



## 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
- Ex e, 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

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



### 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

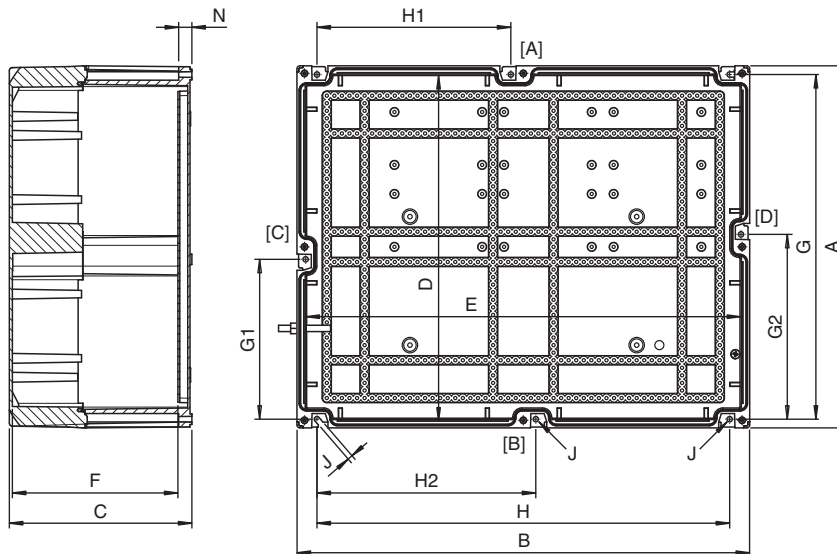
**U** empty enclosure

#### 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 table in PDF data sheet
Cover seal	foamed silicone
Degree of protection	IP66 , Nema Type 4X

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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## Technical Data

Cable entry	see table in PDF data sheet
Number of cable entries	see table in PDF data sheet
Terminal assembly	
Number of rails	see table in PDF data sheet
Terminal type	Standard see PDF data sheet, other terminal types optional
Number of terminals per rail	see table in PDF data sheet
Material	
Enclosure	carbon loaded, antistatic glass fiber reinforced polyester (GRP)
Finish	inherent color black
Grounding plate	2 mm brass optional
Mass	see table in PDF data sheet valid for empty enclosure, will increase according to integrated components
Dimensions	see table in PDF data sheet
Mounting	see table in PDF data sheet
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
<b>Ambient conditions</b>	
Ambient temperature	-60 ... 65 °C (-76 ... 149 °F)
<b>Data for application in connection with hazardous areas</b>	
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 IIC 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 table in PDF data sheet
<b>International approvals</b>	
UL approval	
Approved for	Class I and II, Division 2 Class I, Zone 2, Class II, Zone 22
cULus	UL 508A , UL 698A , UL 121201
cETLus	Intertek 5003368
Ambient temperature	-25 ... 40 °C (-13 ... 104 °F)
IECEx approval	IECEx CML 17.0144X IECEx CML 17.0039U
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
<b>Conformity</b>	
Degree of protection	EN60529 or UL 50 / UL 50E
CE marking	0102
<b>General information</b>	
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 <a href="http://www.pepperl-fuchs.com">www.pepperl-fuchs.com</a> .
<b>Accessories</b>	
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

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## 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 <sup>2</sup> ]
	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