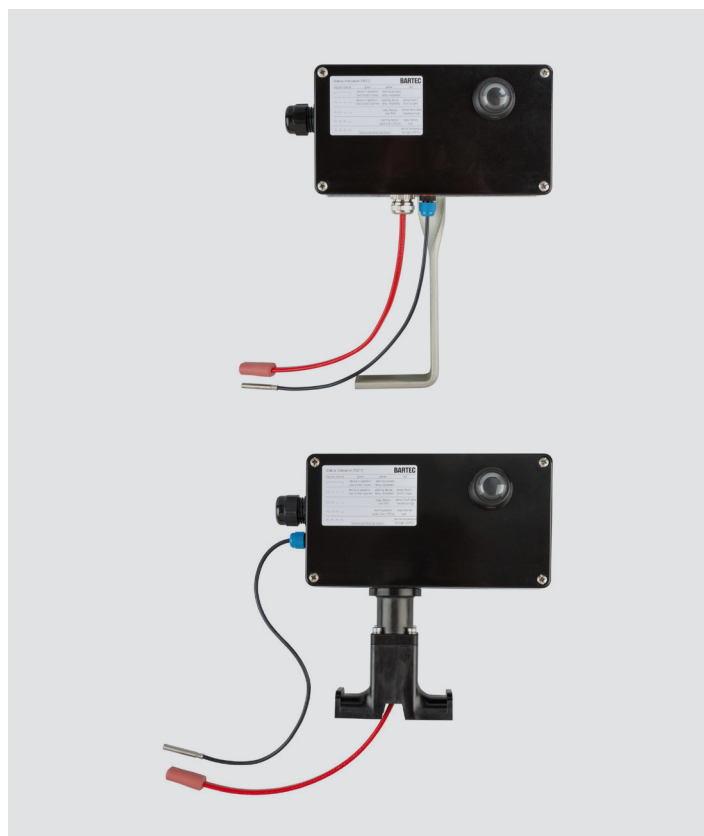# PBTC-200-E/PBTC-300-E Power junction box

- Junction box with built-in electronic thermostat module for BARTEC parallel heating pipes PSB, MSB, HSB+, HTSB or BPL (model-dependent)
- model-dependent for pipe or pipe/tank wall mounting
- Indication of operating status by LED status indicator
- Resistance Temperature Device Pt100 intrinsically safe

PBTC-200 and PBTC-300 are electronic thermostat modules in an Ex e certified polyester junction box. The thermostat modules have been developed as on-off temperature controllers for trace heating applications. The adjustable temperature setpoint allows flexible applications in the range of frost protection and temperature maintenance of liquid or gaseous media on pipes or tanks. The integrated LED status display indicates the current operating status of the unit or system by means of colour and flashing codes; the temperature unit can be switched between °C and °F. Approvals for the direct connection of BARTEC self-limiting heating cables are available.

PBTC-200 for pipe mounting

Junction box with thermostat module for pipe mounting by means of polycarbonate mounting stand. The heating cable is fed through the mounting stand. No additional insulating bushing is required to feed the heating cable through the pipe insulation. Connection kit for connecting the PSB, MSB, HSB+ and HTSB heating cables is included. No further connection kit (CAK) necessary.

PBTC-300 for pipe and tank wall mounting

Junction box with thermostat module for pipe or tank wall mounting by means of mounting brackets. The heating cable is led directly out of the junction box. If necessary, an additional insulating bushing is required to lead the heating cable through the pipe insulation. Connection kit for connecting the PSB and

MSB heating cables is included. Additional connection kit (CAK) required for connecting the heating cables HSB+ and HTSB.

PBTC-310 for pipe and tank wall mounting (BPL)

Junction box with thermostat module for pipe or tank wall mounting by means of a mounting bracket. The heating cable is led directly out of the junction box. Intended for mounting with heating cable BPL, the connection kit is included.

Explosion protection Thermostat

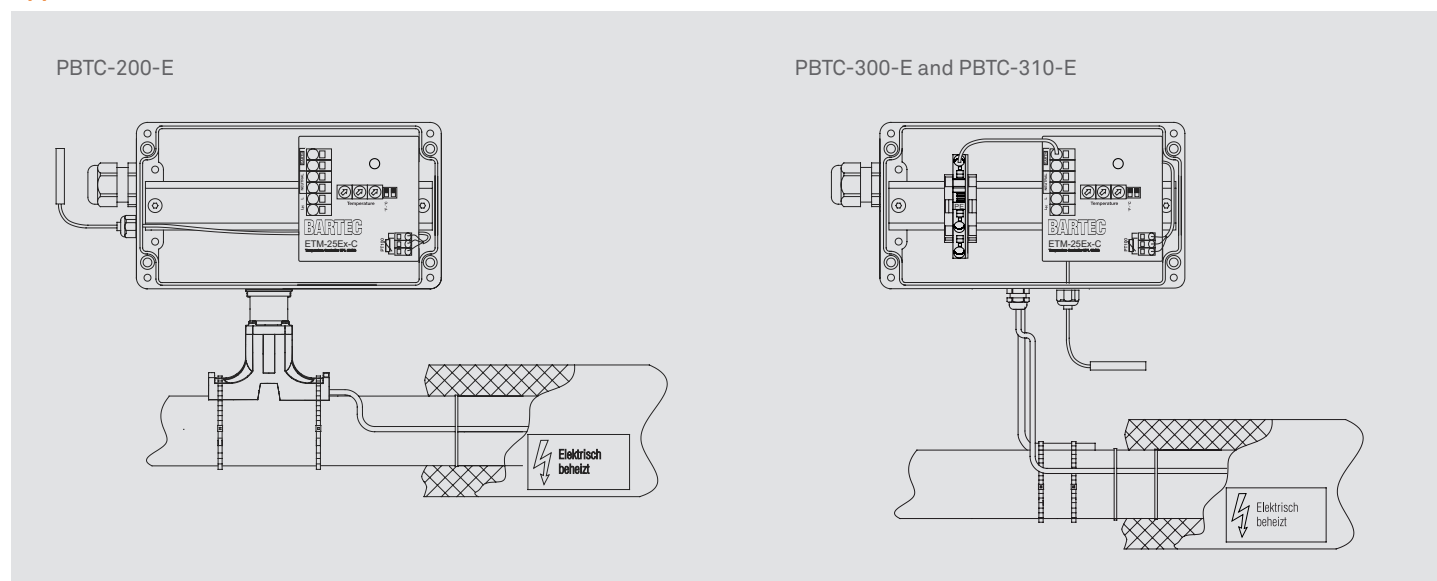|	
Marking	Ex eb mb [ib] [60079-30-1] IIC T4, T5 Gb Ex tb [ib] [60079-30-1] IIIC T135°C, T95°C, Db
Certification	IBExU 12 ATEX 1099 X IECEx IBE 12.0031 X

Other approvals see bartec.com

Explosion protection Heating System

Marking PSB	II 2G Ex e IIC T5,T6 Gb II 2D Ex tb IIIC T85°C T100°C Db
Marking MSB	II 2G Ex e IIC T4, T3 Gb II 2D Ex tb IIIC T130°C, T200°C Db
Marking HSB+	II 2G Ex e IIC T3 Gb II 2D Ex tb IIIC T200°C Db
Marking HTSB	II 2G Ex e IIC T2, T3 Gb II 2D Ex tb IIIC T200°C ,T300°C Db
Certification PSB	KEMA 08 ATEX 0111 X IECEx KEM 09.0084X
Certification MSB	KEMA 08 ATEX 0110 X IECEx KEM 09.0083X
Certification HSB+	CML 19 ATEX 3033 IECEx CML 19.0008
Certification HTSB	SIRA 16 ATEX 3099 IECEx SIR 16.0035

Other approvals see bartec.com

Technical data

Power and load terminal	6mm² / spring type / Ex eb
Rated voltage U supply	80 - 277 VAC
U_m	305 VAC
Rated power without load	4.5 W
For use with trace heating (load)	for BARTEC trace heaters up to CB rating C32A, See: Recommended maximum heating circuit length
Maximum breaker size	32 A
Protection class	IP 66
Min. ambient temperature	-40 °C
Max. ambient temperature	depends on the type of heating cable
Storage temperature	-55 °C to +65 °C
Sensor	Pt100 class B
Sensor cable	Silicone cable, length 1500 mm, diameter 6mm
Sensor service temperature	-50 °C to +200 °C
Hysteresis	+5K

Application

PBTC-200-E

PBTC-300-E and PBTC-310-E

Kit Content / Ordering information

	PBTC-200-E	PBTC-300-E	PBTC-310-E
Kit contents	1 Junction Box with terminals (1) 1 thermostat ETM-25Ex-C 1 stand assembly 1 cold applied boot and end seal 1 green/yellow tube 2 cable grommets 1 Pt100 M	1 Junction Box with terminals (1) 1 thermostat ETM-25Ex-C 1 plate and bracket assembly 1 cold applied boot and end seal 1 green/yellow tube 1 cable gland with grommets 1 Pt100 M	1 junction box with terminals (1) 1 thermostat ETM-25Ex-C 1 stand assembly 1 plate and bracket assembly 1 cold applied boot and RTV 1 cable earth lug 1 cable gland with grommet 1 Pt100 M
Compatible cable series	PSB, MSB, HSB+, HTSB	PSB, MSB, HSB+, HTSB	BPL
Box Size	120 mm x 220 mm x 90 mm	120 mm x 220 mm x 90 mm	120 mm x 220 mm x 90 mm
Box support	Integrated PPS mounting stand	Mounting plate and bracket, galv. steel	Mounting plate and bracket, galv. steel
Stand height	120 mm	300 mm	300 mm
Power entry	M25 cable gland	M25 cable gland	M25 cable gland
Heating cable entry	2 x grommet	1 x heating cable gland	1 x heating cable gland
Terminals	Spring Type, Ex e, 1 supply phase, 1 supply neutral, 1 heater phase, 1 heater neutral, 2 ground	Spring Type, Ex e, 1 supply phase, 1 supply neutral, 1 heater phase, 1 heater neutral, 4 ground	Spring Type, Ex e, 1 supply phase, 1 supply neutral, 1 heater phase, 1 heater neutral, 4 ground
Terminal size	6mm²	6mm²	6mm²
Order no.	27-54C2-4412E210	27-54C2-4411E210	27-54C3-4412E210

(1) junction Box in stainlessteel or aluminium on request

Recommended maximum heating circuit length

For circuit breaker ratings up to 20A or for circuit breaker ratings above 20A and maximum design ambient temperatures up to 40°C.
The maximum circuit length indicated in the self-regulating heating cable datasheets are applicable.
When using a breaker rated 32A or higher design ambient temperatures than +40°C, refer to the tables below.

Family	PSB				MSB					HSB+				HTSB					
Order No.	3PSB2	5PSB2	8PSB2	10PSB2	3MSB2	5MSB2	10MSB2	15MSB2	20MSB2	5HSB+2	10HSB+2	15HSB+2	20HSB+2	5HTSB2-CT	10HTSB2-CT	15HTSB2-CT	20HTSB2-CT	25HTSB2-CT	30HTSB2-CT
Type	07-5853-710*	07-5853-715*	07-5853-725*	07-5853-733*	07-5854-710F	07-5854-715F	07-5854-730F	07-5854-745F	07-5854-760F	07-584B-715F	07-584B-730F	07-584B-745F	07-584B-760F	07-584C-715F	07-584C-730F	07-584C-745F	07-584C-760F	07-584C-775F	07-584C-790F
°C W/m	10	15	25	33	10	15	30	45	60	15	30	45	60	15	30	45	60	75	90
Max. design ambient temperature +45°C																			
+ 10	205	165	128	97	231	188	118	82	64	141	97	74	60	(2)	(2)	(2)	(2)	49	44
0	205	165	128	97	231	188	118	82	64	141	97	74	60	(2)	(2)	(2)	58	49	44
- 20	205	165	128	88	231	188	118	82	64	141	97	74	60	(2)	(2)	72	58	49	44
Max. design ambient temperature +50°C																			
+ 10	205	165	128	97	231	173	104	72	56	125	86	65	53	(2)	(2)	(2)	(2)	43	39
0	205	165	128	97	231	173	104	72	56	125	86	65	53	(2)	(2)	(2)	51	43	39
- 20	205	165	128	88	231	173	104	72	56	125	86	65	53	(2)	(2)	64	51	43	39
Max. design ambient temperature +55°C																			
+ 10	205	165	128	97	223	138	83	58	45	100	69	52	42	(2)	(2)	(2)	(2)	34	31
0	205	165	128	97	223	138	83	58	45	100	69	52	42	(2)	(2)	(2)	41	34	31
- 20	205	165	128	88	223	138	83	58	45	100	69	52	42	(2)	(2)	51	41	34	31

(2) see datasheet respective Heating cable