

DATA SHEET

BDTG18 – GAS FILLED THERMOMETER

Badotherm thermometer model BDTG18 is available in 100/160 mm diameter. The BDTG18 is available with various connections, such as: fixed stem, every angle, capillary, or skin. These gas filled thermometers are suitable for corrosive media and environments in chemical process, petroleum, and food industries.



DESIGN INFORMATION

DESIGN NORM	INGRESS PROTECTION
EN 13 190	IP 65 per EN 60529 / IEC 529

STANDARD MODEL MATERIAL SPECIFICATIONS

STEM	SOCKET	CASE	BEZEL
AISI316(L)	AISI316(L)	AISI304, bayonet	AISI304, bayonet
WINDOW	POINTER	DIAL	
glass	aluminium, black	aluminium, white with black markings	

TECHNICAL SPECIFICATIONS

	TG	TG every angle	TG distance	TG skin
Diameter	100/160mm	100/160mm	100/160mm	100/160mm
Connection	1/2" BSP/NPT adjustable	1/2" BSP/NPT adjustable	1/2" BSP/NPT adjustable	-
Stem diameter	12 mm	12 mm	12 mm	pipe surface
Minimum temperature	-80°C	-80°C	-80°C	-80°C
Maximum temperature	650°C	650°C	650°C	650°C
Accuracy	class 1	class 1	class 1	class 1
Mounting variation	A / D	every angle	C / E / F	A / D
Window gasket	NBR	NBR	NBR	NBR
Fill plug*	NBR	NBR	NBR	NBR
Pointer	adjustable slotted	adjustable slotted	adjustable slotted	adjustable slotted

* HNBR for filled executions

SPECIAL EXECUTIONS

BDTG18-S	casing and bezel in AISI316(L)
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OPTIONS

WINDOW	laminated safety glass
PROCESS CONNECTION	other
STEM DIAMETER	1/4", 3/8", 1/2", 6 mm, 8 mm, 10 mm
POINTER	micro adjustable (100mm only), red pointer on dial, or drag pointer
FILLING	BPF01 (glycerine), BPF02 (silicone), BPF04 (foaming service), BPF05 (ECTFE Inert for oxygen service)
CALIBRATION CERTIFICATES	5 points (rising and falling)
CONTACT	inductive / magnetic / electric
ATEX	EX II 2 GD c (ATEX 94/9/EC)
ACCESSORIES	thermowells in various executions and materials

DATA SHEET

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TEMPERATURE DETAILS

WORKING TEMPERATURE

	limitations
steady	measuring range per DIN 13 190
short time (<1h)	1.2 x measuring range up to 500°C
	1.1 x measuring range beyond 500°C

WORKING PRESSURE

maximum 25 bar at 20°C

FILLING FLUID

			ambient
-	without		-40°C to 90°C
BPF01	glycerine	1000 Cst	-20°C to 65°C
BPF02	silicone	1000 Cst	-40°C to 65°C
BPF03	for contacts	80 Cst	-40°C to 60°C
BPF04	foaming service	50 Cst	-40°C to 60°C
BPF05	oxygen service	30 Cst	-40°C to 60°C

WINDOW

	ambient
glass	<400°C
safety glass	<200°C

GASKETS

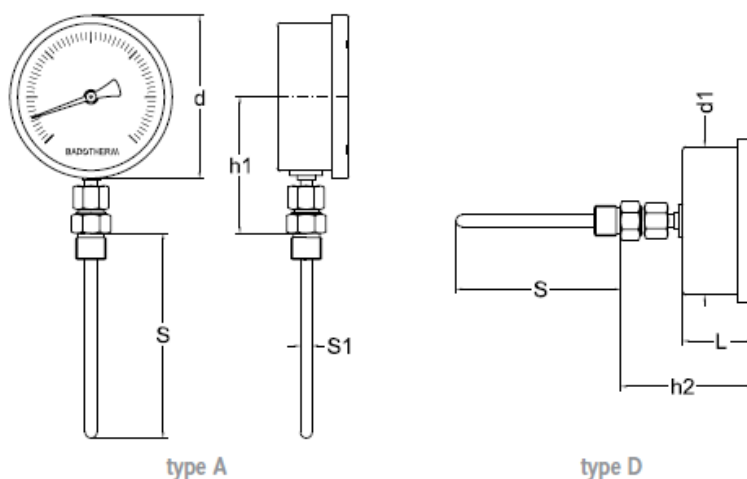
	ambient
window NBR	<100°C
fill plug NBR	<100°C
fill plug HNBR	<150°C

MODEL AND MOUNTING VARIATIONS

- **BDTG18** type A bottom connection, direct mounting, fixed stem
type D back connection, direct mounting, fixed stem
- **BDTGE18** type every angle connection, direct mounting, fixed stem
- **BDTG18 DISTANCE** type C bottom connection, surface mounting, capillary
type E back connection, panel mounting, capillary
type F bottom connection, panel mounting, capillary
- **BDTG18 SKIN** type A bottom connection, direct mounting, skin
type D back connection, direct mounting, skin
type every angle connection, direct mounting, skin

DRAWINGS AND DIMENSION BDTG18

DRAWINGS



DIMENSIONS

ns	d	d1	L	h1	h2	S	S1
100	110	100	49	100	94	to specify	12
160	160	149	50	125	95	to specify	12

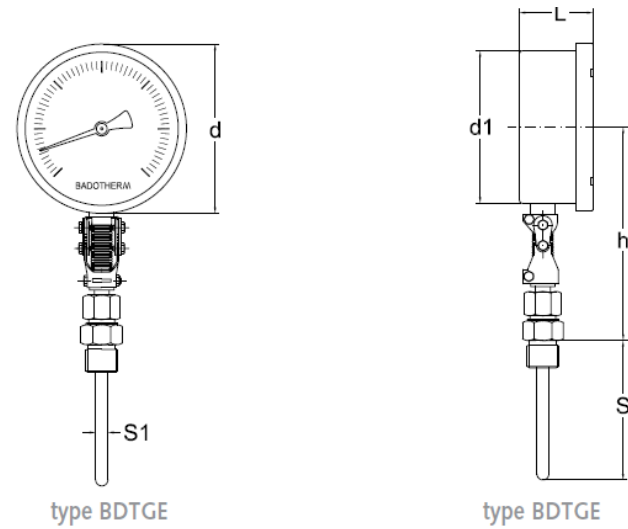
All dimensions in mm

DATA SHEET

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DRAWINGS AND DIMENSION BDTGE18

DRAWINGS



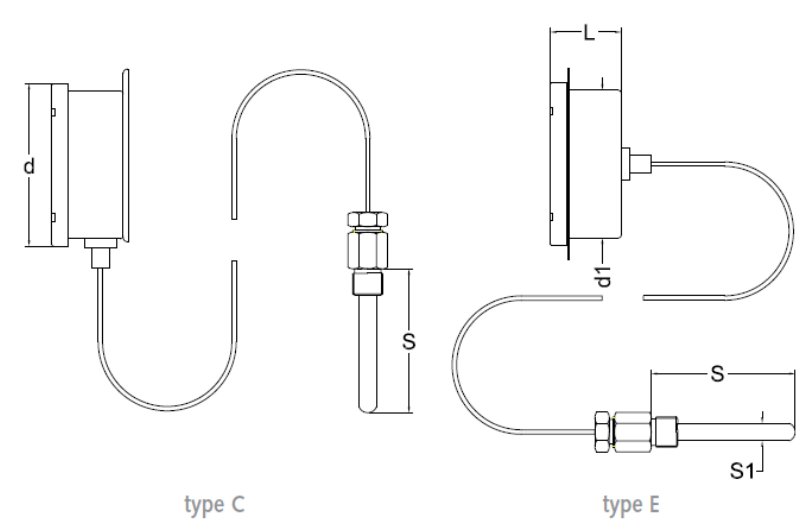
DIMENSIONS

ns	d	d1	L	h1	S	S1
100	110	100	49	151	to specify	12
160	160	149	50	176	to specify	12

All dimensions in mm

DRAWINGS AND DIMENSION BDTG18 - DISTANCE

DRAWINGS



DIMENSIONS

ns	d	d1	L	S	S1
100	110	100	49	to specify	12
160	160	149	50	to specify	12

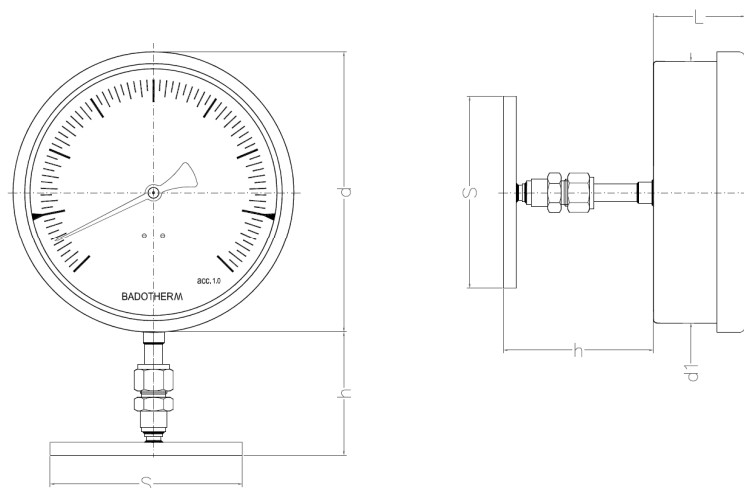
All dimensions in mm

DATA SHEET

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DRAWINGS AND DIMENSION BDTG18 - SKIN

DRAWINGS



DIMENSIONS

ns	d	d1	L	h	S
100	110	100	49	85/100/150	
160	160	149	50	85/100/150	

All dimensions in mm

ACCURACY RANGE AND IMMERSION LENGTHS

Nominal range °C	Limits of error ± °C	Stem 6mm - min. immersion length (mm)	Stem 8mm - min. immersion length (mm)	Stem 12mm - min. immersion length (mm)
-20 40	1	60	55	50
-20 50	1	60	55	50
-20 60	1	60	55	50
-20 80	1	60	55	50
-20 100	2	60	55	50
-20 120	2	80	80	60
-20 140	2	80	80	60
-25 40	1	60	55	50
-30 50	1	60	55	50
-30 70	1	60	55	50
-30 100	2	80	80	60
-40 60	1	60	55	50
-40 120	2	80	80	60
-50 50	1	60	55	50
-50 550	10	140	100	100
0 60	1	60	55	50
0 80	1	60	55	50
0 100	1	60	55	50
0 120	2	60	55	50
0 150	2	80	80	60
0 160	2	80	80	60
0 200	2	80	80	60
0 250	2.5	100	80	80
0 300	5	100	80	80
0 350	5	100	80	80
0 400	5	100	80	80
0 450	5	140	100	100
0 500	5	140	100	100
0 550	10	140	100	100
0 600	10	140	100	100
0 650	10	140	100	100
50 650	10	140	100	100