BDT21 – Solid front process pressure gauge 125mm

Product description

Badotherm pressure gauge model BDT21 is the soild front, safety pattern gauges according to the operational safety requirements of AMSE B40.100 and ANSI B 40.1.1. The BDT21 stainless steel safety gauge with ASA+PC casing has a solid front baffle wall and a full blow-out back. This pressure gauge is typically used for applications in the chemical, petro-chemical, and oil & gas industry or anywhere where safety comes first. These gauges are designed to withstand the severest of operating conditions created by the ambient environment and the process medium.



Design standard

ASME B40.100

Dial sizes, ranges & accuracy

The BDT21 is a 125mm case with a standard accuracy of 1.0%. Accuracy class is based on dry gauges. Liquid filling may affect the accuracy.

Dial size	Ranges	Accuracy
125mm	0…1 to 0…1600	1.0%

Mounting variation

Not all gauges are suitable for some mounting variations. For the BDT21 series the mounting variations are below.

- **type A** (10) bottom connection, direct mounting
- **type C** (11) bottom connection, surface mounting (back)

More specifically per dial size:

Dial size	A	C	D	E
125mm	•	•		

Process connection

Dial size	Standard thread	optionally	SW size
125mm	G ½ A or ½" NPT	1/4" , 3/8"	17mm

Other thread standards such as ISO 7-1 R (BSPT), or DIN 13-1 (M20x1.5) can be selected as well.

-> See datasheet "thread information" for specific thread details

Materials of construction

	BDT21	BDT21…M
Case	black ASA+PC	
Bezel		
Connection[1]	AISI 316	Alloy 400
Sensing element[1]	AISI 316	Alloy 400
Movement	Stainless steel	
Pointer	Aluminium	
Dial		
Window gasket	NBR	
Blow out		
Fill plug		
Window	Laminated safety glass	

*1 wetted materials

Pressure limitations

The gauge are built to withstand harsh environments however the ASME B40.100 limits the use of a pressure gauge according below table.

Dial size	Steady	Fluctuating	Short time
125mm	FSV	0.9 x FSV	1.3 x FSV

FSV: full scale value

Temperature limitations

The gauges can withstand ambient and process temperature up to a certain limit. The limitations on temperature are:

	Ambient	Medium
Dry case	-40°C …+60°C	-40°C…+200°C
Filled case	-20°C …+60°C	-20°C…+90°C

The variation of indication caused by the effect of temperature shall not exceed: ± *0.4% / 10K FSV*

Window

Standard BDT21 gauges have a laminated safety glass window.

Pointer

Standard pointer is an adjustable black painted aluminum pointer. Optional a micro adjustable pointer can be selected.

Dial facing

The dial plate is made from aluminum and coated with UV resistant white coating. The black dial markings, scale, numbering, and interval is according the ASME B40.100. Options like colored dial, customer logo, or colored segments are possible as well. Scale interval and numbering is following the ASME B40.100.

Limit stop

To prevent permanent damage after overpressure, or sudden vacuum the gauge is protected by an internal limit stop on the movement that is set just below the minimum scale value and just outside the 130% maximum scale value. These gauges also have a free zero.

Degree of protection

The BDT21 has a standard degree of protection of IP65. The values are determined according the IEC/EN 60529.

Add-on contacts

The BDT21 is a safety pressure gauge and does not allow the use of an add-on contact due to the Makrolon material that is splintering.

Case filling

The gauges can be filled with different kind of fill fluids. The fill fluids available are:

- BPF01 - Glycerine 86%
- BPF02 - Silicon
- BPF03 - Silicon for contacts
- BPF04 - Mineral oil (Foaming service)
- BPF05 - Halocarbon (inert fluid for oxygen service)
- BPF06 - Glycerine 99.5%

Restrictor Screw

All gauges can be executed with a restrictor of 0.8 or 0.3 orifice in AISI316. For the Alloy 400 internal the orifice is 0.8mm.

Special service

The gauges can be supplied cleaned for oxygen use. This means the gauge is assembled and tested in a special area free of oil. The gauges are individually packed in a plastic bag with marking. The symbol used is:



Certification & Declaration

Calibration

Gauges are full range calibrated as a factory standard. Optionally you can select a 5 points calibration certificate, and a 10 points calibration certificate for the 0.6% and 0.5% gauges.

Pressure Equipment Directive - 2014_68_EU

PED approval is given according article 3.3 and is valid for ranges >200 bar. All gauges will be marked accordingly. A declaration of conformity can be supplied.

ATEX 114 - 2014/68/EU

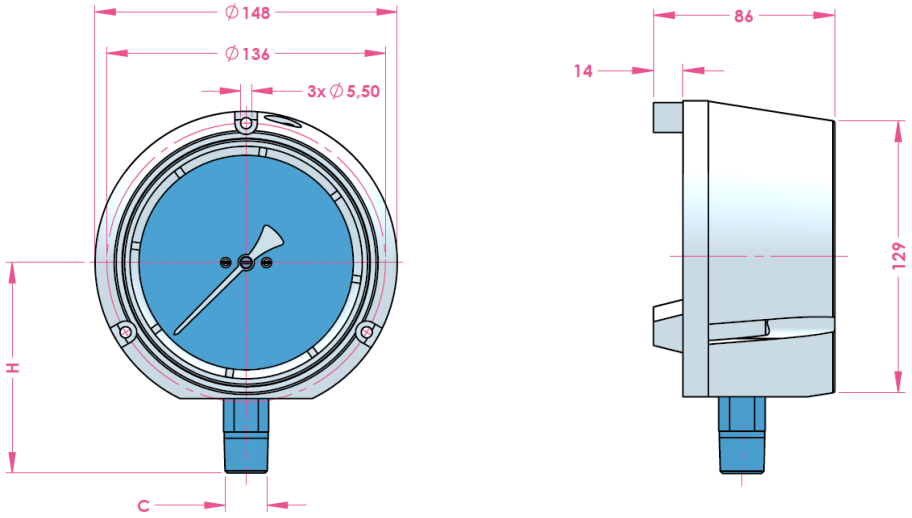
ATEX restrictions are explained in the IOM and in the ATEX background datasheet.

EN 10204 material certificate

A material 3.1 certificate on the wetted parts can be supplied.

Dimensions table

Type A (10), Type C (11)



Dial size	C	H	weight
125	½" NPT	106.0	0.8 kg

BADOTHERM®

Product code 125mm

	Code										
Example code:	**BDT21**	125	A	N12M	S363	S304	F	0	L	B50	5
TYPE											
125 mm◄	125										
MOUNTING											
Bottom connection - direct mounting (10) ◄	A										
Bottom connection - surface mounting (11)	C										
CONNECTION											
G 3/8" A	G38M										
G1/2	G12M										
1/2" NPT◄	N12M										
R 1/2	R12M										
M20 x 1.5	M20M										
TUBE & SOCKET MATERIAL											
AISI 316◄	S363										
Alloy 400	A400										
CASE/BEZEL MATERIAL											
Black ASA +PC◄	BASA										
POINTER											
Adjustable slotted pointer◄	A										
Micro adjustable pointer	M										
LIQUID FILLING											
Dry◄	0										
BPF 01 - Glycerine filled 1,23 (86%)	1										
BPF 06 - Glycerine filled 1,26 (99,5%)	6										
BPF 02 - Silicone filled	2										
BPF 03 – Silicone Contact use	3										
BPF 04 – Mineral oil (Foaming service)	4										
BPF 05 – Halocarbon (Oxygen service)	5										
WINDOW											
Laminated glass (S1) ◄	L										
RANGE											
See page table 1 and table 2	….										
ACCURACY											
0.5 ◄	5										

◄: is the sign for the standard pressure gauge

Tabel 1: Pressure Range code

bar		psi		MPa		kPa		kgf/cm2	
Code	Range	Code	Range	Code	Range	Code	Range	Code	Range
C36	-1…0,6	C37	30Hg/15psi	N50	0…1,6	D36	-100…60	E36	-1…0,6
C38	-1…1,5	C39	30Hg/30psi	N54	0…2,5	D38	-100…150	E38	-1…1,5
C40	-1…3	C41	30Hg/60psi	N57	0…4	D40	-100…300	E40	-1…3
C42	-1…5	C44	30Hg/100psi	N58	0…6	D42	-100…500	E42	-1…5
C45	-1…9	C46	30Hg/150psi	N60	0…10	D45	-100…900	E45	-1…9
C50	-1…15	C50	30Hg/220psi	N62	0…16	D50	-100…1500	E50	-1…15
C54	-1…24	C53	30Hg/300psi	N65	0…25	D54	-100…2400	E54	-1…24
B01	-1…0	P32	0…10	N69	0…40	L01	-100…0	K01	-1…0
B04	-0,6…0	P35	0…15	N71	0…60	L04	-60…0	K04	-0,6…0
B31	0…0,6	P37	0…30	N73	0…100	L31	0…60	K31	0…0,6
B35	0…1	P40	0…60	N76	0…160	L35	0…100	K35	0…1
B36	0…1,6	P43	0…100			L36	0…160	K36	0…1,6
B38	0…2,5	P46	0…160			L38	0…250	K38	0…2,5
B40	0…4	P48	0…200			L40	0…400	K40	0…4
B42	0…6	P51	0…300			L42	0…600	K42	0…6
B45	0…10	P55	0…400			L45	0…1000	K45	0…10
B50	0…16	P56	0…500					K50	0…16
B54	0…25	P57	0…600					K54	0…25
B57	0…40	P58	0…800					K57	0…40
B58	0…60	P59	0…1000					K58	0…60
B60	0…100	P60	0…1500					K60	0…100
B62	0…160	P61	0…2000					K62	0…160
B65	0…250	P64	0…3000					K65	0…250
B69	0…400	P66	0…4000					K69	0…400
B71	0…600	P68	0…5000					K71	0…600
B73	0…1000	P69	0…6000					K73	0…1000
B76	0…1600	P72	0…10000					K76	0…1600
		P73	0…15000						
		P75	0…20000						

Table 2: Secondary scale

Dual scale option	code
PSI red	#PR
PSI black	#PB
PSI blue	#PBL
bar red	#BR
bar black	#BB
bar blue	#BBL

Add the code behind the pressure code
(eg B45#PR for 0…10 bar//psi with red scale)

Table 3: General option code

Option (start options with X_)	code
Restrictor screw 0.8mm	_RS8
Restrictor screw 0.3mm	_RS3
Calibrated at 180°	_C180
Cleaned for Oxygen use	_CFO
NACE ISO 15156 (MR 01 75) (alloy 400)	_N75
ATEX II2GDc-IM2c	_ATEX
3.1 material certificate	_IC31
Calibration certificate 5 points	_CC5
Calibration certificate 10 points	_CC10

Supplier:

NATIONWIDE OIL & GAS

46, Jalan SS 22/21, Damansara Jaya,
47400 Petaling Jaya,
Selangor Darul Ehsan, Malaysia.

Email: nog@nog.com.my
Webste: www.nog.com

PG 7012 – 11th of October 2021

Change log

Date	Change
25-8-2020	Initial release
21-10-2020	New dimension drawing added
21-6-2021	Case material code changed
28-6-2021	Gasket material in table was incorrect and changed
11-10-2021	Selection table pointer: Fixed pointer removed, slotted as standard.

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