

## Busbar overview

# Busbars

In switchgears and controls, it may be necessary to bring the neutral conductor and the protective conductor together at a central point. Busbars are available for this purpose and can be used for connecting a large number of conductors in a confined space (up to 70 conductors on a 1 m busbar). The conductors are connected by means of a screw clamp or tension clamp. Busbars are held in position by pressure clamps or screw clamps onto the busbar holders. The cable clamps can be pushed on the busbar and adjusted to the entire wiring in the system. The busbars can be used unperforated in any lengths. They are fixed using the SH busbar holder which can, for longer busbars, also be positioned between the clamps.

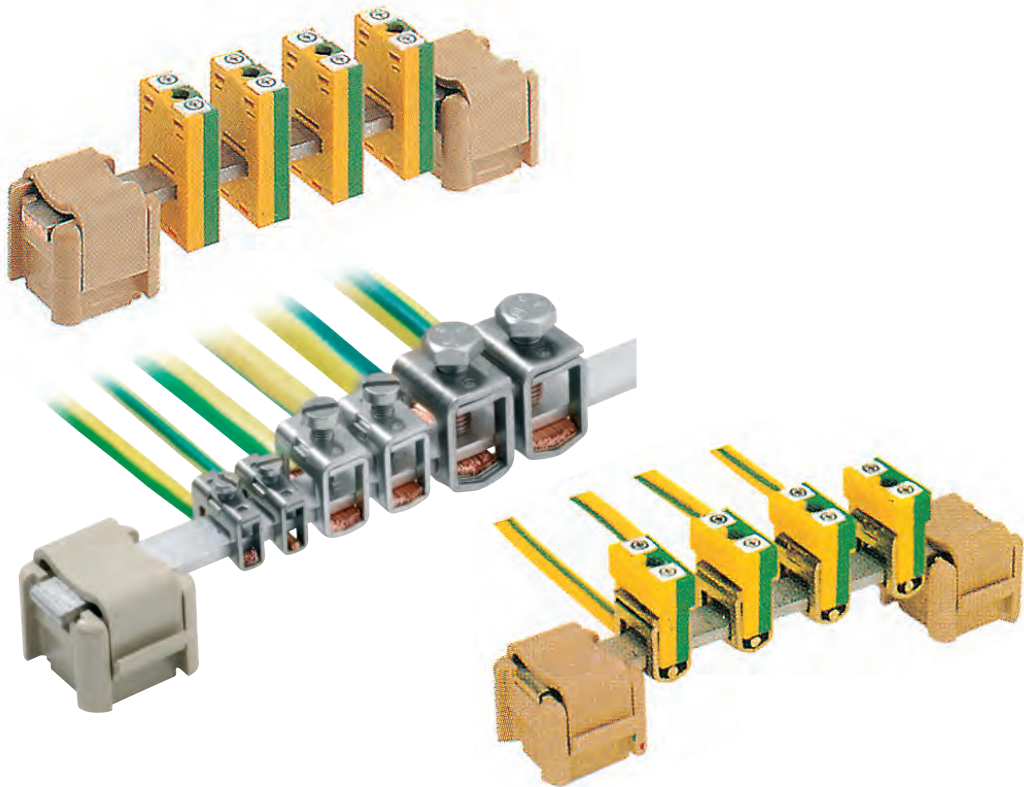
In order to bring together neutral conductors and protective conductors at a central point, it is advantageous to use ZB cable clamps together with 10 x 3 or 6 x 6 busbars. The cable clamps can be pushed onto the busbar and adjusted to the entire wiring

in the system. The cable clamp serves as the protective conductor connection and can be supplied with green/yellow insulating caps. These caps indicate the protective function and marking tags allow clear identification of each conductor. If the cable clamps are used to connect neutral conductors, they can be marked with a blue insulating cap.

ZBE 6 can also be swivelled onto the busbar retrospectively

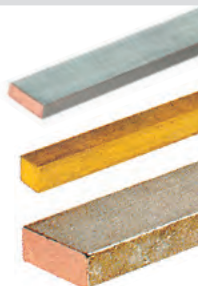
## H

### Cable clamps



**Weidmüller** 

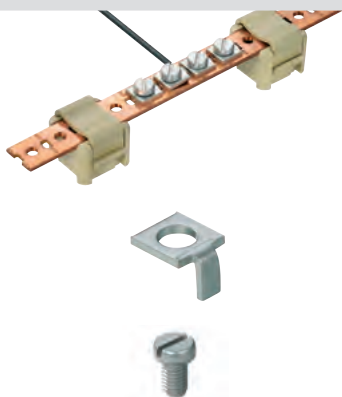
**Busbars, unperforated**



**SSch**

Type	Material	Cross-section	Length	Current carrying capacity	Qty.	Order No.
SSch 10 x 3	Copper, tin-plated	10 x 3 mm	1 m	140 A	1	0348900000
SSch 10 x 3	Steel, galvanised	10 x 3 mm	1 m		1	0438000000
SSch 10 x 3	Brass, blank	10 x 3 mm	1 m	100 A	1	0259800000
SSch 6 x 6	Copper, tin-plated	6 x 6 mm	1 m	140 A	1	0571300000
SSch 6 x 6	Brass, blank	6 x 6 mm	1 m	100 A	1	0571200000
SSch 15 x 6	Copper, tin-plated	15 x 6 mm	1 m	265 A	1	0357400000

**Busbars, perforated**



**NSch / ESch**

Type	Material	Cross-section	Length	Current carrying capacity	Qty.	Order No.
NSch 15 x 2	Copper, blank	15 x 2 mm	1 m	80 A	1	0280200000
ESch 12 x 2	Steel, galvanised	12 x 2 mm	1 m		1	0280300000

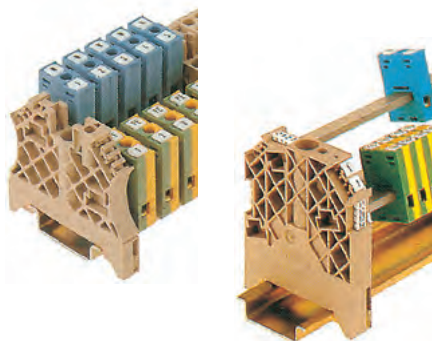
Pressure piece	Qty.	Order No.
DKSUE	100	0280100000
Clamping screw	Qty.	Order No.
BFSC M5 x 8	100	0296700000

**Connection data NSch / ESch**

Screw connection solid	0.5 ... 2.5 mm <sup>2</sup>
Stripping length	9 mm
Cable lug connection	max. 16 mm <sup>2</sup>
Max. current per connection	27 A



**Busbar holders**

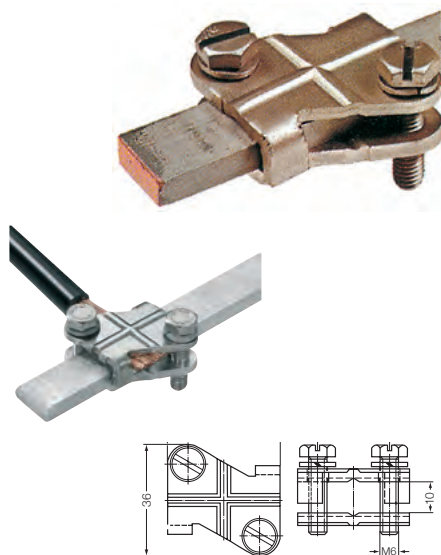


**WEW**

Type	For busbar cross-section	Qty.	Order No.
WEW 35/1	10 x 3, 6 x 6	50	1059000000
WEW 35/2	10 x 3, 6 x 6	100	1061200000

WEW 35/1 and WEW35/2 as busbar holder together with the ZB 4 G tension clamp

**Connection element**



**AK 95**

Type	For busbar cross-section	Qty.	Order No.
AK 95	15 x 6 mm	10	0364200000

The AK 95 connection element is used as a tension clamp for 15 x 6 busbars Connection cross-sections:

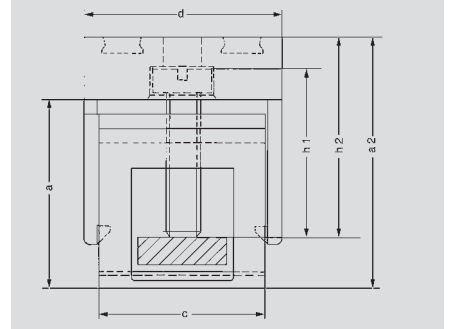
e = 6...16 mm<sup>2</sup>

f = 6...50 mm<sup>2</sup>

m = 16...50 mm<sup>2</sup>

**Busbars**

**Cable clamp, uninsulated**



**For 10 x 3 mm busbars**



Connection cross-section:  
 Solid 0.5 ... 6.0 mm<sup>2</sup>  
 Flexible 0.5 ... 4.0 mm<sup>2</sup>  
 Stranded -  
 Clamping screw M 3  
 Stripping length 16 mm

**For retrofitting**



Connection cross-section:  
 Solid 1.0 ... 10 mm<sup>2</sup>  
 Flexible 1.5 ... 10 mm<sup>2</sup>  
 Stranded -  
 Clamping screw M 4  
 Stripping length 19 mm

**Also for 10 x 5 mm busbar**



Connection cross-section:  
 Solid 1.5 ... 10 mm<sup>2</sup>  
 Flexible 2.5 ... 10 mm<sup>2</sup>  
 Stranded -  
 Clamping screw M 4  
 Stripping length 19 mm



Connection cross-section:  
 Solid 2.5 ... 16 mm<sup>2</sup>  
 Flexible 2.5 ... 16 mm<sup>2</sup>  
 Stranded 16 ... 25 mm<sup>2</sup>  
 Clamping screw M 4  
 Stripping length 16 mm



Connection cross-section:  
 Solid -  
 Flexible 16 ... 35 mm<sup>2</sup>  
 Stranded 16 ... 50 mm<sup>2</sup>  
 Clamping screw M 6  
 Stripping length 19 mm

**For 6 x 6 mm busbar**



Connection cross-section:  
 Solid 0.5 ... 6.0 mm<sup>2</sup>  
 Flexible 0.5 ... 4.0 mm<sup>2</sup>  
 Stranded -  
 Clamping screw M 3  
 Stripping length 16 mm



Connection cross-section:  
 Solid 2.5 ... 16 mm<sup>2</sup>  
 Flexible 2.5 ... 16 mm<sup>2</sup>  
 Stranded 16 ... 25 mm<sup>2</sup>  
 Clamping screw M 4  
 Stripping length 12 mm

**ZB / ZBE**

Type	Colour	Dimensions [mm]				Qty.	Order No.
		a	width	c	h1		
ZB 4, blank	-	11.7	5.6	16.0	10.0	50	0316500000
Insulating cap	blue					50	0475480000
Insulating cap	green / yellow					50	0475460000

ZBE 6, blank	-	19.5	8.2	19.5	19.0	50	0459500000
Insulating cap	blue					50	0526080000
Insulating cap	green / yellow					50	0526060000

ZB 10, blank	-	19.5	8.2	19.5	19.0	50	1261300000
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ZB 16, blank	-	17.0	10.0	16.0	17.0	50	0316600000
Insulating cap	blue					50	0502980000
Insulating cap	green / yellow					50	0502960000

ZB 35, blank	-	21.0	14.4	18.4	20.5	20	0266500000
Insulating cap	blue					50	0502780000

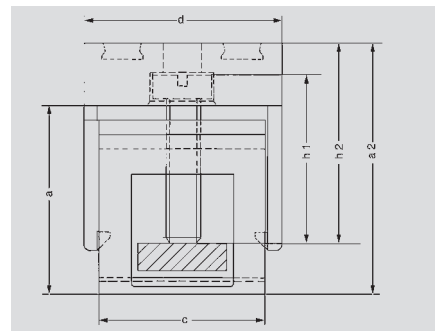
**ZB**

Type	Colour	Dimensions [mm]				Qty.	Order No.
		a	b	c	h1		
ZB 4/6, blank		14.7	5.6	12.5	10.0	50	0556700000

ZB 16/6, blank		19.0	10.0	12.5	17.0	50	0556800000
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Cable clamp, insulated

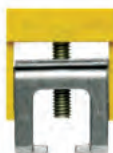


For 10 x 3 mm busbars



Connection cross-section:  
 Solid 0.5 ... 6.0 mm<sup>2</sup>  
 Flexible 0.5 ... 4.0 mm<sup>2</sup>  
 Stranded -  
 Clamping screw M 3  
 Stripping length 16 mm

For retrofitting



Connection cross-section:  
 Solid 1.0 ... 10 mm<sup>2</sup>  
 Flexible 1.5 ... 10 mm<sup>2</sup>  
 Stranded -  
 Clamping screw M 4  
 Stripping length 19 mm



Connection cross-section:  
 Solid 2.5 ... 16 mm<sup>2</sup>  
 Flexible 2.5 ... 16 mm<sup>2</sup>  
 Stranded 16 ... 25 mm<sup>2</sup>  
 Clamping screw M 4  
 Stripping length 16 mm



Connection cross-section:  
 Solid -  
 Flexible 16 ... 35 mm<sup>2</sup>  
 Stranded 16 ... 50 mm<sup>2</sup>  
 Clamping screw M 6  
 Stripping length 19 mm

Tension clamp connection



Connection cross-section:  
 Solid 0.5 ... 4.0 mm<sup>2</sup>  
 Flexible 0.5 ... 2.5 mm<sup>2</sup>  
 Stranded -  
 Stripping length 10 mm

For 6 x 6 mm busbar



Connection cross-section:  
 Solid 0.5 ... 6.0 mm<sup>2</sup>  
 Flexible 0.5 ... 4.0 mm<sup>2</sup>  
 Stranded -  
 Clamping screw M 3  
 Stripping length 16 mm



Connection cross-section:  
 Solid 2.5 ... 16 mm<sup>2</sup>  
 Flexible 2.5 ... 16 mm<sup>2</sup>  
 Stranded 16 ... 25 mm<sup>2</sup>  
 Clamping screw M 4  
 Stripping length 12 mm

ZB / ZBE / ZF

Type	Colour	Dimensions [mm]				Qty.	Order No.
		a2	width	d	h2		
ZB 4 G GN/GE	green/yellow	27.0	7.6	19.7	15.5	50	0322160000
ZB 4 G BL	blue	27.0	7.6	19.7	15.5	50	0322180000
ZB 4 G SW	black	27.0	7.6	19.7	15.5	50	0322110000
ZB 4K GN/GE	grün/gelb	18.5	6.0	19.0	13.0	50	0475360000
ZB 4K BL	blue	18.5	6.0	19.0	13.0	50	0475380000
ZBE 6K GN/GE	green/yellow	27.0	8.0	22.5	23.0	50	0525960000
ZBE 6K BL	blue	27.0	8.0	22.5	23.0	50	0525980000
ZBE 6K SW	black	27.0	8.0	22.5	23.0	50	0525910000
ZB 16K GN/GE	green/yellow	24.0	10.0	19.2	20.0	50	0502860000
ZB 16K BL	blue	24.0	10.0	19.2	20.0	50	0502880000
ZB 35K GN/GE	green/yellow	25.0	14.4	32.0	20.5	20	0502660000
ZB 35K BL	blue	25.0	14.4	32.0	20.5	20	0502680000
ZB 35K SW	black	25.0	14.4	32.0	20.5	20	0502610000
ZF 4 S	beige	22.0	6.1	24.5	-	50	1814680000
ZF 4 S BL	blue	22.0	6.1	24.5	-	50	1814660000
ZF 4 S GN/GE	green/yellow	22.0	6.1	24.5	-	50	1814670000

ZB

Type	Colour	Dimensions [mm]				Qty.	Order No.
		a2	b	d	h2		
ZB 4/6K GN/GE	green/yellow	21.2	6.0	25.0	14.0	50	0565460000
ZB 4/6K BL	blue	21.2	6.0	25.0	14.0	50	0565480000
ZB 16/6K GN/GE	green/yellow	26.0	9.7	25.0	20.0	50	0569660000

# Terminal rail systems

Both active and passive components and intelligent modules are mounted on terminal rails – a method which has proven its worth over the years. But it is only after the use of certain consumables – which are frequently not taken into consideration – that electrical installation is finally completed. In this chapter, users will find a range of terminal rails and profile rails for component installation together with end brackets for holding and isolating the components. This guarantees firm installation and isolation. Weidmüller supplies components which show perfect functional compatibility.

Terminal rails are made of either steel, stainless steel, aluminium, copper or plastic, depending on the area of application.

## Stainless steel

Stainless steel is a collective noun for all kinds of steel (alloys) which are smelted in a special process and have a high degree of purity. Stainless steel has much-enhanced resistance to corrosion. Weidmüller's stainless steel terminal rails have the following composition: X5 CrNi 18-10 stainless steel (i.e. ~ 18 % chromium, ~ 10 % nickel).

## Aluminium

Aluminium is second only to copper in its electrical conductivity. One advantage is its light weight. Aluminium oxidises quickly in air; thus passivated, it offers excellent corrosion protection.

## Copper

Copper, a heavy metal, has the best electrical conductivity of all metals used. As it is a soft metal, Weidmüller's terminal rails are 2.3 mm thick.

## Plastic

The plastic terminal rail scores on two counts: firstly, its insulating properties, and secondly, its low weight. This leads to its use in special applications where, for example, clearance and creepage distances with respect to the mounting plate cannot be achieved with the standard terminal rails.

## Steel

Weidmüller started developing RoHS-compliant surfaces at a very early stage to meet the requirements of EU directives. This commitment is now paying off because Weidmüller products comply with the statutory instruments at an early date and provide you, the customer, with the customary, high Weidmüller quality. All the yellow-passivated surfaces so well known to users will in future be replaced by terminal rails with the new **WIN-Q** surface finish. This name stands for the Weidmüller quality, in other words excellent surface protection and, at the same time, excellent electrical properties.

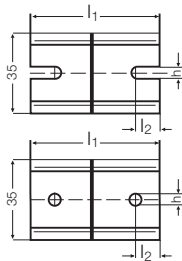
A terminal rail can also be used as a protective conductor busbar. Weidmüller PE / earth terminals in the W-Series, Z-Series, I-Series, SAK- and AKZ-Series comply with requirements stipulated in IEC 60 947-7-2. According to VDE 0100 part 540, for conductors with cross-sectional areas exceeding 10 mm<sup>2</sup>, both protective and neutral conductors may be grouped together as a single category of conductors designated PEN.

If a terminal rail is used as a PEN busbar, the following criteria must be observed:

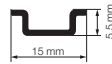
- Only E-Cu or aluminium profiles are allowed
- Short-circuit currents and thermal rated currents must be taken into account
- The terminal rails are to be insulated as a contribution to protective insulation

All unperforated terminal rails can be provided with fixing holes (state dimensions h and l2).  
Possible diameters are 3.5 / 5.6 / 5.5 / 7 mm.

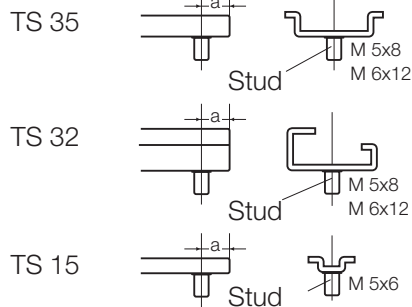
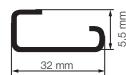
All unperforated steel rails can also be supplied with welded on steel studs (state dimension a and required studs).



**TS 15**



**TS 32**



**TS 35 x 7.5**

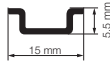


**TS 35 x 15**

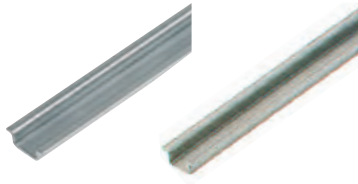


## Terminal rails

### TS 15 terminal rail



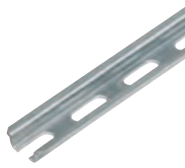
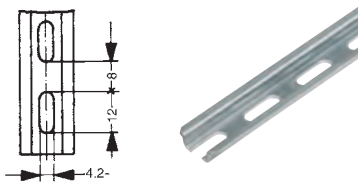
#### Unperforated



### TS 15 x 5

Aluminium	Short-circuit strength	Material thickness	Length	Qty.	Order No.
TS 15x5 2M/AL/BK (max. permissible rated current for PEN function = 76 A)	16 mm <sup>2</sup>	1 mm	2 m	10 m	0134700000
Steel, galvanised and passivated					
TS 15x5 2M/ST/ZN	10 mm <sup>2</sup>	1 mm	2 m	2 m	0514200000

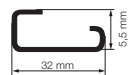
#### With slotted hole



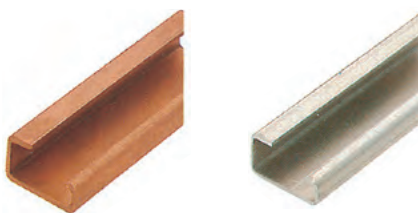
Aluminium	Short-circuit strength	Material thickness	Length	Qty.	Order No.
TS 15x5/LL 2M/AL/BK (max. permissible rated current for PEN function = 76 A)	16 mm <sup>2</sup>	1 mm	2 m	2 m	0217900000
Steel, galvanised and passivated					
TS 15x5/LL 2M/ST/ZN	10 mm <sup>2</sup>	1 mm	2 m	2 m	0117500000
TS 15x5/LL 1M/ST/ZN	10 mm <sup>2</sup>	1 mm	1 m	10 m	0117510000

## H

### TS 32 terminal rail



#### Unperforated



### TS 32 x 15

Aluminium	Short-circuit strength	Material thickness	Length	Qty.	Order No.
TS 32X15 2M/AL/BK (max. permissible rated current for PEN function = 192 A)	70 mm <sup>2</sup>	1.5 mm	2 m	2 m	0169300000
Steel, galvanised and passivated					
TS 32X15 2M/ST/ZN	35 mm <sup>2</sup>	1.5 mm	2 m	2 m	0122800000

#### Copper

TS 32X16.2 2M/CU/BK (max. permissible rated current for PEN function = 269 A)	120 mm <sup>2</sup>	2.1 mm	2 m	2 m	0364300000
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#### Stainless steel

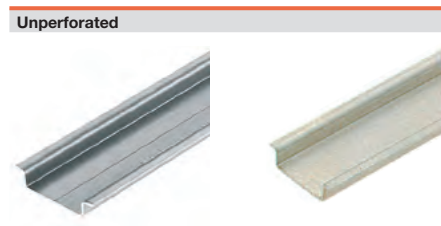
TS 32X15 2M/CRN	35 mm <sup>2</sup>	1.5 mm	2 m	2 m	0293220000
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#### With slotted hole



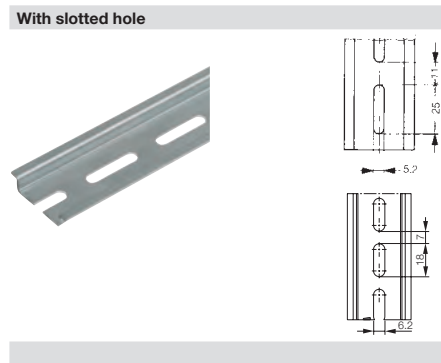
Steel, galvanised and passivated	Short-circuit strength	Material thickness	Length	Qty.	Order No.
TS 32X15/LL 2M/ST/ZN	35 mm <sup>2</sup>	1.5 mm	2 m	2 m	0514400000

TS 35 x 7,5 terminal rail



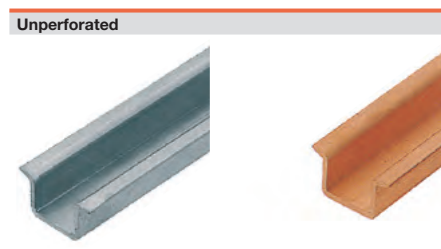
TS 35 x 7.5

Aluminium	Short-circuit strength	Material thickness	Length	Qty.	Order No.
TS 35X7.5 2M/AL/BK (max. permissible rated current for PEN function = 125 A)	35 mm <sup>2</sup>	1 mm	2 m	2 m	0330800000
Steel, galvanised and passivated					
TS 35X7.5 2M/ST/ZN	16 mm <sup>2</sup>	1 mm	2 m	2 m	0383400000
TS 35X7.5 1M/ST/ZN	16 mm <sup>2</sup>	1 mm	1 m	10 m	0383410000
Stainless steel					
TS 35X7.5 2M/CRN	16 mm <sup>2</sup>	1 mm	2 m	2 m	1747350000



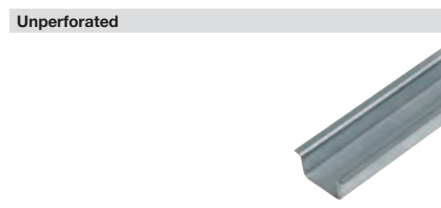
Steel, galvanised and passivated	Short-circuit strength	Material thickness	Length	Qty.	Order No.
TS 35X7.5/LL 2M/ST/ZN	16 mm <sup>2</sup>	1 mm	2 m	2 m	0514500000
TS 35X7.5/LL 1M/ST/ZN	16 mm <sup>2</sup>	1 mm	1 m	10 m	0514510000
TS 35X7.5/LL/6 2M/ST/ZN	16 mm <sup>2</sup>	1 mm	2 m	2 m	0514570000

TS 35 x 15 terminal rail

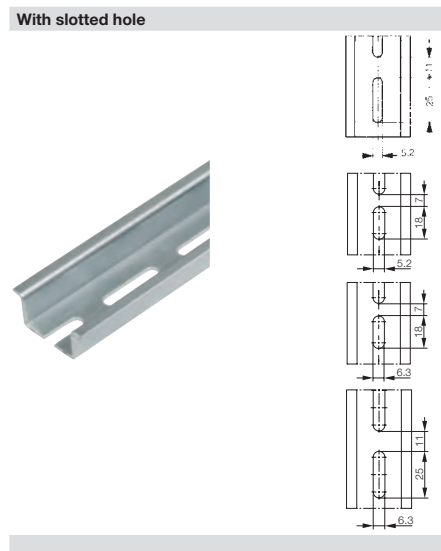


TS 35 x 15

Copper	Short-circuit strength	Material thickness	Length	Qty.	Order No.
TS 35X15/2.3 2M/CU/BK (max. permissible rated current for PEN function = 309 A)	150 mm <sup>2</sup>	2.3 mm	2 m	2 m	0270100000
Steel, galvanised and passivated					
TS 35X15/2.3 2M/ST/ZN	50 mm <sup>2</sup>	2.3 mm	2 m	2 m	0498000000
Aluminium					
TS 35X15/2.3 2M/AL/BK (max. permissible rated current for PEN function = 192 A)	70 mm <sup>2</sup>	2.3 mm	2 m	2 m	1848290000



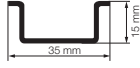
Steel, galvanised and passivated	Short-circuit strength	Material thickness	Length	Qty.	Order No.
TS 35X15 2M/ST/ZN	25 mm <sup>2</sup>	1.5 mm	2 m	2 m	0236400000



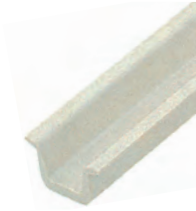
Steel, galvanised and passivated	Short-circuit strength	Material thickness	Length	Qty.	Order No.
TS 35X15/LL 2M/ST/ZN	25 mm <sup>2</sup>	1.5 mm	2 m	2 m	0236500000
TS 35X15/LL 1M/ST/ZN	25 mm <sup>2</sup>	1.5 mm	1 m	10 m	0236510000
TS 35X15LL/5 2M/ST/ZN	25 mm <sup>2</sup>	1.5 mm	2 m	2 m	1837380000
TS 35X15/LL/6x18 2M/ST/ZN	25 mm <sup>2</sup>	1.5 mm	2 m	2 m	1805980000
TS 35X15/LL/6x25 2M/ST/ZN	25 mm <sup>2</sup>	1.5 mm	2 m	2 m	1866290000

Terminal rails

TS 35 x 15 terminal rail



Unperforated

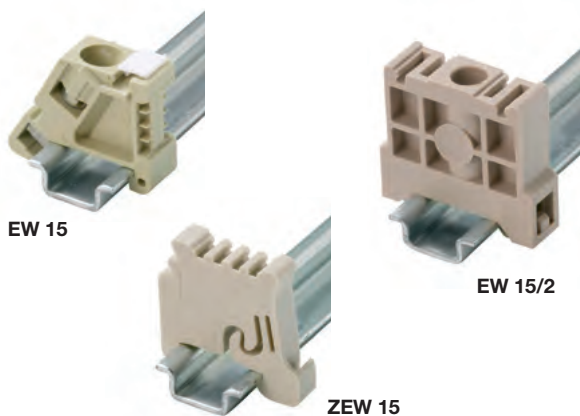


**TSK 35 x 15**

Plastic PVC RAL 7035	Length	Qty.	Order No.
TSK 35X15 2M PVC/GR	2 m	2 m	0514300000

## End brackets

## For TS 15 terminal rail

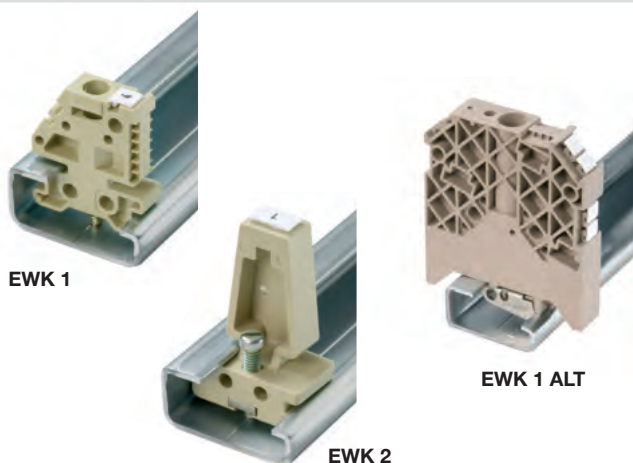


Polyamide 66, screw-in	Colour	Torque	Qty.	Order No.
EWK AKA 2.5	beige	0.4 Nm	50	0348660000
EW 15	beige	0.4 Nm	50	0382860000

Polyamide with fibreglass, screw-in	Colour	Torque	Qty.	Order No.
EW 15/2	dark beige	0.4 Nm	50	1071900000

Polyamide 66, screwless	Colour	Torque	Qty.	Order No.
ZEW 15	beige		20	7920340000

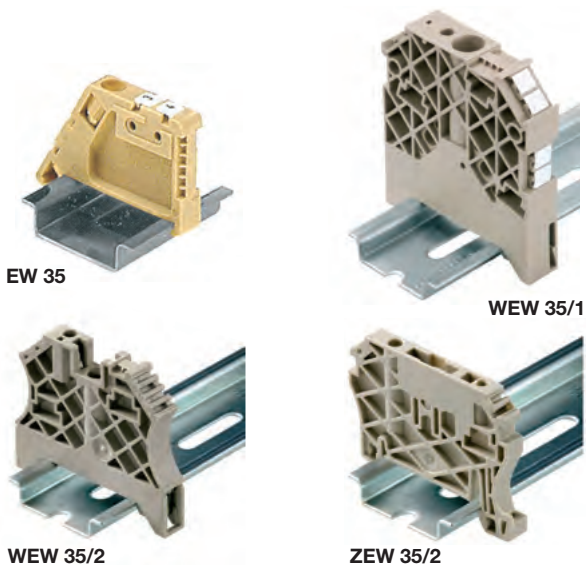
## For terminal rail TS 32



Polyamide 66, screw-in	Colour	Torque	Qty.	Order No.
EWK 2	beige	1.2 Nm	50	0199360000
EWK 1 TS 32 M4X18	beige	1.2 Nm	50	0206160000
EWK 1 ALT	beige	0.6 Nm	50	0495160000

Polyamide with fibreglass, screw-in	Colour	Torque	Qty.	Order No.
WEW 32/1	dark beige	0.5 Nm	50	1067600000

## For terminal rail TS 35



Polyamide 66, screw-in	Colour	Torque	Qty.	Order No.
EW 35	beige	0.5 Nm	50	0383560000
EW 35 GR	grey	0.5 Nm	50	0383530000

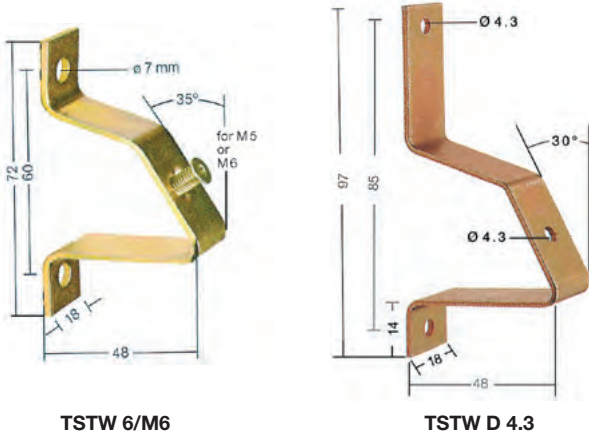
Polyamide with fibreglass, screw-in	Colour	Torque	Qty.	Order No.
WEW 35/1	dark beige	1.2 Nm	50	1071900000
WEW-35/2	dark beige	0.5 Nm	100	1061200000

Polyamide 66, screwless	Colour	Torque	Qty.	Order No.
ZEW (6 mm)	beige		20	9540000000
ZEW 35/2 (8 mm)	beige		20	8630740000

**Terminal rails**

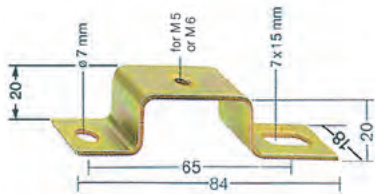
**Terminal rail supports / Mounting feet**

**Terminal rail supports**



**TSTW 6/M6**

**TSTW D 4.3**



**TST**

	Thread	Qty.	Order No.
TSTW 5/M5	M5	10	0178100000
TSTW 5/M5 galvanised	M6	10	1779100000
TSTW 6/M6	M5	10	0164000000
TSTW D 4.3	Hole ø 4.3 mm	10	1610110000

Terminal rail supports of type **TSTW** are used for angled fixing of terminal rails at an angle of 35°.

TST 2/M5	M5	10	1286600000
TST 2/M6	M6	10	0101700000

The **TST** terminal rail support is used for assembly of terminal rails in a frame or over a cut-out

**Fixing screws**

FKSC M5x8 Ø9	50	0295900000
FKSC M6x8 Ø9	50	0642600000
FKSC M6x12 Ø9	50	0353500000

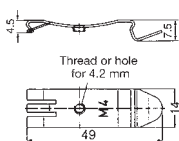
Weidmüller supplies fixing screws with hexagonal sockets and a very low head for the terminal rail supports so that the terminals can also be fitted over the screw.

Terminal rail supports / Mounting feet

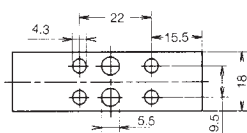
Mounting feet



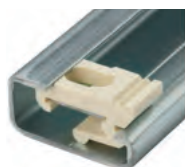
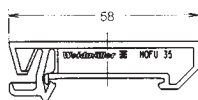
FM



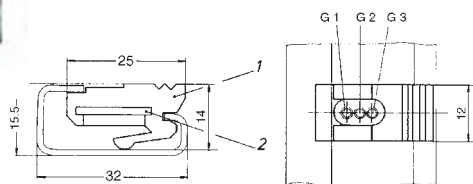
MOFU 35/LO/1



MOFU 35



MB



Clip-on foot, steel for TS 35	Thread	Qty.	Order No.
FM 4	M4	40	0687900000
FM 5	M5	40	0636800000
FM 6	M6	40	0636900000
FM 4.2	Hole ø 4.2 mm	40	1724580000

Mounting foot, PA orange for TS 35		Qty.	Order No.
MOFU 35/LO/1	with holes	20	0646260000
MOFU 35		20	0495660000

Sliding nut for TS 32		Colour	Qty.	Order No.
MB M3/M5	M3 und M5	creme	20	0503500000
MB M5/M3	M5 und M3	black	20	0553400000
MB M6/M4	M6 und M4	grey	20	0334900000

The sliding nut for the RS 32 terminal rail has two threaded holes for screws M3 + M5 / M6 + M4 / M5 + M3. It is used to fasten components which cannot be slotted directly onto the TS 32, in particular the smaller TS 15 top hat rail. This enables, for example, mini-terminals to be snapped onto the TS 15 first, and this rail is then fastened together with the terminals to the TS 32 using the sliding nut.