

Operating Instructions in accordance with IECEx Scheme rules, IECEx 02



polyTOP



Product group: Empty enclosure **polyTOP**
Terminal enclosures **polyTOP**

The basic safety and health requirements are met in conformity with:

IEC 60079-0:	2004	Equipment General Requirements
IEC 60079-7:	2006	Increased Safety "e"
IEC 60079-11:	2006	Equipment protection by intrinsic safety "i"
IEC 61241-0:	2004	General Requirements "Dust"
IEC 61241-1:	2004	Protection By Enclosure "tD"
IEC 60079-26:	2006	Equipment with Equipment protection level (EPL) Ga

The low voltage regulations apply to enclosures with insertions.

Description of the Enclosure

IECEX Certificate of Conformity No.:	IECEX KEM 08.0003U	Ex empty enclosure
	IECEX KEM 08.0004	Increased Safety "e"
		Intrinsic Safety « i »
		Dust explosion protection

The polyester enclosure types PT 080 to PT 400 as operating material for areas with explosion hazards fulfill the requirements of IEC 60079-0, IEC 60079-7 for Increased Safety, and IEC 61241-0 and IEC 61241-1 for Protection by enclosure of group II. It is an electrical operating material made from glass fibre reinforced polyester moulding material, black, with reduced surface resistance $10^9 \Omega$. Cover and bottom part are screwed together by means of captive lid screws from PA6. PT 080 – PT 104 min. 1,5Nm – 2,0Nm and PT 120 – PT 400 min. 2,0Nm – max. 2,5Nm. The sealing type is a key and slot system with a silicone sealing. For the internal installation there are fixing screw threads in the bottom ribs to which the carrying rails for clamps will be screw fastened. Fastening is also possible by inserting a mounting plate. Screw fastening channels outside the sealing space are provided for supporting the enclosure.

Technical Data for empty enclosures

Enclosure dimensions	see type tag
Protection against contact, foreign particles, and water	IP65 i.a.w. IEC 60529
Operating temperature range	max: – 40°C ... + 100°C

Technical Data for terminal enclosures

Rated voltage	max. 1000 V (depending on terminal type)
Cross section for connection	max. 240 mm ²
PE cross section	max. 120 mm ²
Protection against contact, foreign particles, and water	IP65 i.a.w. IEC 60529
Ambient temperature range	max: – 40°C ... + 40°C

Terminal Insertion

The maximum insertion into the distributing and dividing box, depending from the conductor cross section and the permissible permanent current can be taken from the diagrams below.

For the type of protection "e", increased safety, only such terminals will be used, for which an IECEX Certificate of Conformity has been issued by a recognized testing institution. The clearances and creepage distances of the build-in electrical equipment in type of explosion protection increased safety "e" shall satisfy the requirements of Clause 4.4 and Clause 4.5 (Table 1) of IEC 60079-7.

Connection of PE conductor

Per each inserted line, one PE conductor terminal is provided. The width of the PE conductor bus or brackets depends on the size of the terminal straps. As from 10 mm² onward a PE conductor terminal strip must be inserted, or respectively, a bracket clamp on a PE conductor bus. Alternatively: PE terminals after test certificate, rated cross-section max. 240 mm². Internal connection facilities for earthing or bonding conductors shall satisfy the requirements of Clause 15 of IEC 60079-0.

Installation instructions

The degree of ingress protection of IP65 to IEC 60529 is only achieved if certified IP65 cable entries are used that are suitable for the application and correctly installed. There are only cable entries used, for which an IECEX Certificate of Conformity has been issued by a recognized testing institution. There are the manufacturer's specifications to be considered.

Identification

The identification will be made in accordance with IEC 60079-0, IEC 60079-26 and IEC 61241-0. The type tag consists of a self-adhesive polyester foil. Areas for intrinsically safe power circuits will be identified separately with light blue colour. Covers on the enclosure enabling the access to live, not intrinsically safe circuitry, will be identified by a tag showing the text "Switch off supply before removing cover".

Marking Plate



Terminal Boxes Series polyTOP

Ex e II T6
Ex tD A21 IP65 T80 °C

IECEX KEM 08.0004

Operating temperature range: -40 °C...+40°C

Switch off before removing cover



ROLEC Ge häuse-Systeme GmbH 
Kreuzbreite 2, D-31737 Rinteln 

Ex e ia IIC T6
Ex tD A21 IP65 T80 °C

IECEX KEM 08.0004

Operating temperature range: -40 °C...+40°C

Switch off before removing cover



ROLEC Ge häuse-Systeme GmbH 
Kreuzbreite 2, D-31737 Rinteln 

Ex ia IIC T6
Ex tD A21 IP65 T80 °C

IECEX KEM 08.0004

Operating temperature range: -40 °C...+40°C

Switch off supply before removing cover



ROLEC Ge häuse-Systeme GmbH 
Kreuzbreite 2, D-31737 Rinteln 

Zone 0 Ex ia IIC T6

IECEX KEM 08.0004

Operating temperature range: -40 °C...+40°C

Switch off supply before removing cover



ROLEC Ge häuse-Systeme GmbH 
Kreuzbreite 2, D-31737 Rinteln 

Enclosure Series polyTOP

Ex e II
Ex tD A21 IP65

IECEX KEM 08.0003 U

Ambient temperature range: -40°C...+100°C

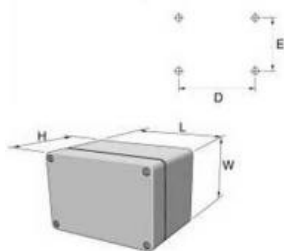
ROLEC Ge häuse-Systeme GmbH 
Kreuzbreite 2, D-31737 Rinteln 

Conductor and terminal insertion

PT-EX 080

Dimension / mm

L	82
W	82
H	60
D	67
E	67



Max. Kabelverschraubungen Max. Cable glands		L/L	W/W
W	L		
	L		
	PG 7	2	
M16	PG9	2	
	PG11	1	
M20	PG13,5	1	
	PG16	1	
M25	PG21		
M32	PG29		
M40	PG36		
M50	PG42		
M63	PG48		
Nutzbare Tragschienen- länge 50mm	Usable length of mounting rail 50mm		

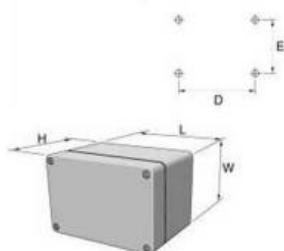
Strom in A Power in A	Max. Leiteranzahl Max. Number of conductors									
	Querschnitt in mm ² Cross section in sqmm									
	1,5	2,5	4	6	10	16	25	35	50	70
10	28									
16	9	19	74							
20	4	11	21							
25			12	23						
35			3	9	22					
50					7	19				
63					2	8				
80						3				
100										
125										
160										
*	5	5	-	-	-	-	-	-	-	-

* Max. montierbare Klemmenanzahl im Gehäuse
* Max. number of terminals in the enclosure possible

PT-EX 082

Dimension / mm

L	122
W	82
H	60
D	107
E	67



Max. Kabelverschraubungen Max. Cable glands		L/L	W/W
W	L		
	L		
	PG 7	4	
M16	PG9	3	
	PG11	3	
M20	PG13,5	3	
	PG16	2	
M25	PG21	1	
M32	PG29		
M40	PG36		
M50	PG42		
M63	PG48		
Nutzbare Tragschienen- länge 90mm	Usable length of mounting rail 90mm		

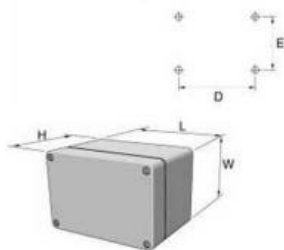
Strom in A Power in A	Max. Leiteranzahl Max. Number of conductors									
	Querschnitt in mm ² Cross section in sqmm									
	1,5	2,5	4	6	10	16	25	35	50	70
10	30									
16	10	20	78							
20	4	11	22							
25			13	24						
35			3	9	24					
50					7	24				
63					2	9	33			
80					3	10	37			
100						4	9			
125							3			
160										
*	11	11	8	-	-	-	-	-	-	-

* Max. montierbare Klemmenanzahl im Gehäuse
* Max. number of terminals in the enclosure possible

PT-EX 084

Dimension / mm

L	162
W	82
H	60
D	147
E	67



Max. Kabelverschraubungen Max. Cable glands		L/L	W/W
W	L		
	L		
	PG 7	10	
M16	PG9	6	
	PG11	5	
M20	PG13,5	4	
	PG16	4	
M25	PG21	3	
M32	PG29		
M40	PG36		
M50	PG42		
M63	PG48		
Nutzbare Tragschienen- länge 130mm	Usable length of mounting rail 130mm		

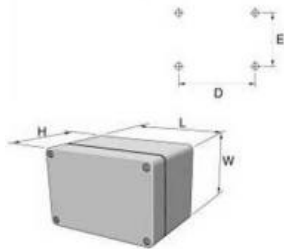
Strom in A Power in A	Max. Leiteranzahl Max. Number of conductors									
	Querschnitt in mm ² Cross section in sqmm									
	1,5	2,5	4	6	10	16	25	35	50	70
10	31									
16	10	20	80							
20	4	12	23							
25			13	25						
35			3	9	24					
50					8	20				
63					2	9	33			
80					3	10	37			
100						4	9			
125							4			
160										
*	18	18	16	-	-	-	-	-	-	-

* Max. montierbare Klemmenanzahl im Gehäuse
* Max. number of terminals in the enclosure possible

PT-EX 100

Dimension / mm

L 102
W 102
H 81
D 87
E 87



L		L/L	W/W
W	W		
L	W	PG 7	4 2
M16	PG9	3	2
	PG11	3	2
M20	PG13,5	3	1
	PG16	2	1
M25	PG21	1	
M32	PG29	1	
M40	PG36		
M50	PG42		
M63	PG48		
Nutzbare Tragschienenlänge 70mm	Usable length of mounting rail 70mm		

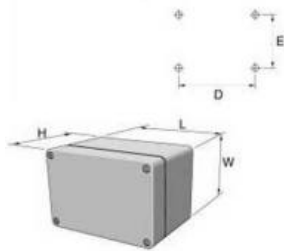
Strom in A Power in A	Max. Leiteranzahl Max. Number of conductors										
	Querschnitt in mm ² Cross section in sqmm										
	1,5	2,5	4	6	10	16	25	35	50	70	95
10	37										
16	12	24	96								
20	5	14	28								
25			15	30							
35			4	12	29						
50					9	24					
63					3	11	40				
80						4	12	45			
100							5	12			
125									4		
160											
*	8	8	6	-	-	-	-	-	-	-	-

* Max. montierbare Klemmenanzahl im Gehäuse
* Max. number of terminals in the enclosure possible

PT-EX 102

Dimension / mm

L 152
W 102
H 81
D 137
E 87



L		L/L	W/W
W	W		
L	W	PG 7	8 2
M16	PG9	6	2
	PG11	4	2
M20	PG13,5	4	1
	PG16	3	1
M25	PG21	2	
M32	PG29	1	
M40	PG36		
M50	PG42		
M63	PG48		
Nutzbare Tragschienenlänge 120mm	Usable length of mounting rail 120mm		

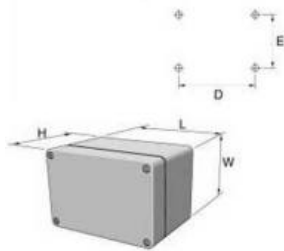
Strom in A Power in A	Max. Leiteranzahl Max. Number of conductors										
	Querschnitt in mm ² Cross section in sqmm										
	1,5	2,5	4	6	10	16	25	35	50	70	95
10	39										
16	13	26	101								
20	5	15	29								
25			16	32							
35			4	12	31						
50					10	26					
63					3	12	42				
80						4	13	47			
100							5	12			
125									5		
160											
*	16	16	14	8	-	-	-	-	-	-	-

* Max. montierbare Klemmenanzahl im Gehäuse
* Max. number of terminals in the enclosure possible

PT-EX 104

Dimension / mm

L 202
W 102
H 81
D 187
E 87



L		L/L	W/W
W	W		
L	W	PG 7	10 2
M16	PG9	8	2
	PG11	6	2
M20	PG13,5	5	1
	PG16	4	1
M25	PG21	3	
M32	PG29	2	
M40	PG36		
M50	PG42		
M63	PG48		
Nutzbare Tragschienenlänge 170mm	Usable length of mounting rail 170mm		

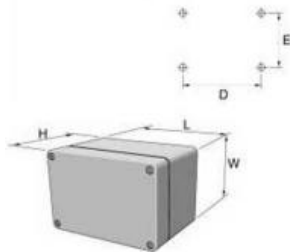
Strom in A Power in A	Max. Leiteranzahl Max. Number of conductors										
	Querschnitt in mm ² Cross section in sqmm										
	1,5	2,5	4	6	10	16	25	35	50	70	95
10	40										
16	13	26	103								
20	5	15	30								
25			17	32							
35			5	12	31						
50					10	26					
63					3	12	43				
80						4	13	48			
100							5	12			
125									5		
160											
*	24	24	22	8	-	-	-	-	-	-	-

* Max. montierbare Klemmenanzahl im Gehäuse
* Max. number of terminals in the enclosure possible

PT-EX 120

Dimension / mm

L 124
W 124
H 100
D 102
E 102



Max. Kabelverschraubungen Max. Cable glands		L/L	W/W
W	L		
	W		
	PG 7	12	9
M16	PG9	8	6
	PG11	8	5
M20	PG13,5	5	4
	PG16	4	4
M25	PG21	3	
M32	PG29	1	
M40	PG36		
M50	PG42		
M63	PG48		
Nutzbare Tragschienenlänge 80mm	Usable length of mounting rail 80mm		

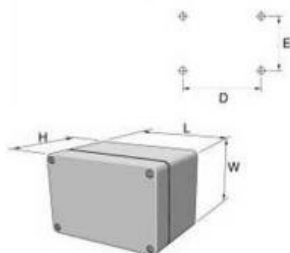
Strom in A Power in A	Max. Leiteranzahl Max. Number of conductors										
	Querschnitt in mm ² Cross section in sqmm										
	1,5	2,5	4	6	10	16	25	35	50	70	95
10	46										
16	15	30	119								
20	6	18	34								
25			19	37							
35			5	14	36						
50				2	12	30					
63					4	14	50				
80						5	15	56			
100							6	14			
125									6		
160											
*	11	11	8	4	-	-	-	-			

* Max. montierbare Klemmenanzahl im Gehäuse
* Max. number of terminals in the enclosure possible

PT-EX 122

Dimension / mm

L 184
W 124
H 100
D 162
E 102



Max. Kabelverschraubungen Max. Cable glands		L/L	W/W
W	L		
	W		
	PG 7	12	9
M16	PG9	11	6
	PG11	11	5
M20	PG13,5	8	4
	PG16	5	4
M25	PG21	3	
M32	PG29	3	
M40	PG36		
M50	PG42		
M63	PG48		
Nutzbare Tragschienenlänge 140mm	Usable length of mounting rail 140mm		

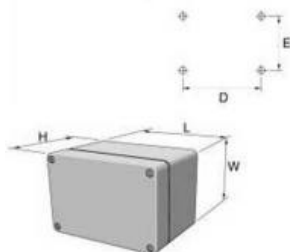
Strom in A Power in A	Max. Leiteranzahl Max. Number of conductors										
	Querschnitt in mm ² Cross section in sqmm										
	1,5	2,5	4	6	10	16	25	35	50	70	95
10	48										
16	16	32	125								
20	7	19	36								
25			20	39							
35			6	15	38						
50				2	12	32					
63					4	14	52				
80						5	16	59			
100							7	15			
125									6		
160											
*	21	21	20	13	-	-	-	-			

* Max. montierbare Klemmenanzahl im Gehäuse
* Max. number of terminals in the enclosure possible

PT-EX 124

Dimension / mm

L 244
W 124
H 100
D 222
E 102



Max. Kabelverschraubungen Max. Cable glands		L/L	W/W
W	L		
	W		
	PG 7	20	9
M16	PG9	17	6
	PG11	14	5
M20	PG13,5	11	4
	PG16	7	4
M25	PG21	4	
M32	PG29	3	
M40	PG36		
M50	PG42		
M63	PG48		
Nutzbare Tragschienenlänge 200mm	Usable length of mounting rail 200mm		

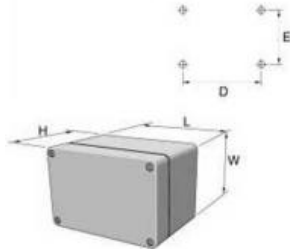
Strom in A Power in A	Max. Leiteranzahl Max. Number of conductors										
	Querschnitt in mm ² Cross section in sqmm										
	1,5	2,5	4	6	10	16	25	35	50	70	95
10	49										
16	17	32	127								
20	5	19	37								
25			21	40							
35			6	15	39						
50				2	12	32					
63					4	15	53				
80						5	16	60			
100							7	15			
125									6		
160											
*	31	31	29	21	-	-	-	-			

* Max. montierbare Klemmenanzahl im Gehäuse
* Max. number of terminals in the enclosure possible

PT-EX 160

Dimension / mm

L 164
W 164
H 100
D 142
E 142



Max. Kabelverschraubungen Max. Cable glands		L/L	W/W
W	L		
	W		
	PG 7	15	9
M16	PG9	14	6
	PG11	11	5
M20	PG13,5	8	4
	PG16	6	4
M25	PG21	2	
M32	PG29	2	
M40	PG36	1	
M50	PG42		
M63	PG48		
Nutzbare Tragschienenlänge 120mm	Usable length of mounting rail 120mm		

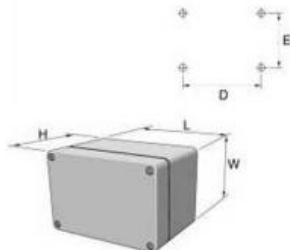
Strom in A Power in A	Max. Leiteranzahl Max. Number of conductors										
	Querschnitt in mm ² Cross section in sqmm										
	1,5	2,5	4	6	10	16	25	35	50	70	95
10	52										
16	17	34	134								
20	7	20	38								
25			22	42							
35			6	16	41						
50				2	13	34					
63					4	15	56				
80						6	17	63			
100							7	16			
125									6		
160											
*	18	18	16	11	9	5	-	-			

* Max. montierbare Klemmenanzahl im Gehäuse
* Max. number of terminals in the enclosure possible

PT-EX 162

Dimension / mm

L 244
W 164
H 100
D 222
E 142



Max. Kabelverschraubungen Max. Cable glands		L/L	W/W
W	L		
	W		
	PG 7	24	9
M16	PG9	21	6
	PG11	15	5
M20	PG13,5	12	4
	PG16	10	4
M25	PG21	4	
M32	PG29	3	
M40	PG36	3	
M50	PG42		
M63	PG48		
Nutzbare Tragschienenlänge 200mm	Usable length of mounting rail 200mm		

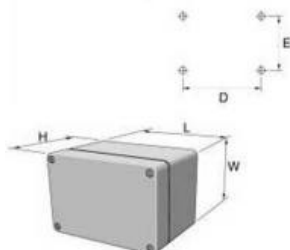
Strom in A Power in A	Max. Leiteranzahl Max. Number of conductors										
	Querschnitt in mm ² Cross section in sqmm										
	1,5	2,5	4	6	10	16	25	35	50	70	95
10	55										
16	19	36	143								
20	7	21	41								
25			23	45							
35			6	17	44						
50				2	14	36					
63					4	17	60				
80						6	18	67			
100							8	17			
125									7		
160											
*	31	31	29	21	18	13	-	-			

* Max. montierbare Klemmenanzahl im Gehäuse
* Max. number of terminals in the enclosure possible

PT-EX 164

Dimension / mm

L 324
W 164
H 100
D 302
E 142



Max. Kabelverschraubungen Max. Cable glands		L/L	W/W
W	L		
	W		
	PG 7	36	9
M16	PG9	26	6
	PG11	23	5
M20	PG13,5	17	4
	PG16	14	4
M25	PG21	6	
M32	PG29	4	
M40	PG36	3	
M50	PG42	3	
M63	PG48		
Nutzbare Tragschienenlänge 280mm	Usable length of mounting rail 280mm		

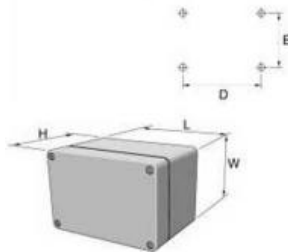
Strom in A Power in A	Max. Leiteranzahl Max. Number of conductors										
	Querschnitt in mm ² Cross section in sqmm										
	1,5	2,5	4	6	10	16	25	35	50	70	95
10	56										
16	19	37	146								
20	8	22	42								
25			24	46							
35			7	18	45						
50				2	14	37					
63					5	17	61				
80						6	19	68			
100							8	19			
125									7		
160											
*	44	44	42	30	28	20	-	-			

* Max. montierbare Klemmenanzahl im Gehäuse
* Max. number of terminals in the enclosure possible

PT-EX 400

Dimension / mm

L	404
W	404
H	160
D	382
E	382



Max. Kabelverschraubungen Max. Cable glands		L/L	W/W
W	L		
	PG 7	52	52
M16	PG9	33	33
	PG11	30	30
M20	PG13,5	27	27
	PG16	26	26
M25	PG21	20	20
M32	PG29	10	10
M40	PG36	9	9
M50	PG42	5	5
M63	PG48	3	3
Nutzbare Tragschienenlänge 360mm	Usable length of mounting rail 360mm		

Max. Leiteranzahl

Max. Number of conductors

Strom in A Power in A	Querschnitt in mm ² Cross section in sqmm										
	1,5	2,5	4	6	10	16	25	35	50	70	95
10	102										
16	35	68	265								
20	14	40	77								
25			43	84							
35			12	33	21						
50				4	26	67					
63					9	31	111				
80						12	35	124			
100							15	33			
125								13			
160											
*	427	427	305	135	124	72	60	24			

* Max. montierbare Klemmenanzahl im Gehäuse

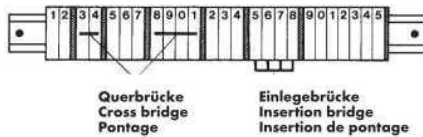
* Max. number of terminals in the enclosure possible

Brücken

Wenn Querbrücken eingesetzt werden, ist darauf zu achten, daß sich die Kriechstrecken und Sicherheitsabstände nicht verringern. Dies bedeutet, daß zwischen benachbarten Querbrücken eine Trennwand einzusetzen ist. Jede Klemmstelle darf nur mit einem Leiter belegt werden.

Bridges

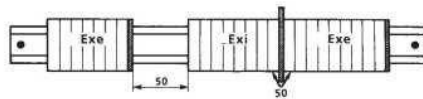
When using cross-bridges leakage and safety distances must not be decreased. A wall has to be inserted between two cross-bridges. Each contact point may be used with one conductor.



Mischbestückung Ex e / Ex i Anschlußklemmen

Es ist möglich Ex e und Ex i Klemmen zusammen in einem Gehäuse zu verwenden, wenn:

- ein Mindestabstand von 50 mm zwischen „e“ und „i“ Klemmen,
- der Luftweg zwischen eigensicheren Stromkreis und metallischen Teilen mindestens 3 mm ist,
- der eigensichere Stromkreis gekennzeichnet ist, wenn farblich, dann hellblau.



Mixed insertion Ex e / Ex i connection terminals

It is possible to use Ex e and Ex i terminals together in one enclosure if:

- a minimum distance of 50 mm is kept between the „e“ and „i“ terminals,
- the air-route between the intrinsic circuit and metal parts is a minimum of 3 mm,
- the intrinsic circuit can be recognised by the blue colour.

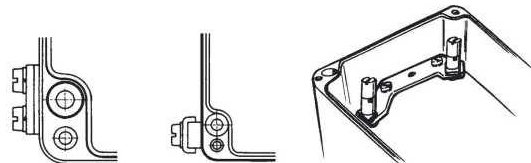
Schutzleiteranschluß

In explosionsgefährdeten Bereich ist, gemäß den Vorschriften bei metallischen Gehäusen, eine Außen-erde vorgeschrieben.

ROLEC Aluminiumgehäuse haben standardmäßig eine Außen-erde. Alle ROLEC Gehäuse können mit Schutzleiter-Sammelschienen oder Schutzleitererhaltungswinkel ausgerüstet werden.

Earth conductor connection

An external earth is prescribed for metal enclosures in explosive atmospheres, according to regulations. The ROLEC Aluminium enclosures have an external earth as standard. All ROLEC enclosures can be equipped with earth conductor bus bars or earth conductor holding brackets.



Certification body

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