



Terminal and Junction Boxes Ex e / Ex i, Glass Fiber Reinforced Polyester (GRP)

GR.T*

- Glass fiber reinforced polyester (GRP) enclosure
- Installation in Zone 1, Zone 2, Zone 21 and Zone 22
- Installation in Class I, II, Division 2
- Installation in Class I Zone 1 and Class II Zone 22
- Ex eb, Ex ia and Ex tb certified
- Modern design with high impact resistance
- Easy installation due to easily accessible mounting points
- Prefabricated mounting grid for flexible arrangement of internal components
- Durable IP degree of protection due to foamed gasket and protected sealing area
- Easy cover opening without damage due to multiple pry points
- Withstands temperatures down to -60 °C
- Customizable configuration of terminals, cable entries and cable gland types as per specification
- Sturdy hinges as an option

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Function

The GR.* series can be equipped with various types and quantities of terminals, entry devices and accessories. Pepperl+Fuchs solution engineering teams provide any custom configurations including combinations of terminals and controls. This standardized enclosure series for all Pepperl+Fuchs products consists of carbon-loaded, glass-fiber reinforced polyester with stainless steel cover screws. The enclosure series provides an anti-static, UV stabilized and corrosion resistant solution. Many features provide for easy installation and handling. It is certified for operation in low temperatures of down to -60 °C and thus can be applied in many applications as a replacement for stainless steel.

Type Code

Enclosure type

GR glass fiber reinforced polyester (GRP)

Type of solution

TJE junction box (Ex e)

TJI junction box (Ex i)

TBE terminal box (Ex e)

TBI terminal box (Ex i)

TBM terminal box, various types of explosion protection, e.g. (Ex e, Ex i) or (Ex e, Ex op pr)

TB1 terminal box with one terminal

TFO fiber optic splice box (Ex op pr)

empty enclosure (U-certified)

Height [cm]

n see dimensions data table

Width [cm]

n see dimensions data table

Depth [cm]

n see dimensions data table

Cable entry face orientation

B face [B] at bottom

D face [D] at bottom

Variant type

S standard product

C configured product

CA configured and adapted product

Y engineered product

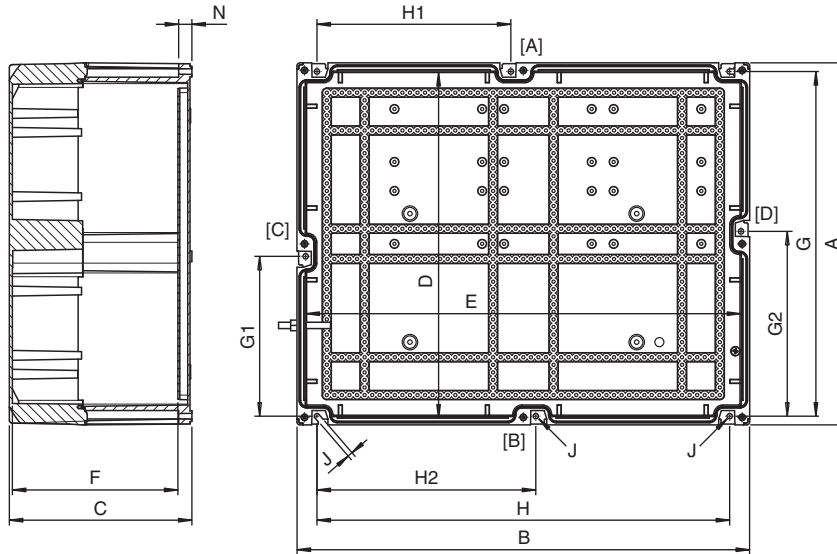
U empty enclosure

Variant number

xxxxxx

| | | | | | | | |
|---|------|-----|-----|-----|----|----|--------|
| GR | .TBI | .13 | .18 | .09 | .B | -S | xxxxxx |
| Example: Terminal box for intrinsically safe circuits, size 13x18x9 cm, landscape orientation with face B at bottom | | | | | | | |

Dimensions



Dimension values see data table.

Image and drawing are generic for this device type and may deviate from the specific variant.

Legend

| | |
|-------------|--|
| A | Height |
| B | Width |
| C | Depth |
| D | Internal height |
| E | Internal width |
| F | Internal depth |
| G | Mounting holes distance, vertical |
| G1 | Mounting holes distance to middle hole 1, vertical (not with all variants) |
| G2 | Mounting holes distance to middle hole 2, vertical (not with all variants) |
| H | Mounting holes distance, horizontal |
| H1 | Mounting holes distance to middle hole 1, horizontal (not with all variants) |
| H2 | Mounting holes distance to middle hole 2, horizontal (not with all variants) |
| J | Mounting holes diameter |
| N | Thickness of mounting brackets |
| [A] ... [D] | Cable entry faces |

Technical Data

Electrical specifications

| | |
|-------------------|--|
| Operating voltage | 690 V AC / DC max. , depending on size for ATEX / IECEx 600 V AC / DC max. for North American approvals |
| Operating current | 350 A max. , depending on size and certification |

Mechanical specifications

| | |
|----------------------|---|
| Enclosure cover | fully detachable , optional hinges |
| Cover fixing | stainless steel combination Phillips and slotted screw , see data table |
| Cover seal | foamed silicone |
| Degree of protection | IP66 , Type 4X |

Technical Data

| | |
|--|--|
| Cable entry | see data table |
| Number of cable entries | see data table |
| Terminal assembly | |
| Number of rails | see data table |
| Terminal type | Standard see PDF data sheet, other terminal types optional |
| Number of terminals per rail | see data table |
| Material | |
| Enclosure | carbon loaded, antistatic glass fiber reinforced polyester (GRP) |
| Finish | inherent color black |
| Grounding plate | 2 mm brass optional |
| Mass | see data table valid for empty enclosure, will increase according to integrated components |
| Dimensions | see data table |
| Mounting | see data table |
| Grounding | none as standard optional M6 or M8 internal/external brass nickel-plated grounding bolt optional M6 or M8 internal/external stainless steel grounding bolt |
| Ambient conditions | |
| Ambient temperature | -60 ... 65 °C (-76 ... 149 °F) |
| Data for application in connection with hazardous areas | |
| EU-type examination certificate | CML 17 ATEX 3255X CML 17 ATEX 3084U |
| Marking | Ⓢ II 2 GD Ex eb IIC T* Gb Ex ia IIC T* Gb Ex tb IIIC T** °C Db T6/T80 °C @ Ta +40 °C T5/T95 °C @ Ta +55 °C T4/T130 °C @ Ta +65 °C |
| Maximum power dissipation | see data table |
| International approvals | |
| IECEX approval | IECEX CML 17.0144X IECEX CML 17.0039U |
| ETL approval | |
| ETL certificate | Intertek 5003368 |
| Approved for | Class I and II, Division 2 Class I, Zone 2, Class II, Zone 22 |
| cETLus | according UL 508A , UL 698A , UL 121201 |
| Ambient temperature | -25 ... 40 °C (-13 ... 104 °F) |
| EAC approval | RU C-DE.BH02.B.00016/18 |
| CCoE approval | PESO A/P/HQ/KA/104/5627 (P432459) |
| IA approval | MASC S/18-1639X MASC S/18-1359U |
| CCC approval | 2020322303002568 |
| Conformity | |
| Degree of protection | EN60529 and UL 50 / UL 50E |
| CE marking | 0102 |
| General information | |
| Ordering information | This terminal box will be delivered completely configured and assembled ready for use. For configuration details please contact customer service. |
| Supplementary information | EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable. For information see www.pepperl-fuchs.com . |
| Accessories | |

Technical Data

Optional accessories

M6 or M8 internal/external brass nickel-plated grounding bolts
 M6 or M8 internal/external stainless steel grounding bolts
 grounding plate, brass
 mounting plate, stainless steel
 hinges, polyamide
 mounting block for DIN mounting rail, polyamide
 engraved traffolyte tag label
 engraved AISI 316L stainless steel tag label
 color in-fill stainless steel tag label

Dimensions and Enclosure Details

| Type | External dimensions [mm] | | | Internal dimensions [mm] | | | Mounting [mm] | | | | | | | | | Mass [kg] | Cover screws | | | Max. power dissipation [W] |
|----------------|--------------------------|-----|-------|--------------------------|-----|-------|---------------|-------|-------|-----|-------|-------|---|----|--------|-----------|--------------|------|--------|----------------------------|
| | A | B | C | D | E | F | G | G1 | G2 | H | H1 | H2 | J | N | S qty. | | Mx | qty. | T [Nm] | |
| GR.T*.10.10.07 | 99 | 99 | 65.0 | 76 | 76 | 48.0 | 66 | - | - | 84 | - | - | 5 | 13 | 2 | 0.4 | M4 | 4 | 1.5 | 3.2 |
| GR.T*.13.13.09 | 129 | 129 | 85.0 | 106 | 106 | 68.0 | 96 | - | - | 114 | - | - | 5 | 13 | 2 | 0.6 | M4 | 4 | 1.5 | 6.7 |
| GR.T*.13.18.09 | 129 | 179 | 91.5 | 106 | 156 | 69.0 | 106 | - | - | 126 | - | - | 7 | 18 | 2 | 1.0 | M6 | 4 | 3.5 | 11.0 |
| GR.T*.18.18.10 | 179 | 179 | 104.0 | 156 | 156 | 81.5 | 126 | - | - | 156 | - | - | 7 | 18 | 2 | 1.4 | M6 | 4 | 3.5 | 14.0 |
| GR.T*.18.24.10 | 179 | 239 | 104.0 | 156 | 216 | 81.5 | 156 | - | - | 186 | - | - | 7 | 18 | 2 | 1.7 | M6 | 4 | 3.5 | 17.0 |
| GR.T*.18.36.10 | 179 | 359 | 104.0 | 156 | 336 | 71.5 | 156 | - | - | 306 | - | - | 7 | 18 | 4 | 2.4 | M6 | 4 | 3.5 | 22.0 |
| GR.T*.18.36.17 | 179 | 359 | 166.5 | 156 | 336 | 144.0 | 156 | - | - | 336 | - | - | 7 | 18 | 4 | 3.1 | M6 | 4 | 3.5 | 27.0 |
| GR.T*.36.36.10 | 359 | 359 | 104.0 | 336 | 336 | 81.5 | 306 | - | - | 336 | - | - | 7 | 18 | 4 | 3.7 | M6 | 4 | 3.5 | 33.0 |
| GR.T*.36.36.17 | 359 | 359 | 166.5 | 336 | 336 | 144.0 | 306 | - | - | 336 | - | - | 7 | 18 | 4 | 4.6 | M6 | 4 | 3.5 | 39.0 |
| GR.T*.36.36.24 | 359 | 359 | 241.5 | 336 | 336 | 219.0 | 306 | - | - | 336 | - | - | 7 | 18 | 4 | 6.6 | M6 | 4 | 3.5 | 44.0 |
| GR.T*.36.72.17 | 359 | 719 | 166.5 | 336 | 696 | 144.0 | 336 | - | - | 666 | 316.5 | 349.5 | 7 | 18 | 6 | 8.3 | M6 | 6 | 3.5 | 104.0 |
| GR.T*.36.72.24 | 359 | 719 | 241.5 | 336 | 696 | 219.0 | 336 | - | - | 666 | 316.5 | 349.5 | 7 | 18 | 6 | 11.3 | M6 | 6 | 3.5 | 104.0 |
| GR.T*.48.60.24 | 479 | 599 | 241.5 | 456 | 576 | 219.0 | 456 | 211.5 | 244.5 | 546 | 256.5 | 289.5 | 7 | 18 | 8 | 12.2 | M6 | 8 | 3.5 | 72.0 |

S = mounting screws quantity, T = cover screws torque [Nm]

Mass is valid for empty enclosure, it will increase according to integrated components and cable glands

Terminal Configurations with Standard Terminals

| Type | DIN-Rails vertical | | | | DIN-Rails horizontal | | | | Terminal type | Terminal capacity [mm ²] |
|----------------|--------------------|-----------------------------|--------------------|-----------------|----------------------|-----------------------------|--------------------|-----------------|---------------|--------------------------------------|
| | Number of rails | Usable length per rail [mm] | Terminals per rail | Terminals total | Number of rails | Usable length per rail [mm] | Terminals per rail | Terminals total | | |
| GR.T*.10.10.07 | - | - | - | - | 1 | 47.5 | 9 | 9 | AKZ | 2.5 |
| GR.T*.13.13.09 | - | - | - | - | 1 | 67.5 | 13 | 13 | AKZ | 2.5 |
| GR.T*.13.18.09 | 1 | 66.5 | 13 | 13 | 1 | 101.5 | 19 | 19 | WDU | 2.5 |
| GR.T*.18.18.10 | 1 | 101.5 | 19 | 19 | 1 | 101.5 | 19 | 19 | WDU | 2.5 |
| GR.T*.18.24.10 | 1 | 101.5 | 19 | 19 | 1 | 161.5 | 31 | 31 | WDU | 2.5 |
| GR.T*.18.36.10 | 3 | 101.5 | 19 | 57 | 1 | 281.5 | 55 | 55 | WDU | 2.5 |
| GR.T*.18.36.17 | 3 | 101.5 | 19 | 57 | 1 | 281.5 | 55 | 55 | WDU | 2.5 |
| GR.T*.36.36.10 | 3 | 281.5 | 55 | 165 | 3 | 281.5 | 55 | 165 | WDU | 2.5 |
| GR.T*.36.36.17 | 3 | 281.5 | 55 | 165 | 3 | 281.5 | 55 | 165 | WDU | 2.5 |
| GR.T*.36.36.24 | 3 | 281.5 | 55 | 165 | 3 | 281.5 | 55 | 165 | WDU | 2.5 |
| GR.T*.36.72.17 | 6 | 271.5 | 53 | 318 | 3 | 641.5 | 125 | 375 | WDU | 2.5 |
| GR.T*.36.72.24 | 6 | 271.5 | 53 | 318 | 3 | 641.5 | 125 | 375 | WDU | 2.5 |
| GR.T*.48.60.24 | 5 | 381.5 | 74 | 370 | 4 | 501.5 | 98 | 392 | WDU | 2.5 |

For other terminal types and terminal capacities please contact Pepperl+Fuchs

Cable Entries max. Quantity per Size

| Type | Faces A and B | | | | | Faces C and D | | | | |
|----------------|---------------|-----|-----|-----|-----|---------------|-----|-----|-----|-----|
| | M16 | M20 | M25 | M32 | M40 | M16 | M20 | M25 | M32 | M40 |
| GR.T*.10.10.07 | 4 | 2 | 1 | 1 | - | 2 | 1 | 1 | - | - |
| GR.T*.13.13.09 | 9 | 5 | 3 | 2 | 1 | 6 | 4 | 2 | 2 | 1 |
| GR.T*.13.18.09 | 11 | 6 | 4 | 2 | 2 | 8 | 4 | 2 | 1 | 1 |
| GR.T*.18.18.10 | 15 | 8 | 6 | 3 | 2 | 12 | 6 | 5 | 2 | 2 |
| GR.T*.18.24.10 | 20 | 11 | 8 | 4 | 3 | 15 | 8 | 6 | 3 | 2 |
| GR.T*.18.36.10 | 30 | 18 | 11 | 6 | 4 | 14 | 8 | 5 | 3 | 2 |
| GR.T*.18.36.17 | 60 | 33 | 22 | 15 | 8 | 27 | 15 | 10 | 6 | 4 |
| GR.T*.36.36.10 | 35 | 18 | 13 | 7 | 5 | 30 | 18 | 11 | 6 | 4 |
| GR.T*.36.36.17 | 69 | 38 | 26 | 18 | 10 | 60 | 33 | 22 | 15 | 8 |
| GR.T*.36.36.24 | 69 | 38 | 26 | 18 | 10 | 60 | 33 | 22 | 15 | 8 |
| GR.T*.36.72.17 | 129 | 73 | 48 | 35 | 19 | 69 | 38 | 26 | 18 | 10 |
| GR.T*.36.72.24 | 129 | 73 | 48 | 35 | 19 | 69 | 38 | 26 | 18 | 10 |
| GR.T*.48.60.24 | 102 | 58 | 38 | 26 | 14 | 84 | 45 | 30 | 20 | 12 |

Cable gland standard type: polyamide Ex e cable glands

For other types of cable glands and combinations of different gland sizes please contact Pepperl+Fuchs