Permitted installation positions for the spring contact block in the enclosure bottom between $H = 4,5 \dots 5,4$ mm

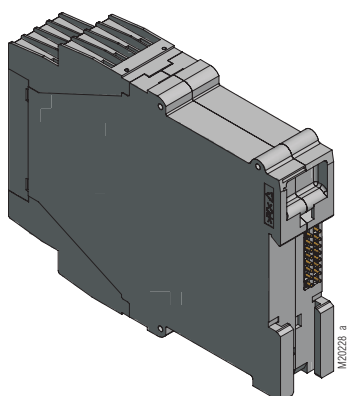


Installation example



In-Rail-Bus

Kontaktfederblock 8-polig, Reflow-lötbar
für senkrechte Leiterplatte



Einbaubeispiel
Kontaktfederblock im
Isolierstoffgehäuse KO 4303

Ihre Vorteile

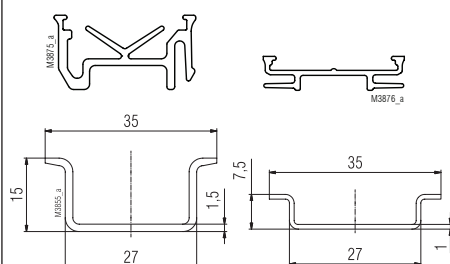
- modular, flexibel einsetzbar für senkrechte Leiterplatten
- Energie, Signale und Daten sicher und durchgängig versorgen, verbinden und verteilen.

Merkmale

- universelle Anwendung für unterschiedliche Gehäusetyper
- hohe Ströme (5 A pro Powerleiterbahn)
- schnelle und einfache Montage in der Hutschiene
- Kontur und Layout der Busleiterplatte können Kundenwünschen angepasst bzw. vom Kunden selbst definiert werden.
- geeignet für die gängigen Hutschiene-abmessungen
- großer Abstand zum Hutschieneboden bietet Möglichkeit zur Bestückung der Busleiterplatten-Unterseite mit SMD-Bauteilen.
- Das Trägerprofil wird durch die beiden Endschutzkappen in der Hutschiene sicher fixiert

Trägerprofil 15

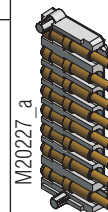
Trägerprofil 7,5



- Beliebige Leiterbahnunterbrechungen möglich, z.B. zur Verarbeitung von Bussignalen innerhalb eines Gerätes

Technische Daten

Bestellbezeichnung	Type	Federkontaktstifte
Kontaktfederblock:	KO 4303-402	8



Bestellbezeichnung	Type	Abmessung [mm]
Busleiterplatte:	KO 4303-256-3.3	250
Busleiterplatte:	KO 4303-256-3.2	500
Busleiterplatte:	KO 4303-256-3.1	750

Kunststoffmaterial: Polyamid PA46

Temperaturbeständigkeit		
nach EN 75-1/2	(1,8 MPa):	290 °C
nach EN 75-1/2	(0,45 MPa):	290 °C

Brennverhalten nach UL 94: V-0

Anzahl der Busleitungen: 8

Kontaktwerkstoff: Kupfer-Legierung, vergoldet

max. Durchgangswiderstand

Kontaktfederblock - Busleiterplatte: typisch: $\leq 20 \text{ m}\Omega$

max. Strombelastbarkeit: 2,5 A pro Federkontaktstift
5 A bei Doppelkontaktierung (pro Powerleiterbahn)
20 A (max. Summenstrom)

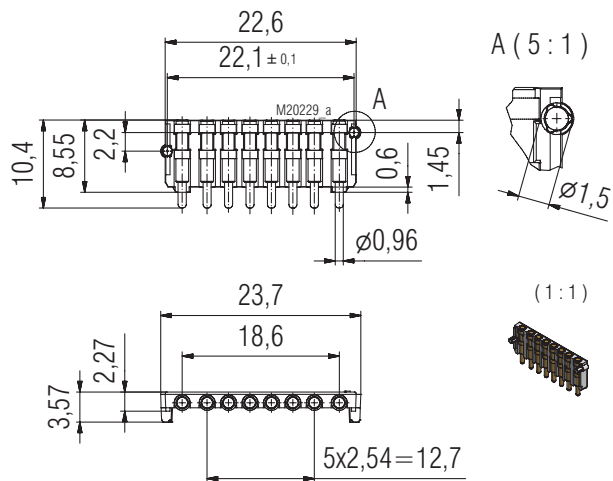
Kontaktfederkraft auf Busleitung: 100 cN bei 1,5 mm Hub

Kontaktfederblockbefestigung: durch Reflow-Lötverfahren

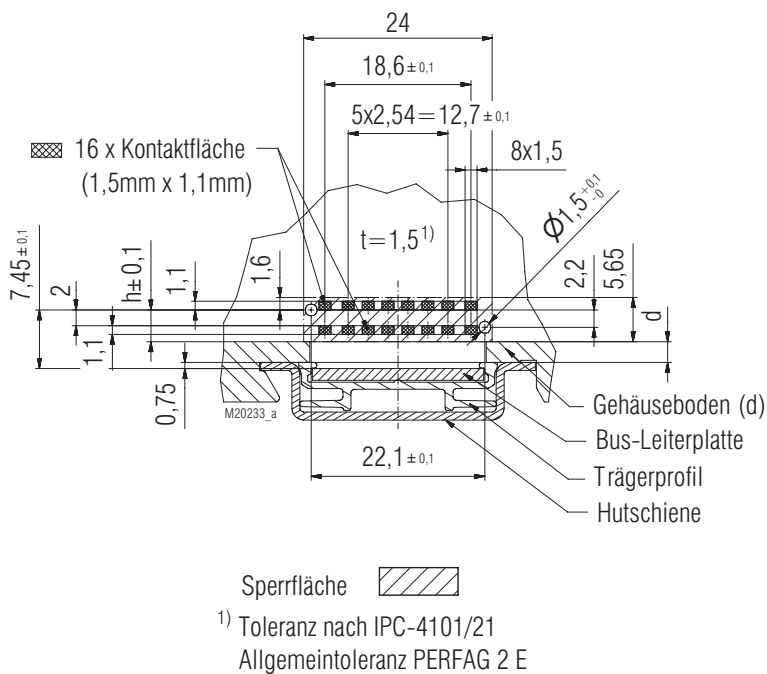
	Außerhalb des Gehäuses	Innerhalb des Gehäuses
Kriechstromfestigkeit:	CTI 325 $\approx$ Isolierstoff III a IEC 60 664-1	
Luftstrecke:	$\geq 0,8 \text{ mm}$	$\geq 0,2 \text{ mm}$
Kriechstrecke:	$\geq 1,25 \text{ mm}$	$\geq 0,5 \text{ mm}$
Spannung U_{eff}:	25 V	
Überspannungskategorie:	II	
Bemessungsstoßspannung U_{Bem}:	0,8 kV	
Verschmutzungsgrad:	3	2

Weitere Informationen
finden Sie im Datenblatt
In-Rail-Bus

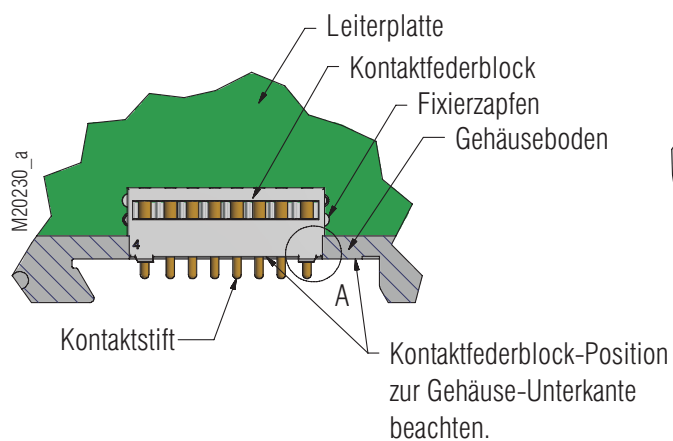
Maßbild

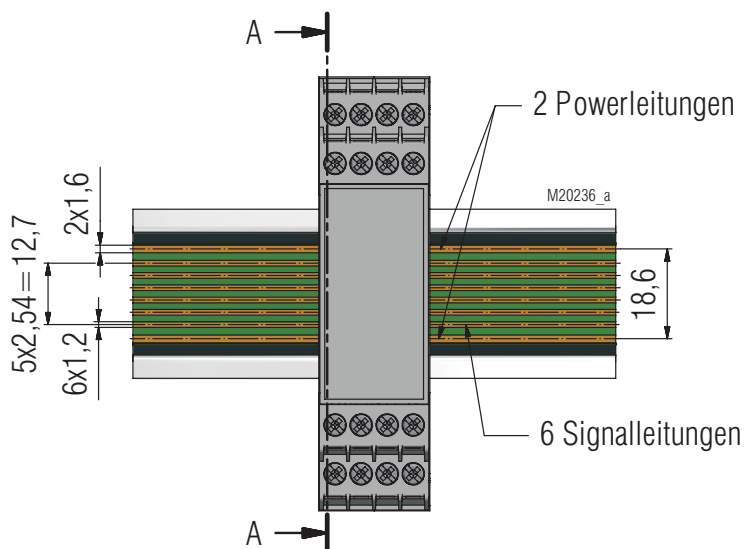
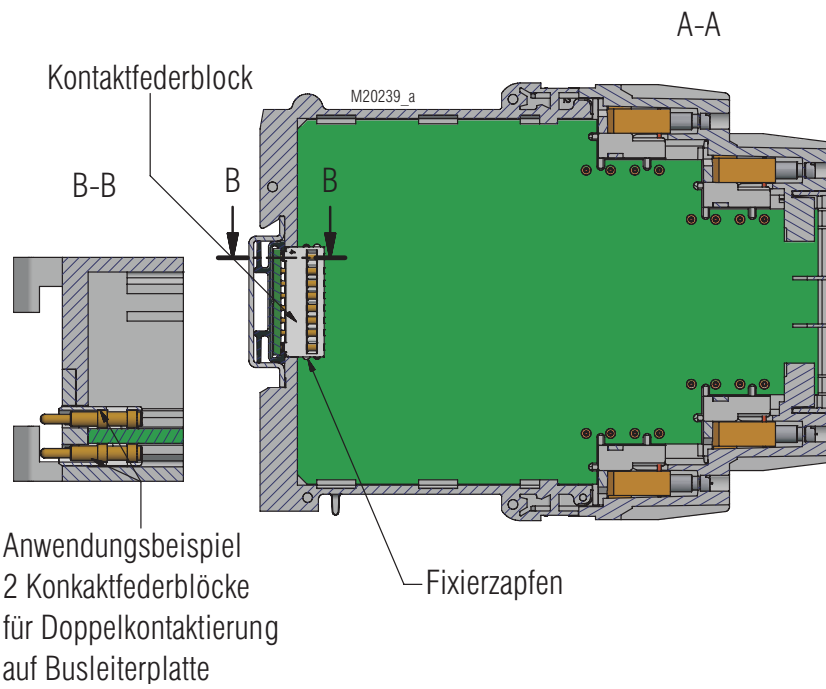


Bohrbild



Anordnung des Kontaktfederblocks





По вопросам продаж и поддержки обращайтесь:

Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +(727)345-47-04

Беларусь +(375)257-127-884

Узбекистан +998(71)205-18-59

Киргизия +996(312)96-26-47

эл.почта: ddo@nt-rt.ru || сайт: <https://dold.nt-rt.ru/>