

**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**

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

**STANDARD MODEL MATERIAL SPECIFICATIONS**

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

**TECHNICAL SPECIFICATIONS**

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

\* HNBR for filled executions

**SPECIAL EXECUTIONS**

<b>BDTG18-S</b>	casing and bezel in AISI316(L)
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**OPTIONS**

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

## DATA SHEET

## BDTG18 – GAS FILLED THERMOMETER

### TEMPERATURE DETAILS

#### WORKING TEMPERATURE

	limitations
<b>steady</b>	measuring range per DIN 13 190
<b>short time (&lt;1h)</b>	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
<b>BPF01</b>	glycerine	1000 Cst	-20°C to 65°C
<b>BPF02</b>	silicone	1000 Cst	-40°C to 65°C
<b>BPF03</b>	for contacts	80 Cst	-40°C to 60°C
<b>BPF04</b>	foaming service	50 Cst	-40°C to 60°C
<b>BPF05</b>	oxygen service	30 Cst	-40°C to 60°C

#### WINDOW

	ambient
<b>glass</b>	<400°C
<b>safety glass</b>	<200°C

#### GASKETS

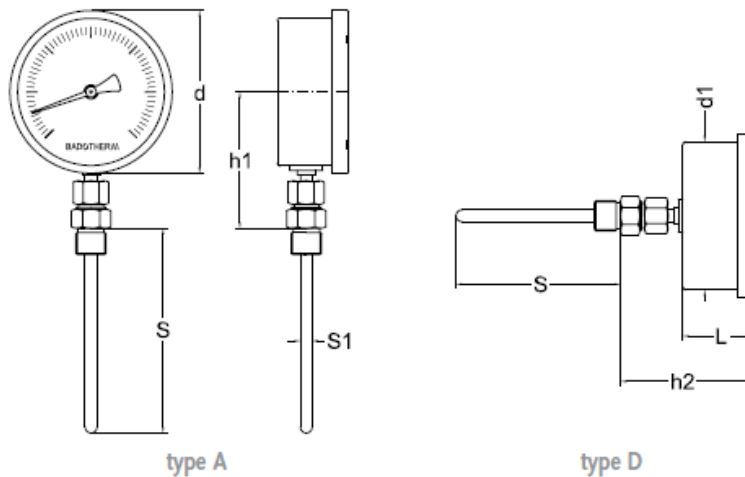
	ambient
<b>window NBR</b>	<100°C
<b>fill plug NBR</b>	<100°C
<b>fill plug HNBR</b>	<150°C

### 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
<b>100</b>	110	100	49	100	94	to specify	12
<b>160</b>	160	149	50	125	95	to specify	12

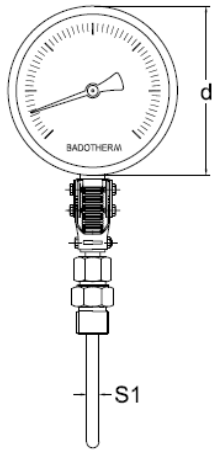
All dimensions in mm

## DATA SHEET

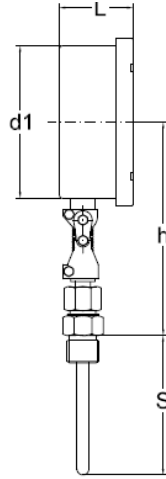
## BDTG18 – GAS FILLED THERMOMETER

### DRAWINGS AND DIMENSION BDTGE18

#### DRAWINGS



type BDTGE



type BDTGE

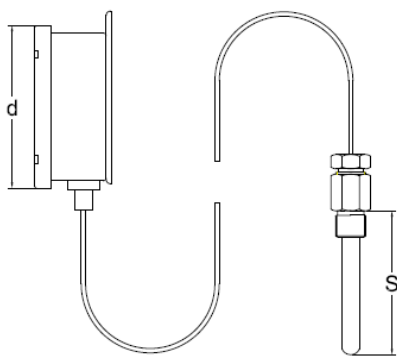
#### DIMENSIONS

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

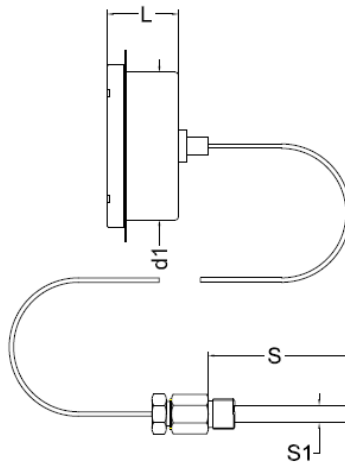
All dimensions in mm

### DRAWINGS AND DIMENSION BDTG18 - DISTANCE

#### DRAWINGS



type C



type E

#### DIMENSIONS

ns	d	d1	L	S	S1
<b>100</b>	110	100	49	to specify	12
<b>160</b>	160	149	50	to specify	12

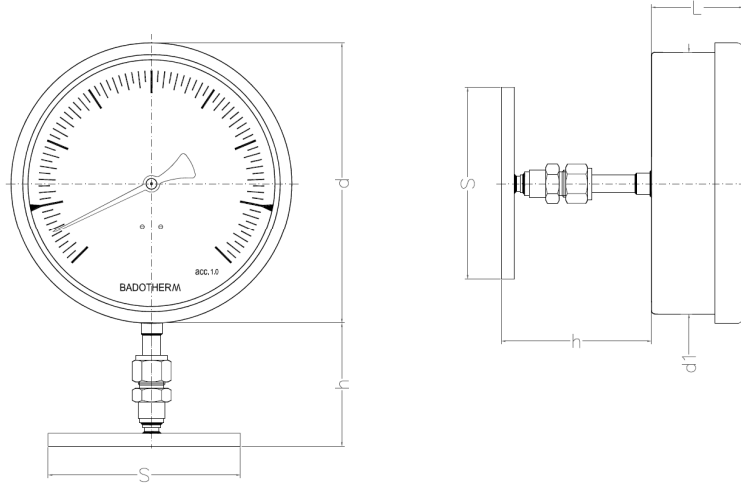
All dimensions in mm

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## BDTG18 – GAS FILLED THERMOMETER

### 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

**Authorised Distributor:**



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