Bourdon Tube Pressure Gauge
All Stainless Steel construction
Type 01.18 - DS 40-50

01.18

These instruments are designed for use in food, beverage, pharmaceutical, cryogenic, chemical and petrochemical processing industries, and in conventional and nuclear power plants, to measure gaseous or liquid media which do not have high viscosity or do not cristalize. They are built to resist the most severe operating conditions created by the ambient environment and the process medium. For use on power units, pumps, hydro-cleaning machines, presses, engine compressors, turbines, diesel engines, chemical, petrochemical and refrigerating plants and on machines and equipment where pulsating pressures or mechanical vibrations are apparent, the liquid-filled version is recommended.

Functional and constructive characteristics.

01.18.1 DS40 - Standard

Accuracy: 1,6 as per EN 837-1.
Ambient temperature: -25...+65 °C.
Process temperature: -30...+100 °C.
Working pressure: max 75% of the full scale value.
Over pressure limit: 25% of the full scale value.
Protection: IP 55 as per IEC 529, UNI 8896.
Socket material: AISI 316L st.st.
Elastic element: AISI 316L st.st. by drawn tube without welding.
Welding: AISI 316 T.I.G.
Case: AISI 304 st.st. with venting hole.
Ring: AISI 304 st.st., bayonet lock.
Window: glass.
Movement: stainless steel.
Dial: aluminium, white with black markings.
Special dials: ranges different from standard, or custom artwork, available on request.
Pointer: aluminium, black.
Gasket: VITON E 60 C.

01.18.1 DS50 - Standard

Ambient temperature: -25...+65°C.
Protection: IP 55 as per IEC 529.
Case: AISI 304 st.st.
Ring: AISI 304 st.st., crimped.
Window: plexiglas.
Gaskets: EPDM.
Blow out vent: EPDM.
Other features: as type 01.18.1 DN40.

01.18.2 DS50 - Fillable

Protection: IP 65 as per IEC 529.
Note: version suitable for glycerine filling only.
Other features: as type 01.18.1 DS50 (as type 01.18.3 DS50 when filled).

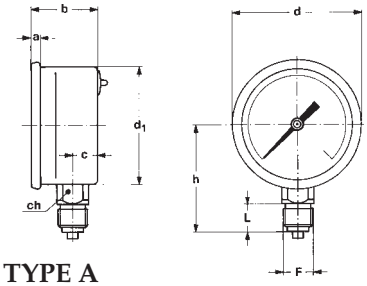
01.18.3 DS50 - Liquid filling

Ambient temperature: +15...+65°C.
Process temperature: max +65°C.
Protection: IP 65 as per IEC 529.
Damping liquid: glycerine 98%.
Other features: as type 01.18.1 DN50.

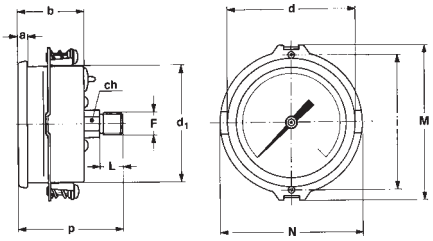
all stainless steel construction
Type 01.18 - DS 40-50

01.18

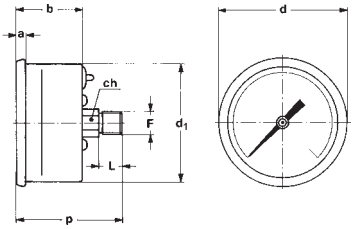
TYPE, DIMENSIONS AND WEIGHTS



TYPE A
stem mounting;
lower connection.



TIPO B
flush mounting, "U"-Clamp;
back connection.



TYPE D
stem mounting;
back connection.

DS	TYPE	a	b	c	d	d_1	i	M	N	Weight 01.18.1	Weight 01.18.3
40	D		26,5		45	41				0,07 Kg.	
50	A	4	29	11	56	51				0,095 Kg.	0,140 Kg.
50	B	4	29		56	51	58,5	67,5	62,6	0,078 Kg.	0,125 Kg.
50	D	4	29		56	51				0,078 Kg.	0,125 Kg.

(dimensions: mm)

F	Code	L	ch	h	p
1/8" BSP	**11M**	10	12	44,5	46
1/8" NPT	**13M**	10	12	44,5	46
1/4" BSP	**21M**	12	14	46,5	51
1/4" NPT	**23M**	15	14	49,5	51

(dimensions: mm)

HOW TO ORDER

	DESCRIPTION & CODE
01	01- bourdon tube pressure gauge
18	18 - all stainless steel MGS18
2	1 - standard 2 - dry version 3 - filled version
B	A - lower connection - stem mounting B - back connection - flush mounting, "U"-clamp D - back connection - stem mounting
B	A - DS40 B - DS50
2	2 - from 2,5 to 40 bar
0/10 bar	see ranges tables
21M	11M - 1/8" BSP 13M - 1/8" NPT 21M - 1/4" BSP (1) 23M - 1/4" NPT (1)
D02	see options table

(1) For type B and D please order also Option Code D02.

RANGES - "A" = DS 40; "B" = DS 50.

TAB. 1

RANGES	bar	kPa	MPa	bar est.	bar ext.	bar ext.
				psi int.	kPa int.	MPa int.
0...2,5	AB		AB	AB	AB	
0...4	AB		AB	AB	AB	
0...6	AB			AB	AB	
0...10	AB			AB		AB
0...16	AB			AB		AB
0...25	AB			AB		AB
0...40	AB			AB		AB
0...250		AB				
0...400		AB				
0...600		AB				
0...1000		AB				
0...1600		AB				
0...2500		AB				

TAB. 2

RANGES	psi int.	psi ext.	psi ext.
	kPa ext.	bar int.	kg/cm^2 int.
0...30	AB	AB	AB
0...60	AB	AB	AB
0...100	AB	AB	AB
0...160	AB	AB	AB
0...200	AB	AB	AB
0...300	AB	AB	AB
0...400	AB	AB	AB
0...500	AB	AB	AB
0...600	AB	AB	AB

OPTIONS

Description	Code	
AISI 316 st.st. adaptor 1/8" x 1/4"	**D02**	AB
IP65 execution	**E65**	A
Restrictor for pressure ranges - 40 bar (bottom only)	**S02**	B
Glass window (1)	**T30**	B

(1) 01.18.1 DS 50 only.

Bourdon Tube Pressure Gauge
All Stainless Steel construction
Type 01.18 - DS 63

01.18

These instruments are designed for use in food, beverage, pharmaceutical, cryogenic, chemical and petrochemical processing industries, and in conventional and nuclear power plants, to measure gaseous or liquid media which do not have high viscosity or do not cristalize. They are built to resist the most severe operating conditions created by the ambient environment and the process medium. For use on power units, pumps, hydro-cleaning machines, presses, engine compressors, turbines, diesel engines, chemical, petrochemical and refrigerating plants and on machines and equipment where pulsating pressures or mechanical vibrations are apparent, the liquid-filled version is recommended.

Functional and constructive characteristics.

01.18.1 Standard

Accuracy class: 1,6 as per EN 837-1.
Ambient temperature: -25...+65 °C.
Process temperature: max +100 °C.
Working pressure: max 75% of the full scale value .
Over pressure limit: (referred to the full scale value):
25% for pressure range - 100 bar;
15% for pressure ranges > 100 bar.
Protection: IP 55 as per IEC 529.
Socket material: AISI 316 st.st.
Elastic element by drawn tube without welding:
AISI 316L st.st. "C" shaped for pressure ranges - 40 bar;
AISI 316L st.st. spiral for pressure ranges 60...1000 bar.
Welding: AISI 316 TIG.
Case: AISI 304 st.st.
Ring: AISI 304 st.st., bayonet lock.
Window: plexiglas.
Movement: stainless steel.
Dial: ABS, white with black markings.
Special dials: ranges different from standard, or custom artwork, available on request.
Pointer: aluminium, micrometric adjustable.
Gasket: silicon rubber.

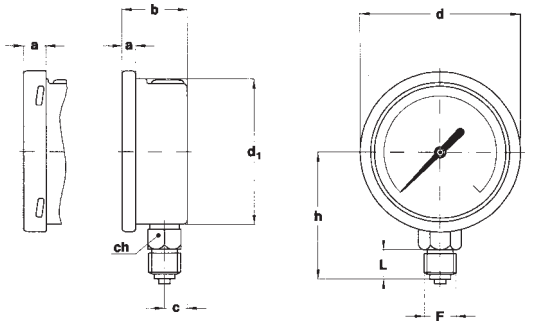
01.18.2 Fillable

Protection: IP 67 as per IEC 529.
Ring: AISI 304 st.st. polished, crimped.
Pointer: aluminium, black.
Note: version suitable for glycerine filling; other filling fluids available on request (see OPTIONS table) .
Other features: as type 01.18.1 (as type 01.18.3 when filled).

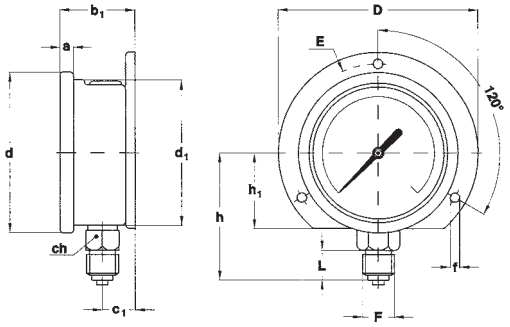
01.18.3 Liquid filled

Ambient temperature: max +65 °C, (see DAMPING LIQUIDS table for further information)
Process temperature: max +65 °C.
Protection: IP 67 as per IEC 529.
Ring: AISI 304 st.st. polished, crimped.
Pointer: aluminium, black.
Damping liquids: glycerine 98% (optional silicon oil, Fluorolube).
Other features: as type 01.18.1.

TYPE, DIMENSIONS AND WEIGHTS



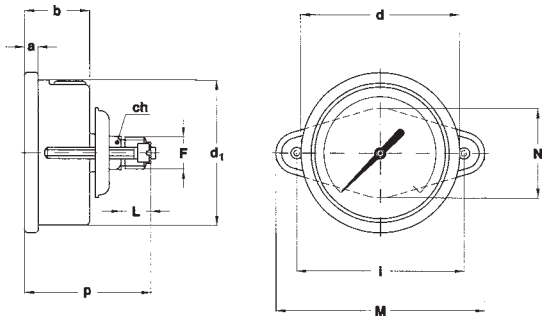
TYPE A
stem mounting;
lower connection.



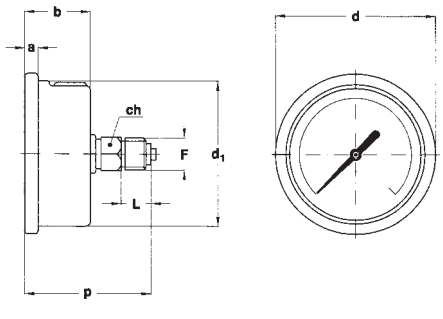
TYPE C
surface mounting, back flange;
lower connection.

MODEL	DS	TYPE	a	a_2	b	d	d_1	f	i	D	E	M	N	Weight (Kg.)
01.18.1 (standard)	63	D	9,5	10,5	28	68	62,6							0,14
01.18.2 (fillable)	63	B-D-E	5,6	6,6	28	68	62,6	3,6	72	85	75	90	38	0,18-0,14-0,17
01.18.3 (filled)	63	B-D-E	5,6	6,6	28	68	62,6	3,6	72	85	75	90	38	0,25-0,21-0,24

(dimensions : mm.)



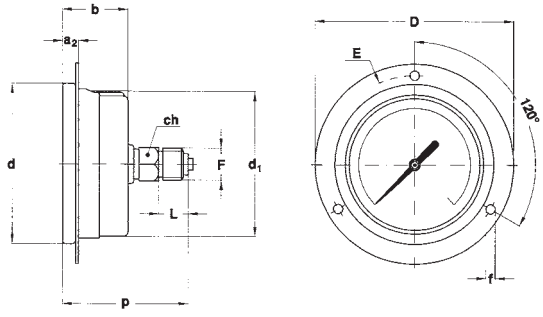
TYPE B - applicable on 01.18.2 and 01.18.3
flush mounting, "U"-Clamp;
back connection.



TYPE D
stem mounting;
back connection.

MODEL	DS	TYPE	a	b	b_1	c	c_1	d	d_1	f	h_1	D	E	Weight (Kg.)
01.18.1 (standard)	63	A-C	9,5	28	32	10	14	68	62,6	3,6	32	85	75	0,13-0,17
01.18.2 (fillable)	63	A-C	5,6	28	32	10	14	68	62,6	3,6	32	85	75	0,13-0,17
01.18.3 (filled)	63	A-C	5,6	28	32	10	14	68	62,6	3,6	32	85	75	0,2-0,24

(dimensions : mm.)



F	CODE	L	ch	h	p
1/8" BSP	**11M**	10	14 x 10	53,3	52,8
1/8" NPT	**13M**	10	14 x 10	53,3	52,8
1/4" BSP	**21M**	13	14 x 9	55,3	54,8
1/4" NPT	**23M**	13	14 x 8	54,3	53,8
1/4" BSP tapered	**22M**	13	14 x 8	54,3	53,8

(dimensions : mm.)

TYPE E - applicable on 01.18.2 and 01.18.3
flush mounting, front flange;
back connection.

DAMPING LIQUIDS

Damping liquids	Limit ambient temperature
Glycerine 98%	+15...+65 °C (+60...+150 °F)
Silicon oil	-45...+65 °C (-50...+150 °F)
"Fluorolube"	-60...+65 °C (-76...+150 °F)

Glycerine or silicone should not be used with highly oxidizing agents such as oxygen, chlorine, nitric acid or hydrogen peroxide, because of danger of spontaneous chemical reaction, inflammability or explosion. The use of fluorinates fluid is recommended in these cases.

RANGES

PRESSURE

TAB. 1

RANGE	bar	kPa	MPa	bar ext.	bar ext.	bar ext.
				psi int.	kPa int.	MPa int.
0...1	✦		✦	✦	✦	
0...1,6	✦		✦	✦	✦	
0...2,5	✦		✦	✦	✦	
0...4	✦		✦	✦	✦	
0...6	✦		✦	✦	✦	
0...10	✦		✦	✦		✦
0...16	✦		✦	✦		✦
0...25	✦		✦	✦		✦
0...40	✦		✦	✦		✦
0...60	✦		✦	✦		✦
0...100	✦	✦	✦	✦		✦
0...160	✦	✦		✦		✦
0...250	✦	✦		✦		✦
0...300	✦			✦		
0...400	✦	✦		✦		✦
0...600	✦	✦		✦		✦
0...1000	✦	✦		✦		✦
0...1600		✦				
0...2500		✦				

TAB. 2

RANGE	psi	psi int.	psi ext.	psi ext.
		kPa ext.	bar int.	Kg/cm^2 int.
0...15	✦	✦	✦	✦
0...30	✦	✦	✦	✦
0...60	✦	✦	✦	✦
0...100	✦	✦	✦	✦
0...160	✦	✦	✦	✦
0...200	✦	✦	✦	✦
0...300	✦	✦	✦	✦
0...400	✦	✦	✦	✦
0...600	✦	✦	✦	✦
0...1000	✦	✦	✦	✦
0...1500	✦	✦	✦	✦
0...2000	✦	✦	✦	✦
0...3000	✦	✦	✦	✦
0...4000	✦	✦	✦	✦
0...5000	✦	✦	✦	✦
0...6000	✦	✦	✦	✦
0...10000	✦	✦	✦	✦
0...15000	✦	✦	✦	✦

VACUUM & COMPOUND

TAB. 3

RANGE	bar	kPa	bar ext.	bar ext.
			psi int.*	kPa int.
-1...0	✦		✦	✦
-1...0,6	✦		✦	✦
-1...1,5	✦		✦	✦
-1...3	✦		✦	✦
-1...5	✦		✦	✦
-1...9	✦		✦	✦
-1...15	✦		✦	✦
-1...24	✦		✦	✦
-100...0		✦		
-100...150		✦		
-100...300		✦		
-100...500		✦		
-100...900		✦		
-100...1500		✦		

* vacuum unit of measurement: "inHg"

TAB. 4

RANGE	psi*	psi int.*	psi ext.*	psi ext.*
		kPa ext.	bar int.	Kg/cm^2 int.
-30...0	✦	✦	✦	✦
-30...15	✦	✦	✦	✦
-30...30	✦	✦	✦	✦
-30...150	✦		✦	

* vacuum unit of measurement: "inHg"

OPTIONS

Descriptio	Code	01.18.1	01.18.2	01.18.3
N1 version - phosphor bronz tube& brass socket for pressure ranges - 400 bar (3)	E01	✦		
"Fluorolube" filling (4)	F30			✦
DIN pointer (not adjustable)	L05	✦	✦	✦
Reference pointer "MN7"	L30	✦		
Polished flange type "E"	LU1		✦	✦
Brass movement MP2N	M01	✦	✦	✦
Suitabel for filling with silicone and "Fluorolube" (4)	P01		✦	
Sgrassaggio per ossigeno secondo procedura M049	P02	✦	✦ (2)	✦ (1)
Aluminium dial (3)	Q03	✦	✦	✦
Black dial (3)	Q04	✦	✦	✦
AISI304 st.st. restrictor ø 0,7 mm.	S02	✦	✦	✦
Silicone filling (4)	S10			✦
Glass window	T30	✦	✦	✦
Safety glass window	T32	✦		

(1) to be ordered with "Fluorolube" filling only (option F30).
(2) to be ordered with option "**P01**".
(3) minimum quantity N. 100.
(4) window gasket and blow out vent VITON.

HOW TO ORDER

	CODES & DESCRIPTION
01	01- bourdon tube pressure gauges
18	18 - alla stainless steel construction MGS18
2	1 - dry version 2 - fillable version 3 - filled version
C	A - lower connection - stem mounting B - back connection - flush mounting, "U"-clamp C - lower connection - surface mounting, back flange D - back connection - stem mounting E - back connection - flush mounting, front flange
C	C - DS63
2	1 - up to 2,5 bar 2 - from 4 to 40 bar 3 - over 40 bar
0/10 bar	see ranges table
21M	11M - 1/8" BSP 13M - 1/8" NPT 21M - 1/4" BSP 23M - 1/4" NPT 22M - 1/4" BSP tapered
21M	see options table

ACCESSORIES

Diaphragm seals: a complete range of diaphragm seals are available with a choice of materials of construction. Specifically for corrosive and difficult process fluids plus hygienic applications. For further details refer to our catalogues “04”.

Adjustable over-load protector: this is useful for installations which may generate high overpressures; the pressure gauges is automatically excluded at the pre-set pressure and cut in again automatically when the operating pressure returns to normal. For further details refer to our catalogue 05.48A-49A.

Valves: for construction details and for use limits refer to our catalogue 05.

Pigtail and siphons: recommended with temperatures of 65° C (150° F) or over.For further details refer to our catalogue 05.5xx.

Pressure snubbers: for further details refer to our catalogue 05.450-470.

Rohrfedermanometer NG 80 komplett aus Edelstahl
All stainless steel bourdon tube pressure gauge DS 80

018-080
183-080

Rel. 20170904

Typ 018-080: Edelstahl-Rohrfedermanometer NG 80 (ungefüllt)
Typ 183-080: Edelstahl-Rohrfedermanometer NG 80 mit Glyzerinfüllung

Anwendung:
Für gasförmige und flüssige Medien mit einer niedrigen Viskosität, die Edelstahl 1.4571 nicht angreifen.
Ausführung mit Glyzerinfüllung (183-080) auch für erschwerte Einsatzbedingungen mit Vibrationen und hohen dynamischen Druckbelastungen, keine Kondenswasserbildung.

Type 018-080: All st.st. bourdon tube pressure gauge DS 80 (dry)
Type 183-080: All st.st. bourdon tube pressure gauge DS 80 glycerine filled

Service intended:
For gaseous and liquid media with low viscosity which are suitable with stainless steel 1.4571.
Glycerine filled version (183-080) also for vibrations and pulsating pressure.

Gehäuse: Edelstahl, mit Perpunanring.
Anschluss: BSP oder NPT oder UNF.
Messsystem: Rohrfeder aus Edelstahl.
Zeigerwerk: Edelstahl.
Zeiger: Aluminium, schwarz.
Skala: Aluminium weiß, Skalierung schwarz.
Deckscheibe: Glas.
Güteklasse: 1,0
Druckbelastbarkeit: bei ruhender Belastung 100% vom Skalenendwert, bei wechselnder Belastung 90% vom Skalenendwert.
Umgebungstemperatur: -20...+60°C.
Mediumtemperatur: max. +60°C.
Temperatureinfluss: bei Abweichung von der Referenztemperatur +20°C am Messsystem max. ±0,4%/10K von der Anzeigespanne.
Anzeigebereiche: Alle Normbereiche von 0...1 bar bis 0...400 bar sowie Unterdruck- und Unter-/Überdruck-Messbereiche.
Option: Zusätzliche °C-Teilung, z.B. für NH3 Ammoniak.
Dämpfungsflüssigkeit:
Typ 018-080: keine,
Typ 183-080: Glyzerin 86%.
Schutzart nach EN 60529 / IEC 529:
Typ 018-080: IP 54
Typ 183-080: bis 40 bar IP 65, ab 60 bar IP 67.

Case: *Stainless steel.*
Connection: *BSP or NPT or UNF.*
Measuring element: *Bourdon tube in stainless steel.*
Movement: *Stainless steel.*
Pointer: *Aluminium, black.*
Dial: *Aluminium, white, black graduation.*
Window: *Glass.*
Accuracy: *±1.0% FS.*
Pressure load: *steady pressure 100% of full scale. Fluctuating pressure 90% of full scale value.*

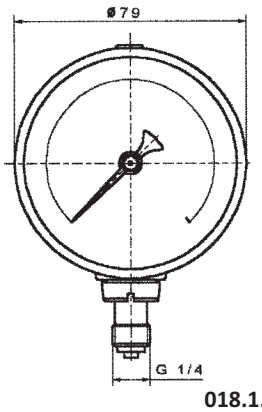
Ambient temperature: *-20...+60°C*
Medium temperature: *max. +60°C.*
Temperature influence: *if deviation from reference temperature +20°C max. ±0.4%/10K of the full scale value.*
Pressure ranges: *All norm ranges from 0...1 bar to 0...40 bar and vacuum and compound ranges.*

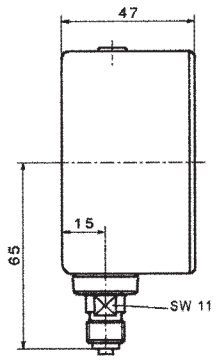
Option: *Additional °C scale, e.g. for NH3 (ammonia).*

Dampening fluid:
Type 018-080: no filling, dry,
Type 183-080: Glycerine 86%.
Protection as per EN 60529 / IEC 529:
Type 018-080: IP 54
Type 183-080: up to 40 bar IP 65, from 60 bar IP 67.

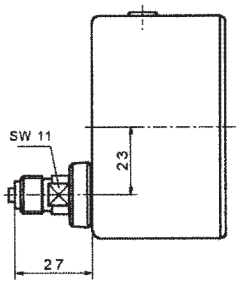
018-080 Rohrfedermanometer NG 80 komplett aus Edelstahl
183-080 All stainless steel bourdon tube pressure gauge DS 80

Ausführungen und Abmessungen / *Executions and dimensions*:

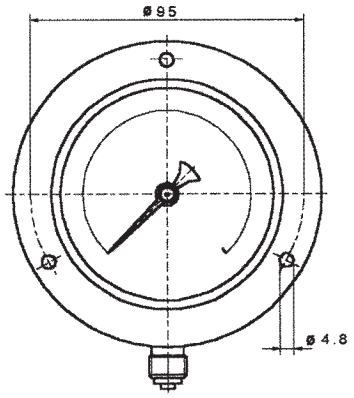


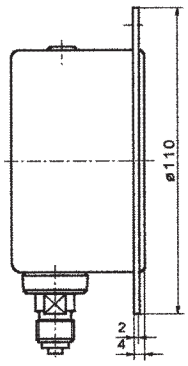


018.1.080 / 183.1.080
Anschluss unten zur Direktmontage
Bottom connection for direct mounting

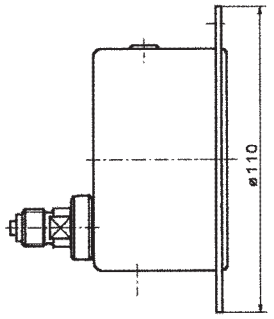


018.3.080 / 183.3.080
Anschl. hinten zur Direktmontage
Back connection for direct mounting

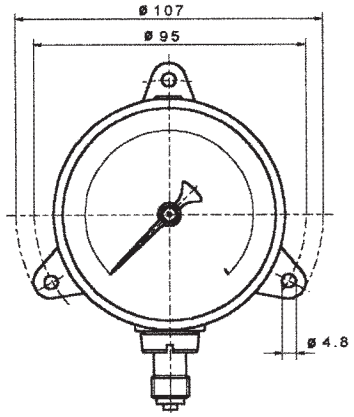


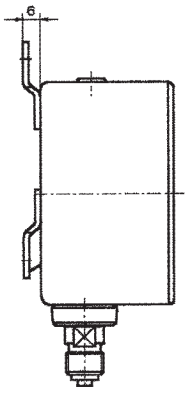


018.8.080 / 183.8.080
Anschluss unten mit 3-Loch-Flanschfrontring, Schalttafeleinbau
Bottom connection with front flange for panel mounting

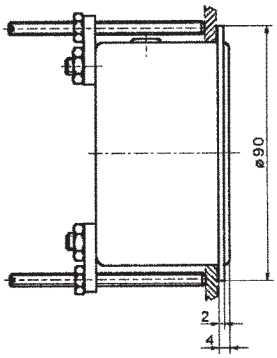


018.3.080 / 183.3.080
Anschl. hinten mit Flanschfrontring
zum Schalttafeleinbau
Back connection with front flange
for panel mounting





018.6.080 / 183.6.080
Anschluss unten mit hinteren Befestigungslaschen zur Wandmontage
Bottom connection with back flange for wall mounting



018.4.080 / 183.4.080
Anschl. hinten mit Klemmbügel
zum Schalttafeleinbau
Back connection with u-clamp
for panel mounting

Empfohlener Schalttafelausschnitt für Einbauvarianten: 84 mm Durchmesser.
Recommended panel cut-out *for panel mounting versions: 84 mm diameter.*

All stainless steel Bourdon Tube Pressure Gauge
Type 01.18 - DS 100-150

01.18

PED 2014/68/UE **ATEX 2014/34/UE**

Rel. 20190613

These instruments are designed for food, processing, pharmaceutical, petrochemical industries and for conventional and nuclear power plants. They are built to resist to the most severe conditions created by the process medium and by the environment and for those fluids, which have high viscosity and do not crystallize. The quality of the materials used to build the sensible element allows their use with high frequency pulsating pressures.

The TIG welding between the case and the process socket, strengthens the instrument and assures a better tight in case of dampening fluid. The advantages of filling the case of the instrument with a dampening fluid are: reduced pointer fluctuation, reduced wear of rotating parts of the movement when pulsant vibrations and pulsations occur. Moreover condensation and corrosive atmospheres which could damage the internal parts are prevented.

Functional and constructive characteristics

01.18.1 Standard

Accuracy class: 1.0 as per EN 837-1.
Ambient temperature -25...+65 °C.
Process fluid temperature: -40...+150 °C.
Working pressure (referred to the full scale value)**:** max 90% for pulsating pressure; 100% for static pressure.
Over pressure limit: 30% of full scale value.
Special over pressure : 50% of full scale value, for pressure ranges ≤ 400 bar (max 1 hour) as option.
Protection: IP 55 as per IEC 529.
Socket material: AISI 316L st.st.
Elastic element: AISI 316L st. st. seamless tube.
Case: AISI 304 st.st.
Ring: AISI 304 st.st. , bayonet lock.
Window: tempered glass.
Movement: stainless steel with internal limit stops for minimum and maximum pressure.
Dial: aluminium, white with black markings and "▼ " symbol at the edges of the scale value.
Special dial: ranges different from standard, custom artworks available on request.
Pointer: aluminium, micrometric adjustable, black painted.
Gasket, blow out vent and filling plug: EPDM

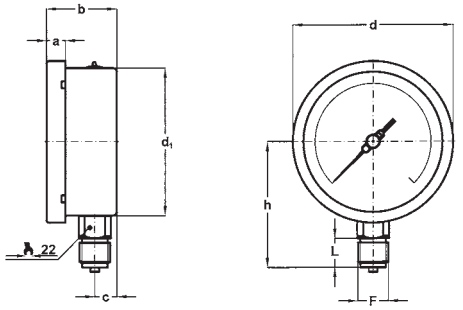
01.18.2 Fillable

Protection: IP 67 as per IEC 529.
Pointer: aluminium, non-adjustable, black painted.
Note: suitable for glycerine filling, silicone oil filling available on request (code P01).
Other features: as type 01.18.1 (as type 01.18.3, when filled).

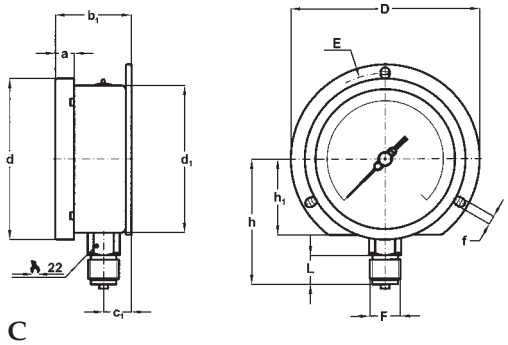
01.18.3 Liquid filled

Ambient temperature: max +65 °C, (see DAMPING LIQUIDS table on page 4 for further information)
Process fluid temperature: max +65 °C.
Protection: IP 67 as per IEC 529.
Damping liquids: glycerine 98%, silicone oil on request (code S10).
Pointer: aluminium, non-adjustable, black painted.
Other features: as type 01.18.1 Standard

TYPE, DIMENSIONS AND WEIGHTS



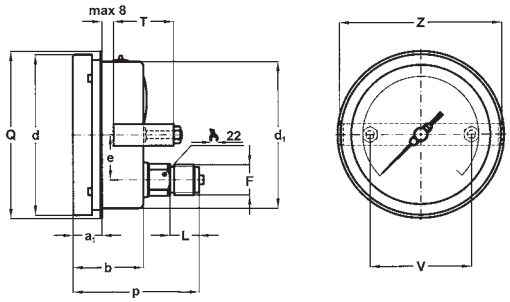
TYPE A
stem mounting;
lower connection.



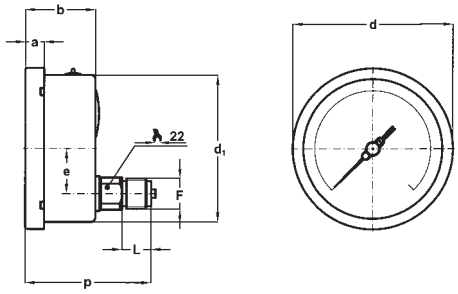
TYPE C
surface mounting, back flange;
lower connection.

DS	Type	a	b	b_1	c	c_1	d	d_1	f	h_1	D	E	ch	Weight 1.18.1-2	Weight 1.18.3
100	A-C	13	48,5	52,5	15	19	110,6	101	6	52	130	116...120	22	0,53 Kg.	0,86 Kg.
150	A-C	15	50,5	54	15,5	19	161	149,6	6	85	190	168...178	22	1,02 Kg.	1,80 Kg.

(dimensions in mm.)



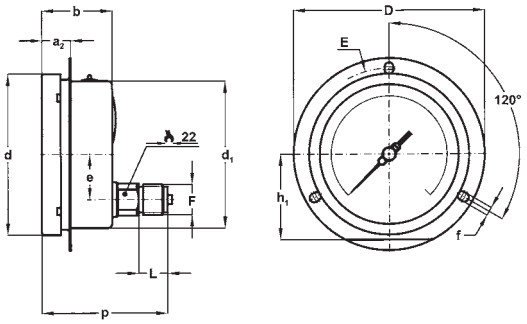
TYPE B
flush mounting, "U" -Clamp;
back connection.



TYPE D
stem mounting;
back connection.

DS	Type	a	a_1	a_2	b	d	d_1	e	f	h_1	D	E	Q	T	V	Z	ch	Weight 1.18.1-2	Weight 1.18.3
100	B-D-E	13	20	20	48,5	110,6	101	31	6	/	132	116...120	112	41,5	70	112	22	0,52 kg	0,85 kg
150	B-D-E	15	20,5	25,5	50,5	161	149,6	48	6	85	190	168...178	164	41,5	106	155	22	0,95 kg	1,73 kg

(dimensions in mm.)



TYPE E
flush mounting, front flange;
back connection.

PROCESS CONNECTIONS

F	Code	DS 100			DS 150		
		L	h	p	L	h	p
1/4" BSP	**21M**	13	79	85	13	110	83,5
1/4-18 NPT	**23M**	15	81	87	15	112	85,5
3/8" BSP	**31M**	16	86	87	16	113	85,5
3/8-18 NPT	**33M**	16	86	87	16	113	85,5
1/2" BSP	**41M**	20	86	87	20	117	85,5
G 1/2"-ISO 7/1	**42M**	20	86	87	20	117	85,5
1/2-14 NPT	**43M**	20	86	87	20	117	85,5
M 20 x 1,5	**97M**	20	86	87	20	117	85,5

(dimensions in mm.)

RANGES - "E" = DS 100; "G" = DS 150.

PRESSURE

TAB. 1

RANGE	bar	kPa	MPa	bar ext.	bar ext.	bar ext.
				psi int.	kPa int.	MPa int.
0...0,6 (1)	E G			E G	E G	
0...1	E G		E G	E G	E G	
0...1,6	E G		E G	E G	E G	
0...2,5	E G		E G	E G	E G	
0...4	E G		E G	E G	E G	
0...6	E G		E G	E G	E G	
0...10	E G		E G	E G		E G
0...16	E G		E G	E G		E G
0...25	E G		E G	E G		E G
0...40	E G		E G	E G		E G
0...60	E G	E G (1)	E G	E G		E G
0...100	E G	E G	E G	E G		E G
0...160	E G	E G	E G	E G		E G
0...250	E G	E G		E G		E G
0...300	E G					
0...400	E G	E G		E G		E G
0...600	E G	E G		E G		E G
0...1000	E G	E G		E G		E G
0...1600	E G	E G		E G		E G
0...2500		E G				

(1) not available for MGS 18/3 (1.18.3)

TAB. 2

RANGE	psi	psi int.	psi ext.	psi ext.
		kPa est.	bar int.	Kg/cm^2 int.
0...15	E G	E G	E G	E G
0...30	E G	E G	E G	E G
0...60	E G	E G	E G	E G
0...100	E G	E G	E G	E G
0...160	E G	E G	E G	E G
0...200	E G	E G	E G	E G
0...300	E G	E G	E G	E G
0...400	E G	E G	E G	E G
0...600	E G	E G	E G	E G
0...1000	E G	E G	E G	E G
0...1500	E G	E G	E G	E G
0...2000	E G	E G	E G	E G
0...3000	E G	E G	E G	E G
0...4000	E G	E G	E G	E G
0...5000	E G	E G	E G	E G
0...6000	E G	E G	E G	E G
0...10000	E G	E G	E G	E G
0...15000	E G	E G	E G	E G
0...20000	E G	E G	E G	E G
0...30000 (1)	E G	E	E	E

(1) working pressure: max 75% of the full scale value
over pressure limit: 10% of the full scale value

TAB. 3 - Receiver

External	Internal	Internal
	0÷100 linear	0÷10 quadratic
0,2...1 bar	E G	E G
0,2...1 kg/cmq	E G	E G
3...15 psi	E G	E G
20...100 kPa	E G	E G

VACUUM & COMPOUND

TAB. 4

RANGE	bar	kPa	bar ext.	bar ext.
			psi int.*	kPa int.
-1...0	E G		E G	E G
-1...0,6	E G		E G	E G
-1...1,5	E G		E G	E G
-1...3	E G		E G	E G
-1...5	E G		E G	E G
-1...9	E G		E G	E G
-1...15	E G		E G	E G
-1...24	E G		E G	E G
-100...0		E G		
-100...150		E G		
-100...300		E G		
-100...500		E G		
-100...900		E G		
-100...1500		E G		
-100...2400		E G		

* vacuum unit of measuremen: "inHg"

TAB. 5

RANGE	psi*	psi int.*	psi ext.*	psi ext.*
		kPa ext.	bar int.	kg/cm^2 int.
-30...0	E G	E G	E G	E G
-30...15	E G	E G	E G	E G
-30...30	E G	E G	E G	E G
-30...150	E G	/	EG	/

* vacuum unit of measurement: "inHg"

TAB. 6 - NH3

bar external	NH3 internal	
-1...5	-70...+9°C	E
-1...9	-70...+25°C	E
-1...15	-70...+40°C	E
-1...24	-70...+56°C	E

INSTRUMENTS FOR OXYGEN

To suit safety criteria of standard EN837.1-2, the pressure gauges for oxigen service must be solid-front type (with baffle wall and safety bursting back).
Pressure gauges suitable for this service are detailed on Type 01.20 DS 100-150 sheet.

OPTIONS - "E" = DS 100; "G " = DS 150.

DESCRIPTION	CODE	01.18.1 (standard)	01.18.2 (fillable)	01.18.3 (filled)
ATEX version II 2G c	**2G1**	*Constructive characteristics and ordering guide please refere to the relevant ATEX version data sheet.*		
ATEX version II 2GD c	**2D1**			
AISI 316 st.st. case and ring	**C40**	E G	E G	E G
Accuracy class: 0.6 as per EN 837-1 (1)	**K06**	E G	E G (2)	
Non-adjustable pointer	**L01**	E G	STD	STD
Adjustable pointer	**L02**	STD	E G	E G
Maximum pointer IP 44 on plexiglas window (6)	**L21**	E G		
Maximum pointer IP 65 on plexiglas window (6)	**L22**	E G	E G	E G
AISI 304 st.st. movement, with brass gearing (3)	**M01**	E	E	E
Suitable for filling with silicone (4)	**P01**		E G	
Without restrictor	**S03**	E G (7)	E G	E G
Silicone filling (4)	**S10**			E G
Overpressure 50% of the full scale value for ranges - 400 bar	**SVP**	E G	E G	E G
Tropicalisation	**T01**	E G	E G	E G
Stainless steel label	**T25**	E G	E G	E G
Plexiglas window	**T31**	E G	E G	E G
Safety glass window	**T32**	E G	E G	E G
Restrictor 0,7 mm	**V11**	E G (5)	STD	STD

(1) for ranges up to 400 bar/6000 PSI, not available for receivers

(2) to be ordered with option L02

(3) accuracy class: 1.0 as per EN 837-1, without internal stops

(4) window gasket: silicone rubber; blow out vent & filling plug: VITON

(5) std for pressure ranges ≥ 60 bar

(6) accuracy class is guaranted when the indicating pointer is not affected by the maximum pointer

(7) std for pressure ranges < 60 bar

DAMPING LIQUIDS

Damping liquids	Ambient temperature
Glycerine 98%	+15...+65 °C (+60...+150 °F)
Silicone oil	-45...+65 °C (-50...+150 °F)

ORDER-CODE:

01	01 - bourdon tube pressure gauges
18	18 - all st. st. construction MGS18
2	1 - standard version 2 - fillable version 3 - liquid filled
C	A - lower connection - stem mounting B - back connection - flush mounting, "U"-clamp C - lower connection - surface mounting, back flange D - back connection - stem mounting E - back connection - flush mounting, front flange
E	E - DS 100 G - DS 150
0/10 bar	see ranges table
41M	see process connection table
M01	see options table

ACCESSORIES

Diaphragm seals: a complete range of diaphragm seals are available with a choice of materials of construction. Specifically for corrosive and difficult process fluids plus hygienic applications. For further details refer to relevant data sheets.

Adjustable over-load protector: this is useful for installations which may generate high overpressures; the pressure gauges is automatically excluded at the pre-set pressure and cut in again automatically when the operating pressure returns to normal. For further details refer to relevant data sheet.

Valves: for construction details and for use limits refer to relevant data sheet.

Pigtail and siphons: recommended with temperatures of 65° C (150° F) or over. For further details refer to relevant data sheet.

Pressure snubbers: for further details refer to relevant data sheet.

All st.st. bourdon tube Pressure Gauges
NACE MR 01.03 - version
Type 01.36 - DS 100+150

01.36

PED 97/23/CE
ATEX 94/9/CE

These instruments are designed for petrochemical industry. They are built to resist to the most severe conditions created by H_2S, by the environment and for those fluids, which have high viscosity and do not crystallize. The quality of the materials used to build the sensible element allows their use with high frequency pulsating pressures. The TIG welding between the case and the process socket, strengthens the instrument and assures a better tight in case of dampening fluid. The advantages of filling the case of the instrument with a dampening fluid are: reduced pointer fluctuation, reduced wear of rotating parts of the movement when pulsant vibrations and pulsations occur. Moreover condensation and corrosive atmospheres which could damage the internal

Functional and constructive characteristics

01.36.1 - Standard

Accuracy class: 1 as per EN 837-1.
Ambient temperature -25...+65 °C.
Process fluid temperature: -40...+150 °C.
Working pressure (referred to the full scale value)**:** max 90% for pulsating pressure; 100% for static pressure.
Over pressure limit: 30% of full scale value.
Protection: IP 55 as per IEC 529.
Socket material: AISI 316L st.st., MONEL 400 available on request (code E07).
Elastic element: MONEL 400 seamless tube.
Leak Test: Helium Test leak Search (max $1x10^{-7}$ mbar x l x s^{-1}).
Case: AISI 304 st.st.
Ring: AISI 304 st.st. , bayonet lock.
Window: tempered glass.
Movement: stainless steel with internal limit stops for minimum and maximum pressure.
Dial: aluminium, white with black markings and "▼ " symbol at the edges of the scale value.
Special dial: ranges different from standard, custom artworks available on request.
Pointer: aluminium, micrometric adjustable, black painted.
Gasket, blow out vent and filling plug: EPDM

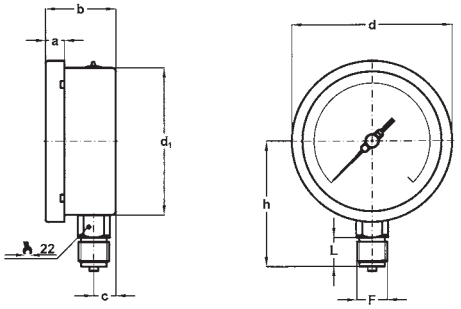
01.36.2 - Fillable

Protection: IP 67 as per IEC 529.
Note: suitable for glycerine filling, silicone oil filling available on request (code P01).
Other features: as type 01.36.1 (as type 01.36.3, when filled).

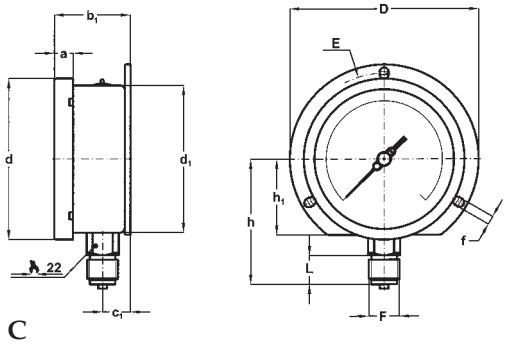
01.36.3 - Liquid filled

Ambient temperature: max +65 °C, (see DAMPING LIQUIDS table on page 4 for further information)
Process fluid temperature: max +65 °C.
Protection: IP 67 as per IEC 529.
Damping liquids: glycerine 98%, silicone oil on request (code S10).
Other features: as type 01.36.1 Standard.

TYPE, DIMENSIONS AND WEIGHTS



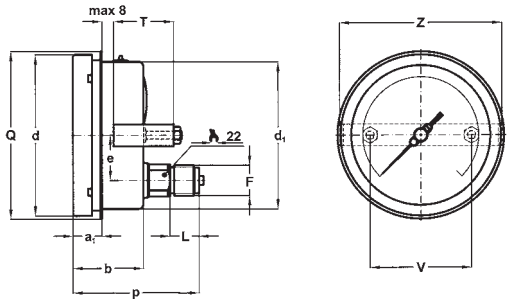
TYPE A
stem mounting;
lower connection.



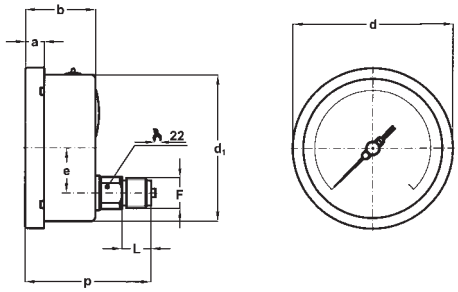
TYPE C
surface mounting, back flange;
lower connection.

DS	Type	a	b	b_1	c	c_1	d	d_1	f	h_1	D	E	ch	Weight 01.36.1-2	Weight 01.36.3
100	A-C	13	48,5	52,5	15	19	110,6	101	6	52	130	116...120	22	0,53 kg.	0,86 kg.
150	A-C	15	50,5	54	15,5	19	161	149,6	6	85	190	168...178	22	1,02 kg.	1,80 kg.

(dimensions in mm.)



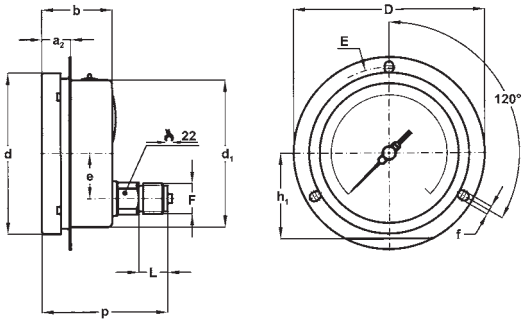
TYPE B
flush mounting, "U" -Clamp;
back connection.



TYPE D
stem mounting;
back connection.

DS	Type	a	a_1	a_2	b	d	d_1	e	f	h_1	D	E	Q	T	V	Z	ch	Weight 01.36.1-2	Weight 01.36.3
100	B-D-E	13	20	20	48,5	110,6	101	31	6	/	132	116...120	112	41,5	70	112	22	0,52 kg	0,85 kg
150	B-D-E	15	20,5	25,5	50,5	161	149,6	48	6	85	190	168...178	164	41,5	106	155	22	0,95 kg	1,73 kg

(dimensions in mm.)



TYPE E
flush mounting, front flange;
back connection.

PROCESS CONNECTIONS

F	Code	DS 100			DS 150		
		L	h	p	L	h	p
1/2" BSP	**41M**	20	86	87	20	117	85,5
1/2-14 NPT	**43M**	20	86	87	20	117	85,5

(dimensions in mm.)

RANGES - "E" = DS 100; "G" = DS 150.

PRESSURE

TAB. 1

RANGE	bar	kPa	MPa	bar ext.	bar ext.	bar ext.
				psi int.	kPa int.	MPa int.
0...1	E G		E G	E G	E G	
0...1,6	E G		E G	E G	E G	
0...2,5	E G		E G	E G	E G	
0...4	E G		E G	E G	E G	
0...6	E G		E G	E G	E G	
0...10	E G		E G	E G		E G
0...16	E G		E G	E G		E G
0...25	E G		E G	E G		E G
0...40	E G		E G	E G		E G
0...60	E G		E G	E G		E G
0...100	E G	E G		E G		E G
0...160	E G	E G		E G		E G
0...250	E G	E G		E G		E G
0...300	E G					
0...400	E G	E G		E G		E G
0...600	E G	E G		E G		E G

TAB. 2

RANGE	psi	psi int.	psi ext.	psi ext.
		kPa ext.	bar int.	kg/cm ^{2} int.
0...15	E G	E G	E G	E G
0...30	E G	E G	E G	E G
0...60	E G	E G	E G	E G
0...100	E G	E G	E G	E G
0...160	E G	E G	E G	E G
0...200	E G	E G	E G	E G
0...300	E G	E G	E G	E G
0...400	E G	E G	E G	E G
0...600	E G	E G	E G	E G
0...1000	E G	E G	E G	E G
0...1500	E G	E G	E G	E G
0...2000	E G	E G	E G	E G
0...3000	E G	E G	E G	E G
0...4000	E G	E G	E G	E G
0...6000	E G	E G	E G	E G
0...10000	E G	E G	E G	E G

VACUUM & COMPOUND

TAB. 3

RANGE	bar	kPa	bar ext.	bar ext.
			psi int.*	kPa int.
-1...0	E G		E G	E G
-1...0,6	E G		E G	E G
-1...1,5	E G		E G	E G
-1...3	E G		E G	E G
-1...5	E G		E G	E G
-1...9	E G		E G	E G
-1...15	E G		E G	E G
-1...24	E G		E G	E G
-100...0		E G		
-100...150		E G		
-100...300		E G		
-100...500		E G		
-100...900		E G		
-100...1500		E G		
-100...2400		E		

* vacuum unit of measuremen: "inHg"

TAB. 4

RANGE	psi*	psi int.*	psi ext.*	psi ext.*
		kPa ext.	bar int.	kg/cm ^{2} int.
-30...0	E G	E G	E G	E G
-30...15	E G	E G	E G	E G
-30...30	E G	E G	E G	E G
-30...150	E G	/	EG	/

* vacuum unit of measuremen: "inHg"

DAMPING LIQUIDS

Damping liquids	Ambient temperature
Gliceryne 98%	+15...+65 °C (+60...+150 °F)
Silicone oil	-45...+65 °C (-50...+150 °F)

INSTRUMENTS FOR OXYGEN

To suit safety criteria of standard EN837.1-2, the pressure gauges for oxigen service must be solid-front type (with baffle wall and safety bursting back).

Pressure gauges suitable for this service are detailed on Type 01.40 - DS 100+150 sheet.

OPTIONS - "E" = DS 100; "G " = DS 150.

DESCRIPTION	CODE	01.36.1 (standard)	01.36.2 (fillable)	01.36.3 (filled)
ATEX version II 2G c	**2G1**	*Constructive characteristics and ordering guide please refere to the relevant ATEX version data sheet.*		
ATEX version II 2GD c	**2D1**			
AISI 316 st.st. case and ring	**C40**	E G	E G	E G
Monel 400 socket	**E07**	E G	E G	E G
NACE MR 01.03 version	**E30**	E G	E G	E G
Non-adjustable pointer	**L01**	E G	E G	E G
Suitable for filling with silicone (1)	**P01**		E G	
Without restrictor	**S03**	E G (4)	E G	E G
Silicone filling (1)	**S10**			E G
Tropicalisation	**T01**	E G	E G	E G
Stainless steel label	**T25**	E G	E G	E G
Plexiglas window	**T31**	E G	E G	E G
Safety glass window	**T32**	E G	E G	E G
Restrictor 0,7 mm (2)	**V11**	E G (3)	STD	STD

(1) window gasket: silicone rubber; blow out vent & filling plug: VITON
(2) not available with E07 option
(3) std for pressure ranges ³ 60 bar
(4) std for pressure ranges < 60 bar

ORDER-CODE:

01	1 - bourdon tube pressure gauges
36	36 - all st.st. pressure gauge (NACE MR 01.03)
2	1 - standard version 2 - fillable version 3 - liquid filled
C	A - lower connection - stem mounting B - back connection - flush mounting, "U"-clamp C - lower connection - surface mounting, back flange D - back connection - stem mounting E - back connection - flush mounting, front flange
E	E - DS 100 G - DS 150
0/10 bar	see ranges table
41M	see process connection table
E30	see options table

ACCESSORIES

Diaphragm seals: a complete range of diaphragm seals are available with a choice of materials of construction. Specifically for corrosive and difficult process fluids plus hygienic applications. For further details refer to relevant data sheets.

Adjustable over-load protector: this is useful for installations which may generate high overpressures; the pressure gauges is automatically excluded at the pre-set pressure and cut in again automatically when the operating pressure returns to normal. For further details refer to relevant data sheet.

Valves: for construction details and for use limits refer to relevant data sheet.

Pigtail and siphons: recommended with temperatures of 65° C (150° F) or over. For further details refer to relevant data sheet.

Pressure snubbers: for further details refer to relevant data sheet.

Pressure Gauges - all stainless steel construction HEAVY WORK

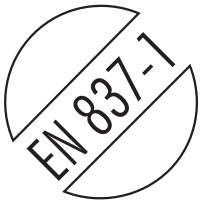
MGS18/HW - DS 100-150

MGS20/HW - DS 100-150

code

01.19

01.21



These instruments are designed for use in food, beverage, pharmaceutical, cryogenics, chemical and petrochemical processing industries, and in conventional and nuclear power plants.They are built to resist the most severe operating conditions created by the ambient environment and the process medium. The high strength of the sensing element makes these instrument suitable to withstand high overpressure up to 4 times the full scale value and together with the case filling, they are suitable to high dynamic pulsating pressure. An Argonarc welded case/socket strengthens the whole construction. The **solid-front** version of these instruments is built in accordance with safety specifications of **EN 837-1** and **ANSI B40.1.** The safety construction consists of a **solid separating wall** in stainless steel, placed between the dial and the elastic element and a **blow out back** which is released from the case whenever an internal pressure, due to leaks, is created or the elastic element is broken.

Functional and constructive characteristics.

01.19.1 Standard
01.21.1 Standard, **Solid-Front**

Accuracy class: 1 as per EN 837-1.
Ambient temperature: -25...+65 °C.
Process fluid temperature: -40...+150 °C.
Working pressure (referred to the scale value) **:** max 90% for pulsating pressure, 100% for static pressure.
Overpressure: see table on page 3.
Protection: IP 55 as per IEC 529.
Socket material: AISI 316L.
Elastic element: AISI 316L st.st. seamless tube.
Welding: AISI 316 TIG.
Case: AISI 304 st.st.
Ring: AISI 304 st.st. bayonet lock.
Blow out disk: AISI 304 st.st. (solid-front only).
Window: safety glass.
Movement: stainless steel with internal limit stops for minimum and maximum pressure (reinforced on DS 150) .
Dial: aluminium, white with black markings "▼" and symbol at the edges of the full scale value.
Pointer: aluminium, micrometic adjustable.
Window gasket, blow out vent and filling plug: EPDM.
Blow out disk gasket: EPDM (solid-front only).

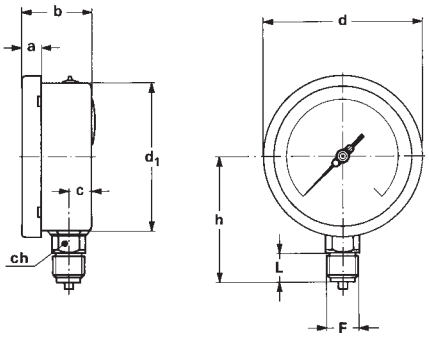
01.19.2 Fillable
01.21.2 Fillable, **Solid-Front** (Vertical type only)

Protection: IP 67 as per IEC 529.
Window: safety glass.
Note: suitable for glycerine filling; other filling fluids available on request (see OPTIONS table on pag. 4) .
Other features: as standard types.

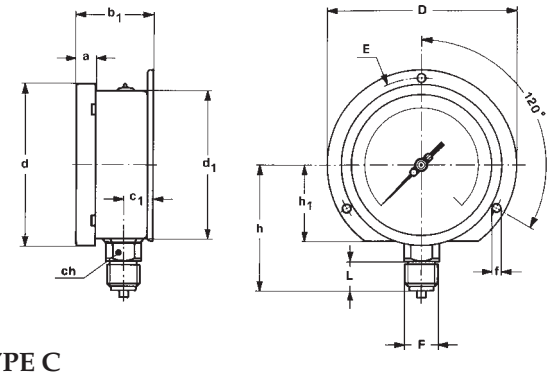
01.19.3 Liquid filled
01.21.3 Liquid filled, **Solid-Front** (Vertical type only)

Accuracy class: 1,6 as per EN 837-1.
Ambient temperature: max +65 °C, (see DAMPING LIQUIDS table on page 4 for further information).
Process fluid temperature: +65 °C.
Protection: IP 67 as per IEC 529.
Window: safety glass.
Damping liquids: glycerine 98%, (see DAMPING LIQUIDS table on page 4 for others filling fluids).
Other features: as standard types.

01.19: TYPE, DIMENSION AND WEIGHTS



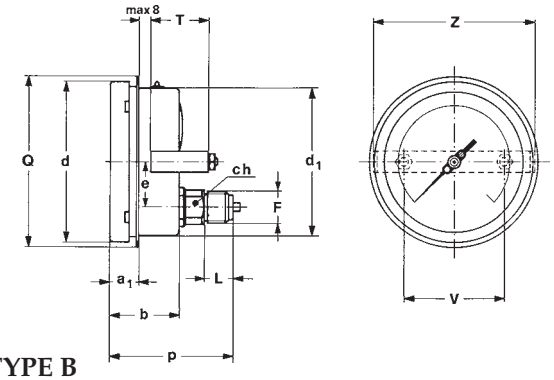
TYPE A
stem mounting;
lower connection.



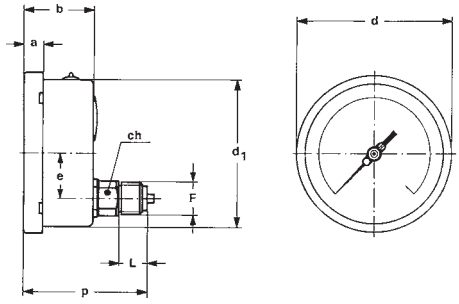
TYPE C
surface mounting, back flange,
lower connection.

DS	Type	a	b	b_1	c	c_1	d	d_1	f	h_1	D	E	ch	Weight 19.1-2	Weight 19.3
100	A-C	13	48,5	52,5	15	19	110,5	101	6	52	130	118	22	0,53 Kg.	0,86 Kg.
150	A-C	15	50,5	54	15,5	19	161	149,5	6	85	190	175	22	1,02 Kg.	1,72 Kg.

(dimensions : mm.)



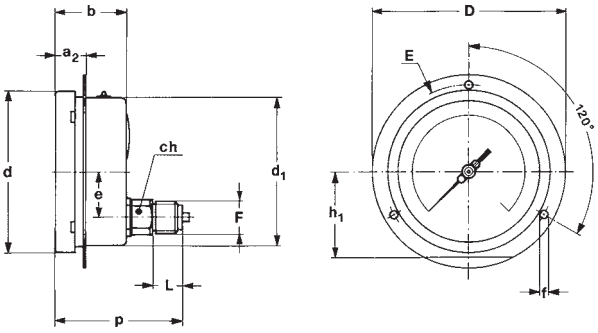
TYPE B
flush mounting, "U"-Clamp;
back connection.



TYPE D
stem mounting;
back connection.

DS	Type	a	a_1	a_2	b	d	d_1	e	f	h_1	D	E	Q	T	V	Z	ch	Weight 19.1-2	Weight 19.3
100	B-D-E	13	20	20	48,5	110,5	101	31	6	/	132	118	112	41,5	70	112	22	0,52 Kg.	0,85 Kg.
150	B-D-E	15	20,5	25,5	50,5	161	149,5	48	6	85	190	175	164	41,5	106	155	22	0,95 Kg.	1,65 Kg.

(dimensions : mm.)



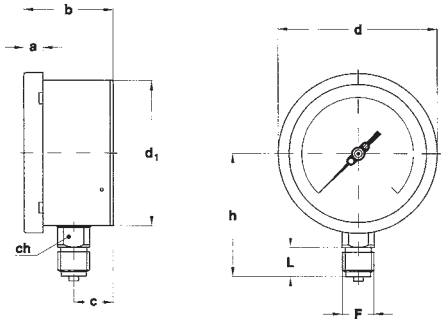
TYPE E
flush mounting, front flange;
back connection.

PROCESS CONNECTIONS

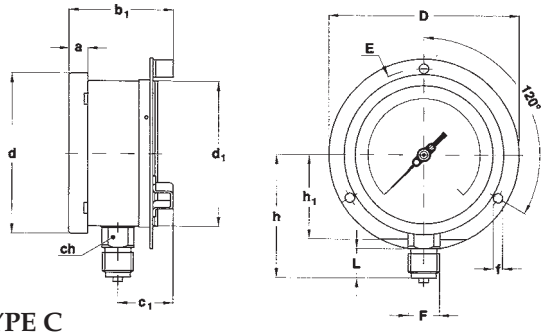
F	CODE	DS 100			DS 150		
		L	h	p	L	h	p
1/4" BSP M	**21M**	13	79	85 (93,5)	13	110	83,5 (94)
1/4" NPT M	**23M**	15	81	87 (95,5)	15	112	85,5 (96)
3/8" BSP M	**31M**	16	86	87 (95,5)	16	117	85,5 (96)
3/8" NPT M	**33M**	16	86	87 (95,5)	16	117	85,5 (96)
1/2" BSP M	**41M**	20	86	87 (95,5)	20	117	85,5 (96)
1/2" BSP M tapered	**42M**	20	86	87 (95,5)	20	117	85,5 (96)
1/2" NPT M	**43M**	20	86	87 (95,5)	20	117	85,5 (96)
M20 x 1,5 M	**97M**	20	86	87 (95,5)	20	117	85,5 (96)

(the dimentions between brackets are referring to type 01.21)

01.21: TYPE, DIMENSIONS AND WEIGHTS



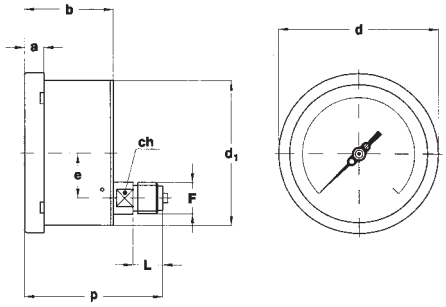
TYPE A
stem mounting;
lower connection.



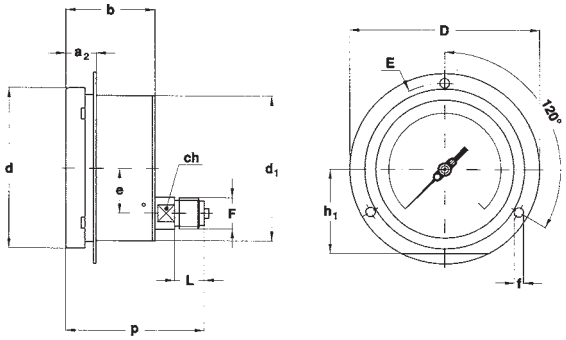
TYPE C
surface mounting, back flange;
lower connection.

DS	TYPE	a	b	b_1	c	c_1	d	d_1	h_1	f	D	E	ch	Weight 21.1-2	Weight 21.3
100	A-C	13	62,5	74	29,5	41	110,6	101	-	6	132	118	22	0,65 Kg.	0,98 Kg.
150	A-C	15	64	75,5	30	41,5	161	149,6	85	6	190	175	22	1,2 Kg.	2 Kg.

(dimensions : mm.)



TYPE D
stem mounting;
back connection.



TYPE E
flush mounting, front flange;
back connection.

DS	TYPE	a	a_2	b	d	d_1	e	f	h_1	D	E	ch	Weight 21.1
100	D-E	13	20	61	110,6	101	31	6	-	132	118	17	0,7 Kg.
150	D-E	15	25,5	64	161	149,6	47,8	6	85	190	175	17	1,15 Kg.

(dimensions : mm.)

RANGES

PRESSURE

Ranges (bar)	0...1	0...1,6	0...2,5	0...4	0...6	0...10	0...16	0...25	0...40	0...60	0...100	0...160	0...250	0...400	0...600	0...1000
Overpressure (bar)	4	6	10	16	25	40	48	75	80	120	200	320	500	800	1200	1600

M.U. available: bar; kPa; MPa; bar/psi; bar/Kpa; bar/Mpa

Ranges (psi)	0...15	0...30	0...60	0...100	0...160	0...200	0...300	0...400	0...600	0...1000	0...1500	0...2000	0...3000	0...4000	0...6000	0...10000	0...15000
Overpressure (psi)	60	120	240	400	480	600	900	1000	1200	2000	3000	4000	6000	8000	10000	15000	20000

M.U. available: psi; psi/Kpa; psi/bar; psi/Kg/cm2

VACUUM & COMPOUND

Ranges (bar)	-1...0	-1...0,6	-1...1,5	-1...3	-1...5	-1...9	-1...15	-1...24
Overpressure (bar)	3	5	9	15	23	39	47	75

M.U. available: bar; kPa; MPa; bar/psi; bar/Kpa; bar/Mpa

Ranges (psi) (1)	-30...0	-30...15	-30...30	-30...150
Overpressure (psi)	45	100	125	450

M.U. available: psi; psi/Kpa; psi/bar; psi/Kg/cm2
(1) vacuum M.U.: InHg

01.19 : OPTIONS - "E" = DS100; "G" = DS150.

DESCRIPTION	CODE	01.19.1 (standard)	01.19.2 (fillable)	01.19.3 (filled)
AISI 316 st.st. case and ring	**C40**	E G	E G	E G
Non adjustable pointer	**L01**	E G	E G	E G
Suitable for silicone oil filling (4)	**P01**		E G	
Silicone oil filling (4)	**S10**			E G
Tropicalization	**T01**	E G	E G	E G
AISI 316 st.st. label	**T25**	E G	E G	E G
Rescritor screw 0,7 mm.	**V11**	E G (3)	STD	STD

01.21 : OPTIONS - "E" = DS100; "G" = DS150 (differences to 01.19 options).

DESCRIPTION	CODE	01.21.1 (standard)	01.21.2 (fillable)	01.21.3 (filled)
AISI 316 st.st. case and ring	**C40**	E	E	E
"Fluorolube" filling (4)	**F30**			E G
Oxygen service MO49	**P02**	E G	E G (2)	E G (1)

(1) to be ordered only with "Fluorolube" (option F30).

(2) to be ordered with option "P01".

(3) std for pressure ranges ³ 60 bar.

(4) window gasket: silicone rubber; blow out vent & filling plug: VITON.

HOW TO ORDER

01	01- bourdon tube pressure gauges
19	19 - MGS18/HW 21 - MGS20/HW
2	1 - standard 2 - fillable version 3 - filled version
C	A - lower connection - stem mounting B - back connection - flush mounting, "U" -clamp C - lower connection - surface mounting, back flange D - back connection - stem mounting E - back connection - flush mounting, front flange
E	E - DS100 G - DS150
2	1 - up to 2,5 bar 2 - from 4 to 40 bar 3 - over 40 bar
0/10 bar	see ranges table
41M	21M - 1/4" BSP M 23M - 1/4" NPT M 31M - 3/8" BSP M 33M - 3/8" NPT M 41M - 1/2" BSP M 42M - 1/2" BSP M TAPERED 43M - 1/2" NPT M 97M - M20 x 1,5
L01	see options table

INSTRUMENTS FOR OXYGEN SERVICE

To suit safety criteria of standard EN837-1/2, the pressure gauges for oxigen service must be solid-front type (with baffle wall and safety bursting back).

Pressure gauges suitable for this service are 01.21 DS 100-150, detailed on page 3.

DAMPING LIQUIDS

Damping liquids	Ambient temperature
Glycerine 98%	+15...+65 °C (+60...+150 °F)
Silicon oil	-45...+65 °C (-50...+150 °F)
"Fluorolube"	-60...+65 °C (-76...+150 °F)

Glicerine or silicone should not be used with highly oxidizing agents such as oxigen, chlorine, nitric acid or hydrogen peroxide, because of danger of spontaneous chemical reaction, inflammability or exposition. The use of fluorinates fluid and solid-front instruments type 01.21 are recommended in these cases.

ACCESSORIES

Diaphragm seals: a complete range of diaphragm seals are available with a choice of materials of construction . Specifically for corrosive and difficult process fluids plus hygienic applications. For further details refer to the relative data-sheet "04".

Valves: for construction details and for use limits refer to our data-sheet 05.

Pigtail and siphons: recommended with temperatures of 65°C (150°F) or over. For further details refer to our data-sheet 05.5xx.

Pressure snubbers: for further details refer to our data-sheet 05.450-470.

Safety Pressure Gauge
All Stainless Steel, "Solid-Front"
Type 01.20 - DS 63

EN 837-1

These Solid-Front instruments are built in accordance with safety specifications of **EN 837-1 "S3"** and **ANSI B40.1**.
The safety construction consists of a solid separating wall in stainless steel, placed between the scale and the elastic element and a blow out back which is released from the case whenever an internal pressure, due to leaks, is created or the elastic element is broken. A leak tight fit is ensured if the instrument is filled with a dampening fluid to prevent damage due to vibration. These instruments are designed for use in food, beverage, pharmaceutical, cryogenic, chemical and petrochemical processing industries, and in conventional and nuclear power plants. They are built to resist the most severe operating conditions created by the ambient environment and the process medium.

Functional and constructive characteristics.

01.20.1 Standard

Safety pattern code: S3 as per EN 837-1.
Accuracy class: 1,6 as per EN 837-1.
Ambient temperature: -25...+65 °C.
Process fluid temperature: max +100 °C .
Working pressure: max 75% of the full scale value .
Over pressure limit: (referred to the full scale value):
25% for pressure range - 100 bar;
15% for pressure range > 100 bar.
Protection: IP 55 as per IEC 529.
Socket material: AISI 316 st.st.
Elastic element: AISI 316L st. st. seamless tube.
Welding: AISI 316 TIG.
Case: AISI 304 st.st.
Ring: AISI 304 st.st., bayonet lock.
Blow out disk: ABS (AISI 304 st.st on request for radial connection type).
Window: safety glass.
Movement: stainless steel.
Dial: ABS, white with black markings.
Special dials: ranges different from standard, or custom artwork, available on request.
Pointer: aluminium, micrometric adjustable.
Gasket: silicon rubber.

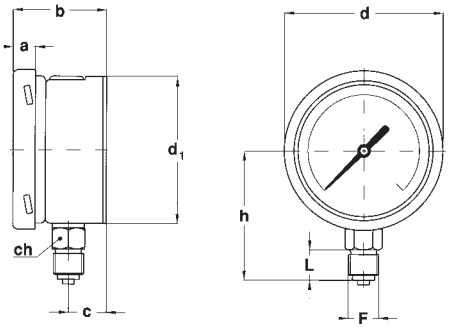
01.20.2 Fillable

Protection: IP 67 as per IEC 529.
Pointer: aluminium, black.
Note: suitable for glycerine filling; other filling fluids available on request (see OPTIONS table).
Other features: as type 01.20.1 (as type 01.20.3, when filled).

01.20.3 Liquid filled

Ambient temperature: max +65 °C, (see DAMPING LIQUIDS table for further information).
Process temperature: max +65 °C.
Protection: IP 67 as per IEC 529.
Pointer: aluminium, black.
Damping liquids: glycerine 98% (optional silicon oil, Fluorolube).
Other features: as type 01.20.1 Standard.

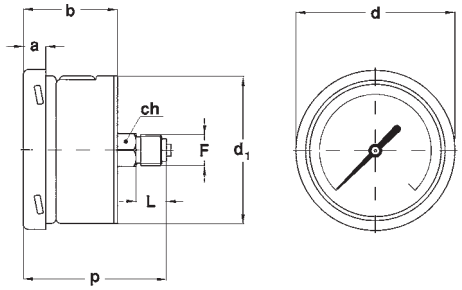
TYPES, DIMENSIONS AND WEIGHTS



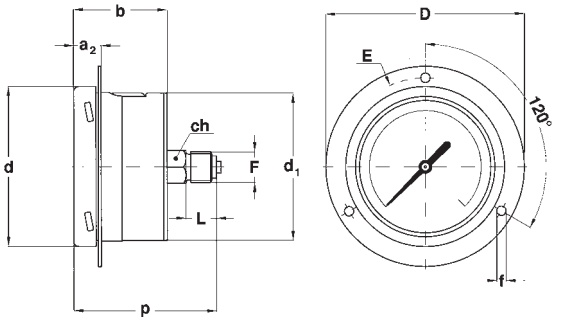
TYPE A
stem mounting;
lower connection.

Type	a	b	c	d	d_1	Weight (Kg.)
A	10	40	16,7	68	62,6	0,2

(dimensions in mm.)



TYPE D
stem mounting;
back connection.



TYPE E
flush mounting, front flange;
back connection.

Type	a	a_2	b	d	d_1	f	D	E	Weight (Kg.)
D-E	10	11,5	40	68	62,6	3,6	85	75	0,23

(dimensions in mm.)

PROCESS CONNECTION

F	Code	L	ch	h	p
1/8" BSP	**11M**	10	14 x 10	63	63
1/8" NPT	**13M**	10	14 x 10	63	63
1/4" BSP	**21M**	13	14 x 9	63	63
1/4" NPT	**23M**	13	14 x 8	63	63
1/4" BSP tapered	**22M**	13	14 x 8	63	63

(dimensions in mm.)

DAMPING LIQUIDS

Damping liquids	Limit ambient temperature
Glycerine 98%	+15...+65 °C (+60...+150 °F)
Silicon oil	-45...+65 °C (-50...+150 °F)
"Fluorolube"	-60...+65 °C (-76...+150 °F)

Glycerine or silicone should not be used with highly oxidizing agents such as oxygen, chlorine, nitric acid or hydrogen peroxide, because of danger of spontaneous chemical reaction, inflammability or explosion. The use of fluorinates fluid is recommended in these cases.

RANGES

PRESSURE

TAB. 1

RANGE	bar	kPa	MPa	bar ext.	bar ext.	bar ext.
				psi int.	kPa int.	MPa int.
0...1	✦		✦	✦	✦	
0...1,6	✦		✦	✦	✦	
0...2,5	✦		✦	✦	✦	
0...4	✦		✦	✦	✦	
0...6	✦		✦	✦	✦	
0...10	✦		✦	✦		✦
0...16	✦		✦	✦		✦
0...25	✦		✦	✦		✦
0...40	✦		✦	✦		✦
0...60	✦		✦	✦		✦
0...100	✦	✦	✦	✦		✦
0...160	✦	✦		✦		✦
0...250	✦	✦		✦		✦
0...300	✦			✦		
0...400	✦	✦		✦		✦
0...600	✦	✦		✦		✦
0...1000	✦	✦		✦		✦
0...1600		✦				
0...2500		✦				

TAB. 2

RANGE	psi	psi int.	psi ext.	psi ext.
		kPa ext.	bar int.	Kg/cm^2 int.
0...15	✦	✦	✦	✦
0...30	✦	✦	✦	✦
0...60	✦	✦	✦	✦
0...100	✦	✦	✦	✦
0...160	✦	✦	✦	✦
0...200	✦	✦	✦	✦
0...300	✦	✦	✦	✦
0...400	✦	✦	✦	✦
0...600	✦	✦	✦	✦
0...1000	✦	✦	✦	✦
0...1500	✦	✦	✦	✦
0...2000	✦	✦	✦	✦
0...3000	✦	✦	✦	✦
0...4000	✦	✦	✦	✦
0...5000	✦	✦	✦	✦
0...6000	✦	✦	✦	✦
0...10000	✦	✦	✦	✦
0...15000	✦	✦	✦	✦

VACUUM & COMPOUND

TAB. 3

RANGE	bar	kPa	bar ext.	bar ext.
			psi int.*	kPa int.
-1...0	✦		✦	✦
-1...0,6	✦		✦	✦
-1...1,5	✦		✦	✦
-1...3	✦		✦	✦
-1...5	✦		✦	✦
-1...9	✦		✦	✦
-1...15	✦		✦	✦
-1...24	✦		✦	✦
-100...0		✦		
-100...150		✦		
-100...300		✦		
-100...500		✦		
-100...900		✦		
-100...1500		✦		

* vacuum unit of measurement: "inHg"

TAB. 4

RANGE	psi*	psi int.*	psi ext.*	psi ext.*
		kPa ext.	bar int.	Kg/cm^2 int.
-30...0	✦	✦	✦	✦
-30...15	✦	✦	✦	✦
-30...30	✦	✦	✦	✦
-30...150	✦		✦	

* vacuum unit of measurement: "inHg"

safety pressure gauge
all stainless steel, “solid-front” Type 01.20 - DS 63

OPTIONS

Description	Code	01.20.1	01.020.2	01.20.3
"Fluorolube" filling (4)	F30			✦
ABS blow out disk for radial connection type	FIX	✦	✦	✦
DIN pointer (not adjustable)	L05	✦	✦	✦
Suitable for filling with silicone and "Fluorolube" (4)	P01		✦	
Oxigen service M049	P02	✦	✦ (2)	✦ (1)
Aluminium dial (3)	Q03	✦	✦	✦
Black dial (3)	Q04	✦	✦	✦
AISI304 st.st. restrictor ø 0,7 mm.	S02	✦	✦	✦
Silicone filling (4)	S10			✦

(1) to be ordered with "Fluorolube" filling only (option F30).
(2) to be ordered with option "**P01**".
(3) minimum quantity N. 100.
(4) window gasket and blow out vent VITON.

HOW TO ORDER

	CODES & DESCRIPTION
01	01 - bourdon tube pressure gauges
20	20 - safety pressure gauges, “solid-front” MGS20
2	1 - dry version 2 - fillable version 3 - filled version
A	A - lower connection - stem mounting D - back connection - stem mounting E - back connection - flush mounting, front flange
C	C - DS63
2	1 - up to 2,5 bar 2 - from 4 to 40 bar 3 - over 40 bar
0/10 bar	see ranges table
21M	11M - 1/8" BSP 13M - 1/8" NPT 21M - 1/4" BSP 23M - 1/4" NPT 22M - 1/4" BSP tapered
P02	see options table

ACCESSORIES

Diaphragm seals: a complete range of diaphragm seals are available with a choice of materials of construction. Specifically for corrosive and difficult process fluids plus hygienic applications. For further details refer to our catalogue sheet.

Adjustable over-load protector: this is useful for installations which may generate high overpressures; the pressure gauges is automatically excluded at the pre-set pressure and cut in again automatically when the operating pressure returns to normal. For further details refer to our catalogue 05.48A-49A.

Valves: for construction details and for use limits refer to our catalogue 05.

Pigtail and siphons: recommended with temperatures of 65° C (150° F) or over. For further details refer to our catalogue 05.5xx.

Pressure snubbers: for further details refer to our catalogue 05.450-470.

All st.st. Safety Pressure Gauges
SOLID FRONT
Typ 01.20 - DS 100 and 150

01.20

PED 97/23/CE
ATEX 94/9/CE

ME 48
Gost R Pattern Approval

These instruments are built in conformity with the construction and safety specifications of **EN 837-1/S3** e **ANSI B40.1**.
In case of leaks or break of the elastic element, the operator is protected by a solid separating wall placed on the front of the instrument and by the blow out back. They are usually used in the food, process, pharmaceutical, petrochemical industries and in conventional and nuclear power plants. The TIG welding between the case and the process socket, strengthens the instrument and assures a better tight in case of dampening fluid. The advantages of filling the case of the instrument with a dampening fluid are: reduced pointer fluctuation, reduced wear of rotating parts of the movement when pulsant vibrations and pulsations occur. Moreover condensation and corrosive atmospheres which could damage the internal parts are prevented.

Functional and constructive characteristics.

01.20.1 dry, not filled

Accuracy class: 1 as per EN 837-1.
Ambient temperature: -25...+65 °C.
Process fluid temperature: -40...+150 °C.
Working pressure (referred to the full scale value)**:** max 90% for pulsating pressure; 100% for static pressure.
Over pressure limit: 30% of full scale value.
Special over pressure limit: 50% of full scale value, for pressure ranges - 400 bar (max 1 hour) as option.
Protection: IP 55 as per IEC 529.
Socket material: AISI 316L st.st.
Elastic element: AISI 316L st. st. seamless tube.
Case: AISI 304 st.st.
Ring: AISI 304 st.st., bayonet lock.
Blow out disk: AISI 304 st.st.
Window: safety glass.
Movement: stainless steel with internal limit stops for minimum and maximum pressure.
Dial: aluminium, white with black markings and "▼" symbol at the edges of the scale value.
Special dial: ranges different from standard, custom artworks available on request.
Pointer: aluminium, micrometric adjustable, black painted
Gasket, blow out disk and filling plug: EPDM/NBR.

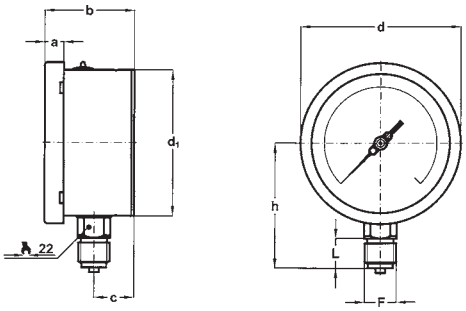
01.20.2 Fillable - Lower connection type only

Protection: IP 67 as per IEC 529.
Pointer: aluminium, non-adjustable, black painted.
Note: suitable for glycerine filling, silicone oil/Fluorolube filling available on request (code P01).
Other features: as type 01.20.1 (as type 01.20.3, when filled).

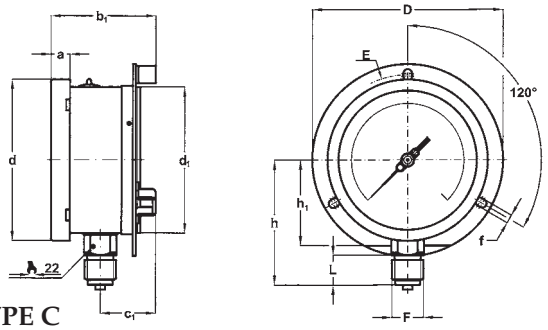
01.20.3 Liquid filled - Lower connection type only

Ambient temperature: max +65°C, (see DAMPING LIQUIDS table on page 2 for further information)
Process fluid temperature: max +65 °C.
Protection: IP 67 as per IEC 529.
Damping liquids: glycerine 98%, silicone oil (code S10) or Fluorolube fluid (code F30) on request.
Pointer: aluminium, non-adjustable, black painted.
Other features: as type 01.20.1

TYPE, DIMENSIONS AND WEIGHTS (dimensions : mm)

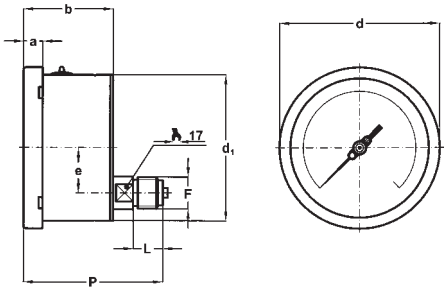


TYPE A
stem mounting;
lower connection.

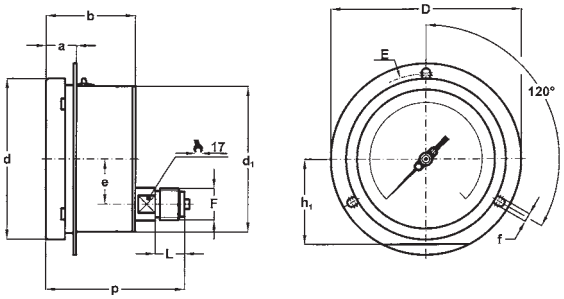


TYPE C
surface mounting, back flange;
lower connection.

DS	TYPE	a	b	b_1	c	c_1	d	d_1	h_1	f	D	E	Weight 01.20.1	Weight 01.20.3
100	A-C	13	62,5	72,5	29,5	39,5	110,6	101	-	6	132	116...120	0,65 kg	1,08 kg
150	A-C	15	64	75,5	30	41,5	161	150,5	85	6	190	168...178	1,2 kg	2 kg



TYPE D - applicable on 01.20.1 only
stem mounting;
back connection.



TYPE E -applicable on 01.20.1 only
fush mounting, front flange;
back connection.

DS	TYPE	a	a_2	b	d	d_1	e	f	h_1	D	E	Weight 01.20.1
100	D-E	13	20	62,5	110,6	101	31	6	-	132	116...120	0,7 kg
150	D-E	15	25,5	64	161	150,5	31	6	85	190	168...178	1,15 kg

PROCESS CONNECTIONS

F	Code	DS 100			DS 150		
		L	h	p	L	h	p
1/4" BSP	**21M**	13	79	93,5	13	110	94
1/4-18 NPT	**23M**	15	81	95,5	15	112	96
3/8" BSP	**31M**	16	86	95,5	16	113	96
3/8-18 NPT	**33M**	16	86	95,5	16	113	96
1/2" BSP	**41M**	20	86	95,5	20	117	96
G 1/2-ISO 7/1	**42M**	20	86	95,5	20	117	96
1/2-14 NPT	**43M**	20	86	95,5	20	117	96
M 20 x 1,5	**97M**	20	86	95,5	20	117	96

DAMPING LIQUIDS

Damping liquids	Ambient temperatur
Glicerine 98%	+15...+65 °C (+60...+150 °F)
Silicon oil	-45...+65 °C (-50...+150 °F)
"Fluorolube"	-60...+65 °C (-76...+150 °F)

Glicerine or silicone should not be used with highly oxidizing agents such as oxygen, chlorine, nitric acid or hydrogen peroxide, because of danger of spontaneous chemical reaction, inflammability or explosion. The use of fluorinates fluid is recommended in these cases.

RANGES - "E" = DS 100; "G" = DS 150.

PRESSURE

TAB. 1

RANGE	bar	kPa	MPa	bar ext.	bar ext.	bar ext.
				psi int.	kPa int.	MPa int.
0...0,6 (1)	E G			E G	E G	
0...1	E G		E G	E G	E G	
0...1,6	E G		E G	E G	E G	
0...2,5	E G		E G	E G	E G	
0...4	E G		E G	E G	E G	
0...6	E G		E G	E G	E G	
0...10	E G		E G	E G		E G
0...16	E G		E G	E G		E G
0...25	E G		E G	E G		E G
0...40	E G		E G	E G		E G
0...60	E G	E G (1)	E G	E G		E G
0...100	E G	E G	E G	E G		E G
0...160	E G	E G	E G	E G		E G
0...250	E G	E G		E G		E G
0...300	E G					
0...400	E G	E G		E G		E G
0...600	E G	E G		E G		E G
0...1000	E G	E G		E G		E G
0...1600	E G	E G		E G		E G
0...2500		E G				

(1) not available for 1.20.3

TAB. 2

RANGE	psi	psi int.	psi ext.	psi ext.
		kPa ext.	bar int.	Kg/cm^2 int.
0...15	E G	E G	E G	E G
0...30	E G	E G	E G	E G
0...60	E G	E G	E G	E G
0...100	E G	E G	E G	E G
0...160	E G	E G	E G	E G
0...200	E G	E G	E G	E G
0...300	E G	E G	E G	E G
0...400	E G	E G	E G	E G
0...600	E G	E G	E G	E G
0...1000	E G	E G	E G	E G
0...1500	E G	E G	E G	E G
0...2000	E G	E G	E G	E G
0...3000	E G	E G	E G	E G
0...4000	E G	E G	E G	E G
0...5000	E G	E G	E G	E G
0...6000	E G	E G	E G	E G
0...10000	E G	E G	E G	E G
0...15000	E G	E G	E G	E G
0...20000	E G	E G	E G	E G
0...30000 (1)	EG	EG	EG	EG

(1) working pressure: max 75% of the full scale value
over pressure limit: 10% of the full scale value

TAB. 3 - Receiver

External	Internal	Internal
	0÷100 linear	**0÷10 quadratic**
0,2...1 bar	E G	E G
0,2...1 kg/cmq	E G	E G
3...15 psi	E G	E G
20...100 kPa	E G	E G

VACUUM & COMPOUND

TAB. 4

RANGE	bar	kPa	bar ext.	bar ext.
			psi int.*	kPa int.
-1...0	E G		E G	E G
-1...0,6	E G		E G	E G
-1...1,5	E G		E G	E G
-1...3	E G		E G	E G
-1...5	E G		E G	E G
-1...9	E G		E G	E G
-1...15	E G		E G	E G
-1...24	E G		E G	E G
-100...0		E G		
-100...150		E G		
-100...300		E G		
-100...500		E G		
-100...900		E G		
-100...1500		E G		
-100...2400		E		

* vacuum unit of measurement: "inHg"

TAB. 5

RANGE	psi*	psi int.*	psi ext.*	psi ext.*
		kPa ext.	bar int.	Kg/cm^2 int.
-30...0	E G	E G	E G	E G
-30...15	E G	E G	E G	E G
-30...30	E G	E G	E G	E G
-30...150	E G	/	EG	/

* vacuum unit of measurement: "inHg"

TAB. 6 - NH3

bar external	NH3 internal	
-1...5	-70...+9°C	E
-1...9	-70...+25°C	E
-1...15	-70...+40°C	E
-1...24	-70...+56°C	E

OPTIONS - "E" = DS 100; "G" = DS 150.

DESCRIPTION	CODE	01.20.1 (dry)	01.20.2 (fillable)	01.20.3 (filled)
ATEX version II 2G c	**2G1**	*Constructive characteristics and ordering guide please refere to the relevant ATEX version data sheet.*		
ATEX version II 2GD c	**2D1**			
AISI 316 st. st. case and ring	**C40**	E G	E G	E G
"Fluorolube" filling (6)	**F30**			E G
Accuracy class: 0,6 as per EN 837-1 (1)	**K06**	E G	E G (2)	
Non adjustable pointer	**L01**	E G		
Adjustable pointer	**L02**		E G	E G
DIN pointer	**L05**	E	E	E
Suitable for filling with silicon and "Fluorolube" (6)	**P01**		E G	
Oxigen service (5)	**P02**	E G	E G (3)	E G (4)
Compensating device	**P03**	E	E	E
Without restrictor	**S03**	E G	E G	E G
Silicon filling (6)	**S10**			E G
Overpressure 50% of the scale value	**SVP**	E G	E G	E G
Tropicalization	**T01**	E G	E G	E G
Stainless steel label	**T25**	E G	E G	E G

(1) for ranges up to 400 bar/6000 PSI, not available for receivers

(2) to be ordered with option L02

(3) to be ordered with option P01

(4) to be ordered with option F30

(5) for ranges up to 1000 bar

(6) window gasket: silicone rubber; filling plug & blowout disk gasket: VITON

ORDER-CODE

1	1- bourdon tube pressure gauges
20	20 - safety pressure gauge "solid-front"
2	1 - dry version 2 - fillable version 3 - filled version
C	A - lower connection - stem mounting C - lower connection - surface mounting, back flange D - back connection - stem mounting E - back connection - flush mounting, front flange
E	E - DS 100 G - DS 150
2	1 - up to 2,5 bar 2 - from 4 to 40 bar 3 - over 40 bar
0/10 bar	see ranges table
41M	see process connections table
C40	see options table

ACCESSORIES

Diaphragm seals: a complete range of diaphragm seals are available with a choice of materials of construction. Specifically for corrosive and difficult process fluids plus hygienic applications. For further details refer to relevant data sheets.

Adjustable over-load protector: this is useful for installations which may generate high overpressures; the pressure gauges is automatically excluded at the pre-set pressure and cut in again automatically when the operating pressure returns to normal. For further details refer to relevant data sheet.

Valves: for construction details and for use limits refer to relevant data sheet.

Pigtail and siphons: recommended with temperatures of 65° C (150° F) or over. For further details refer to relevant data sheet.

Pressure snubbers: for further details refer to relevant data sheet.

All st.st. Safety Pressure Gauge SOLID FRONT NACE MR 01.03 version

01.40

Type 01.40 - DS 100 and 150

PED 97/23/CE
ATEX 94/9/CE

These instruments are built in conformity with the construction and safety specifications of EN 837-1/S3 e ANSI B40.1. In case of leaks or break of the elastic element, the operator is protected by a solid separating wall placed on the front of the instrument and by the blow out back. They are usually used in the petrochemical industry; they are built to resist to the most severe conditions created by H_2S, by the environment and for those fluids, which have high viscosity and do not crystallize. The TIG welding between the case and the process socket, strengthens the instrument and assures a better tight in case of dampening fluid The advantages of filling the case of the instrument with a dampening fluid are: reduced pointer fluctuation, reduced wear of rotating parts of the movement when pulsant vibrations and pulsations occur. Moreover condensation and corrosive atmospheres which could damage the internal parts.

Functional and constructive characteristics

1.40.1 - Dry, not fillable

Accuracy class: 1 as per EN 837-1.
Ambient temperature -25...+65 °C.
Process fluid temperature: -40...+150 °C.
Working pressure (referred to the full scale value)**:** max 90% for pulsating pressure; 100% for static pressure.
Over pressure limit: 30% of full scale value.
Protection: IP 55 as per IEC 529.
Socket material: AISI 316L st.st., MONEL 400 available on request (code E07).
Elastic element: MONEL 400 seamless tube.
Leak Test: Helium Test leak Search (max $1x10^{-7}$ mbar x l x s^{-1}).
Case: AISI 304 st.st.
Ring: AISI 304 st.st. , bayonet lock.
Blow out disk: AISI 304 st.st.
Window: safety glass.
Movement: stainless steel with internal limit stops for minimum and maximum pressure.
Dial: aluminium, white with black markings and "▼ " symbol at the edges of the scale value.
Special dial: ranges different from standard, custom artworks available on request.
Pointer: aluminium, micrometric adjustable, black painted.
Gasket, blow out disk and filling plug: EPDM/NBR.

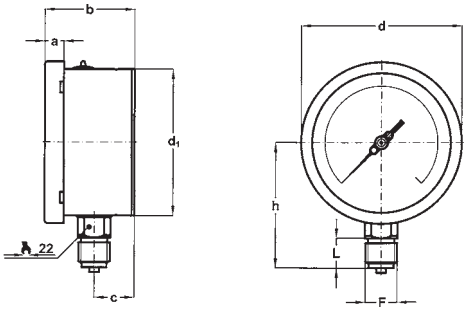
1.40.2 - Fillable - Lower connection type only

Protection: IP 67 as per IEC 529.
Note: suitable for glycerine filling, silicone oil/Fluorolube filling available on request (code P01).
Other features: as type 01.40.1 (as type 01.40.3, when filled).

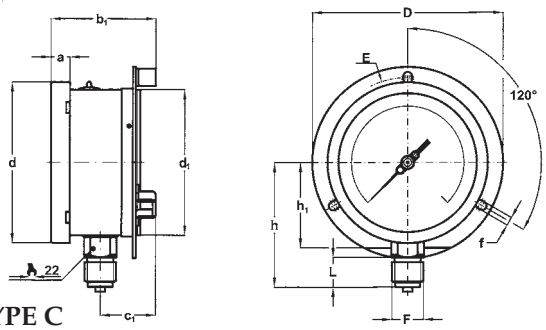
1.40.3 - Liquid filled - Lower connection type only

Ambient temperature: max +65 °C, (see DAMPING LIQUIDS table on page 3 for further information)
Process fluid temperature: max +65 °C.
Protection: IP 67 as per IEC 529.
Damping liquids: glycerine 98%, silicone oil (code S10) or Fluorolube fluid (code F30) on request.
Other features: as type 1.40.1 Standard.

TYPE, DIMENSIONS AND WEIGHTS (dimensions : mm)

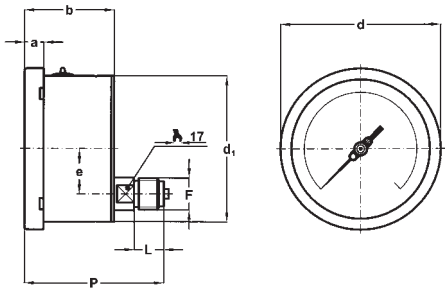


TYPE A
stem mounting;
lower connection.

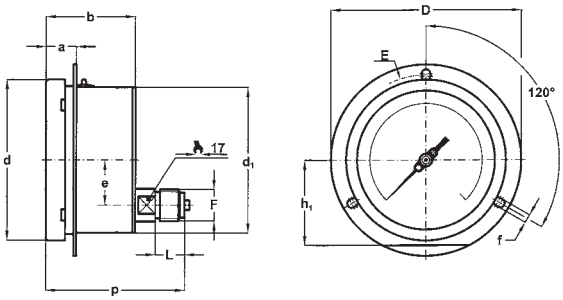


TYPE C
surface mounting, back flange;
lower connection.

DS	TYPE	a	b	b_1	c	c_1	d	d_1	h_1	f	D	E	Weight 01.40.1	Weight 01.40.3
100	A-C	13	62,5	72,5	29,5	39,5	110,6	101	-	6	132	116...120	0,65 kg	1,08 kg
150	A-C	15	64	75,5	30	41,5	161	150,5	85	6	190	168...178	1,2 kg	2 kg



TYPE D - applicable on 01.40.1 only
stem mounting;
back connection.



TYPE E -applicable on 01.40.1 only
fush mounting, front flange;
back connection.

DS	TYPE	a	a_2	b	d	d_1	e	f	h_1	D	E	Weight
100	D-E	13	20	62,5	110,6	101	31	6	-	132	116...120	0,7 kg
150	D-E	15	25,5	64	161	150,5	31	6	85	190	168...178	1,15 kg

PROCESS CONNECTIONS

F	Code	DS 100			DS 150		
		L	h	p	L	h	p
1/2" BSP	**41M**	20	86	95,5	20	117	96
1/2-14 NPT	**43M**	20	86	95,5	20	117	96

RANGES - "E" = DS 100; "G" = DS 150.

PRESSURE

TAB. 1

RANGE	bar	kPa	MPa	bar ext.	bar ext.	bar ext.
				psi int.	kPa int.	MPa int.
0...1	E G		E G	E G	E G	
0...1,6	E G		E G	E G	E G	
0...2,5	E G		E G	E G	E G	
0...4	E G		E G	E G	E G	
0...6	E G		E G	E G	E G	
0...10	E G		E G	E G		E G
0...16	E G		E G	E G		E G
0...25	E G		E G	E G		E G
0...40	E G		E G	E G		E G
0...60	E G		E G	E G		E G
0...100	E G	E G		E G		E G
0...160	E G	E G		E G		E G
0...250	E G	E G		E G		E G
0...300	E G					
0...400	E G	E G		E G		E G
0...600	E G	E G		E G		E G

TAB. 2

RANGE	psi	psi int.	psi ext.	psi ext.
		kPa ext.	bar int.	kg/cm ^{2} int.
0...15	E G	E G	E G	E G
0...30	E G	E G	E G	E G
0...60	E G	E G	E G	E G
0...100	E G	E G	E G	E G
0...160	E G	E G	E G	E G
0...200	E G	E G	E G	E G
0...300	E G	E G	E G	E G
0...400	E G	E G	E G	E G
0...600	E G	E G	E G	E G
0...1000	E G	E G	E G	E G
0...1500	E G	E G	E G	E G
0...2000	E G	E G	E G	E G
0...3000	E G	E G	E G	E G
0...4000	E G	E G	E G	E G
0...6000	E G	E G	E G	E G
0...10000	E G	E G	E G	E G

VACUUM & COMPOUND

TAB. 3

RANGE	bar	kPa	bar ext.	bar ext.
			psi int.*	kPa int.
-1...0	E G		E G	E G
-1...0,6	E G		E G	E G
-1...1,5	E G		E G	E G
-1...3	E G		E G	E G
-1...5	E G		E G	E G
-1...9	E G		E G	E G
-1...15	E G		E G	E G
-1...24	E G		E G	E G
-100...0		E G		
-100...150		E G		
-100...300		E G		
-100...500		E G		
-100...900		E G		
-100...1500		E G		
-100...2400		E		

* vacuum unit of measurement: "inHg"

TAB. 4

RANGE	psi*	psi int.*	psi ext.*	psi ext.*
		kPa ext.	bar int.	kg/cm ^{2} int.
-30...0	E G	E G	E G	E G
-30...15	E G	E G	E G	E G
-30...30	E G	E G	E G	E G
-30...150	E G	/	EG	/

* vacuum unit of measurement: "inHg"

DAMPING LIQUIDS

Damping liquids	Ambient temperatur
Glicerine 98%	+15...+65 °C (+60...+150 °F)
Silicon oil	-45...+65 °C (-50...+150 °F)
"Fluorolube"	-60...+65 °C (-76...+150 °F)

Glicerine or silicone should not be used with highly oxidizing agents such as oxygen, chlorine, nitric acid or hydrogen peroxide, because of danger of spontaneous chemical reaction, inflammability or explosion. The use of fluorinates fluid is recommended in these cases.

OPTIONS - "E" = DS 100; "G" = DS 150.

DESCRIPTION	CODE	1.40.1 (standard)	1.40.2 (fillable)	1.40.3 (filled)
ATEX version II 2G c	**2G1**	*Constructive characteristics and ordering guide please refere to the relevant ATEX version data sheet.*		
ATEX version II 2GD c	**2D1**			
AISI 316 st. st. case and ring	**C40**	E G	E G	E G
MONEL 400 socket	**E07**	E G	E G	E G
NACE MR 01.03 version	**E30**	E G	E G	E G
"Fluorolube" filling (1)	**F30**			E G
Non adjustable pointer	**L01**	E G	E G	E G
DIN pointer	**L05**	E	E	E
Suitable for filling with silicon and "Fluorolube" (1)	**P01**		E G	
Oxigen service	**P02**	E G	E G (3)	E G (4)
Compensating device	**P03**	E	E	E
Without restrictor	**S03**	E G	E G	E G
Silicon filling (1)	**S10**			E G
Tropicalization	**T01**	E G	E G	E G
Stainless steel label	**T25**	E G	E G	E G
Restrictor 0,7 mm (2)	**V11**	STD	STD	STD

(1) window gasket: silicone rubber; filling plug & blowout disk gasket: VITON
(2) not available with E07 option
(3) to be ordered with option P01
(4) to be ordered with option F30

ORDER-CODE:

01	01- bourdon tube pressure gauges
40	40 - safety pressure gauge (NACE MR 01.03)
2	1 - dry, not fillable 2 - fillable version 3 - filled version
C	A - lower connection - stem mounting C - lower connection - surface mounting, back flange D - back connection - stem mounting E - back connection - flush mounting, front flange
E	E - DS 100 G - DS 150
2	1 - up to 2,5 bar 2 - from 4 to 40 bar 3 - over 40 bar
0/10 bar	see ranges table
41M	see process connections table
C40	see options table

ACCESSORIES

Diaphragm seals: a complete range of diaphragm seals are available with a choice of materials of construction. Specifically for corrosive and difficult process fluids plus hygienic applications. For further details refer to relevant data sheets.

Adjustable over-load protector: this is useful for installations which may generate high overpressures; the pressure gauges is automatically excluded at the pre-set pressure and cut in again automatically when the operating pressure returns to normal. For further details refer to relevant data sheet.

Valves: for construction details and for use limits refer to relevant data sheet.

Pigtail and siphons: recommended with temperatures of 65° C (150° F) or over. For further details refer to relevant data sheet.

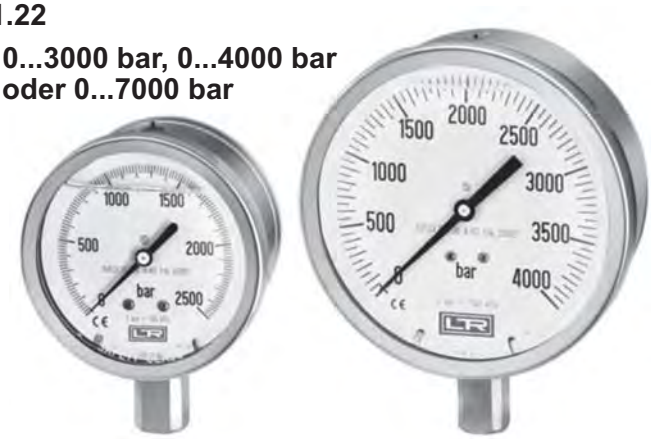
Pressure snubbers: for further details refer to relevant data sheet.

Rel. 20181017

Hochdruck-Sicherheits-Rohrfedermanometer 01.22

Messbereiche NG 100 und NG 160: 0...2500 bar, 0...3000 bar, 0...4000 bar
Messbereiche NG 160: 0...5000 bar; 0...6000 bar oder 0...7000 bar

ohne oder mit Glyzerinfüllung



Anwendung:
Hochdruck-Anwendungen, z.B. Wasserschneide-Maschinen, Hochdruckpumpen, Turbinen, u.v.m.

High Pressure Safety Pressure Gauges 01.22

Ranges DS 100 and DS 160: 0/30,000 PSI - 0/40,000 psi- 0/60,000 psi
Ranges DS 160: 0/70,000 PSI - 0/80,000 psi - 0/100,000 psi
dry or with dampening fluid filling

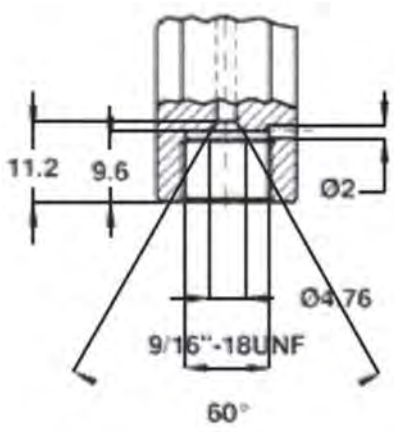
Service intended:
High pressure applications, such as water cutting machines, hydro blasting pumps and turbines, hydrodemolition.

Gehäuse: Bajonettringgehäuse aus Edelstahl AISI 304: NG 100 oder NG 160
Sicherheit: "S3" nach EN 837-1
Sockel: Edelstahl AISI 316L
Messwerk: Rohrfeder aus Duplex Edelstahl, nahtlos gezogen
Anschluss: Innengewinde mit Dichtkonus, wahlweise M16x1,5 oder 9/16-18 UNF
Zeigerwerk: Edelstahl, mit internen Min- und Max-Anschlag
Zeiger: Aluminium, schwarz (ungefüllte Ausführung bis 4000 bar: Mikrometerzeiger, verstellbar)
Skala: Aluminium, Grund weiß, Aufdruck schwarz, nach EN 837-1
Deckscheibe: Sicherheitsglas
Güteklasse: 1,0
Temperatureinfluss: ±0,4% / 10 K vom Bereich
Umgebungstemperatur: -25°C...+65°C bzw. 0...60°C bei glyzeringefüllter Ausführung
Mediumtemperatur: ungefüllt: -40...+150°C, Ausführung mit Glyzerinfüllung: 0...+65°C
Arbeitsdruck: 75% v.E. bei statischem Druck, 66% v.E. bei pulsierendem Druck
Überdrucksicherheit: kurzfristig 10% v.E. (nur bei Messbereichen bis 4000 bar)
Schutzart: IP 55 nach IEC 529 bei ungefüllter Ausführung, IP 67 nach IEC 529 bei gefüllter Ausführung bis 4000 bar, IP 65 ab 5000 bar
Anzeigebereiche: 0/2500 bar, 0/3000 bar, 0/4000 bar, 0/5000 bar, 0/6000 bar, 0/7000 bar, 0/30000 PSI/bar, 0/40000 PSI/bar, 0/60000 PSI/bar, 0/70000 psi, 0/80000 psi und 0/100000 psi

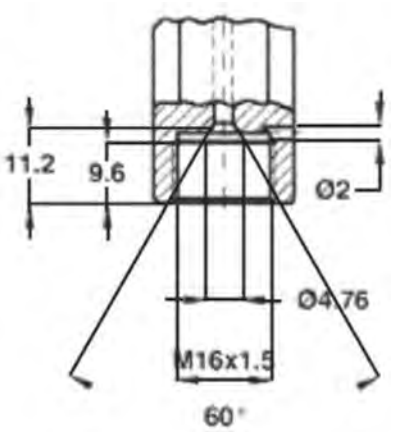
Case: *bajonet case in st.st. AISI 304*
Case diameter DS 100 (4") or DS 150 (6")
Safety: *"S3" as per EN 837-1*
Socket: *st.st. AISI 316L*
Burdon tube: *duplex st.st. seamless tube*
Process conn.: *female with sealing cone M 16 x 1.5 or 9/16-18 UNF*
Movement: *st.st. with internal limit stops for minimum and maximum pressure*
Pointer: *aluminium, black (dry version up to 4000 bar: micrometric adjustable pointer)*
Dial: *aluminium, white, with black markings*
Window: *safety glass*
Accuracy: *±1.0% of full scale value*
Thermal drift: *±0.4% / 10 K of full range*
Ambient temperature: *-25...+65°C (dry version) or 0...+60°C for glycerine filled version*
Process fluid temperature: *dry: -40...+150°C, glycerine filled version: 0...+65°C*
Working pressure: *75% of f.s. at static pressure, 66% of f.s. at pulsating pressure*
Over pressure limit: *10% of f.s. (temporary) (for pressure ranges up to 4000 bar only)*
Protection: *IP 55 as per IEC 529 for the dry version, IP 67 as per IEC 529 for the filled version up to 4000 bar, IP 65 for* ≥ 5000 bar
Pressure ranges: *0/2500 bar, 0/3000 bar, 0/4000 bar, 0/5000 bar, 0/6000 bar, 0/7000 bar, 0/30000 PSI/bar, 0/40000 PSI/bar, 0/60000 PSI/bar, 0/70000 psi, 0/80000 psi and 0/100000 psi*

01.22 Hochdruck-Rohrfedermanometer bis 7000 bar / 100000 psi
High Pressure gauges, up to 7,000 bar / 100,000 psi

Anschlussgewinde / *Process connection*:



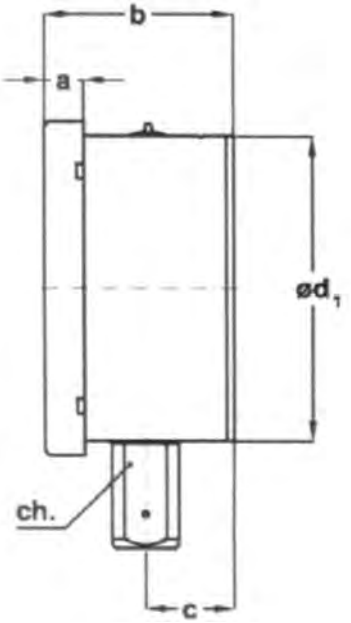
9/16"-18 UNF

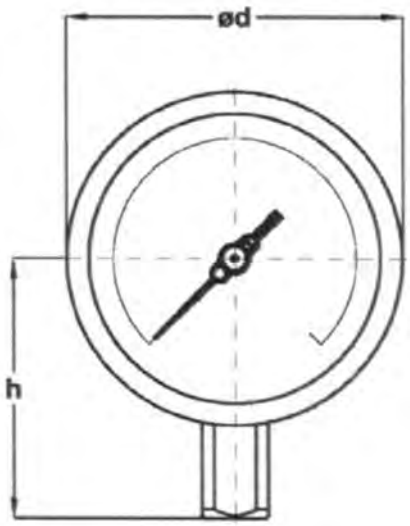


M16x1.5

Passend zu 1/4" F250C Autoclave, 1/4" HF4-HiP, 1/4" Newport AMINCO HP, 1/4" HP Butech

Abmessungen (mm) / *Dimensions (mm)*: Änderungen vorbehalten / *Subject to be changed without notice.*





NG/*DS*	a	b	c	d	d1	h	ch	Gewicht / *weight*
100 (4")	13	62,5	29,5	110,5	101	86	22	0,75 kg *)
160 (6")	15	64	30	161	150,5	110	22	1,20 kg *)

Ab 5000 bar (NG 160): leicht abweichende Maße
≥ 5000 bar (DS 160): different dimensions possible

*) bei gefüllter Version bitte 0,35 kg bei NG 100 bzw. 0,8 kg bei NG 160 hinzurechnen.
*) *for filled version please add 0.35 kg for DS 100 (4") and 0.8 kg for DS 150 (6").*

Optionen:

- Hinterer Befestigungsrand, für Wandmontage
- Gehäuse aus Edelstahl AISI 316
- Füllung mit Silikonöl (-30...+65°C), max. 4000 bar
- Für Bereiche ab 5000 bar (NG 160): 3-Loch-Frontring

Options:

- *Back flange for wall mounting*
- *Case in st.st. AISI 316*
- *Silicone oil filled case (-30...+65°C), max. 4000 bar*
- *For ranges ≥ 5000 bar (DS 160): 3-hole-front flange*

Safety Pressure Gauges "SOLID-FRONT" turret case

01.30

Type 01.30 - DS 125

These instruments are built in conformity with the construction and safety specifications of **ANSI B40.1**.
In case of leaks or break of the elastic element the operator is protected by a stainless steel safety cell solid front and by the blow-out back. They are usually used in the food, process, pharmaceutical and petrochemical industries and in conventional and nuclear power plants. The TIG welding between the safety cell and the process socket strengthens the instrument and assures a better tight in case of dampening fluid The advantages of filling the case of the instrument with a dampening fluid are: reduced pointer fluctuation, reduced wear of rotating parts of the movement when pulsant vibrations and pulsations occur. Moreover condensation and corrosive atmospheres which could damage the internal parts.

Functional and constructive characteristics.

01.30.2-A - Glycerine fillable - Lower connection only

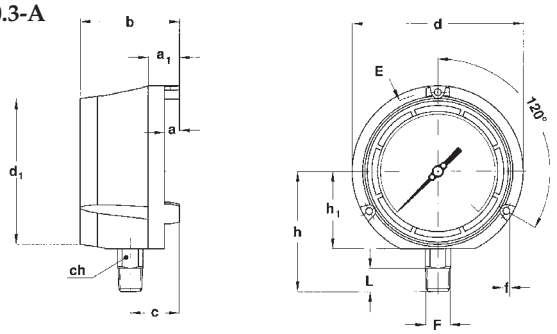
Accuracy: Grade 2A as per ASME B40.1 (±0,5% of span).
Ambient temperature: -25...+65°C.
Process temperature: -30...+150°C max.
Working pressure (referred to the full scale value)**:** max 90% for pulsating pressure; 100% for static pressure.
Over pressure limit: 30% of full scale value.
Protection: IP 65 as per IEC 529.
Socket material: AISI 316L st.st.
Elastic element: AISI 316L st.st. by drawn tube without welding.
Case and blow out disk: polyammide, fiberglass reinforced, UV stabilized.
Ring: polypropylene, fiberglass reinforced.
Safety cell: AISI 304 st.st.
Window: tempered glass.
Movement: stainless steel with internal limit stops for minimum and maximum pressure.
Dial: aluminium, white with black markings.
Pointer: aluminium, micrometric adjustable.
Gaskets: EPDM/NBR.
Note: suitable for glycerine filling, silicone oil/Fluorolube filling available on request (code P01).

01.30.3-A - Liquid filled - Lower connection only

Accuracy: Grade 1A as per ASME B40.1 (±1,0% of span).
Ambient temperature: max +65 °C, (see DAMPING LIQUIDS table on page 2 for further information)
Process temperature: max +65 °C.
Damping liquids: glycerine 98%, silicone oil (code S10) or Fluorolube fluid (code F30) on request.
Compensating device: EPDM.
Other features: as type 1.30.2.A.

TYPE, DIMENSIONS AND WEIGHTS

01.30.2-A
01.30.3-A



PROCESS CONNECTIONS

F	Code	L	h
1/4-18 NPT	**23M**	15	98,5
1/2-14 NPT	**43M**	20	103,5

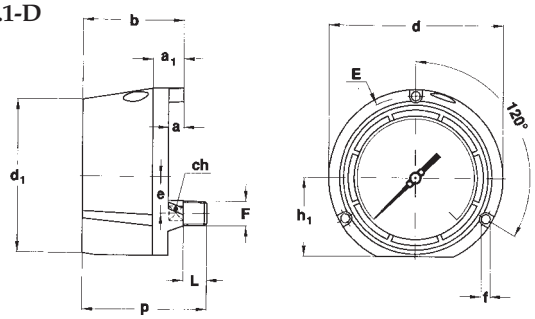
(dimensions : mm.)

TYPE A
stem mounting;
lower connection.

TYPE	a	a_1	b	c	d	d_1	E	f	h_1	ch	Weight 01.30.2-A	Weight 01.30.3-A
A	13	27	86	42	148	126	137	6,5	66,5	22	0,81 Kg	1,3 Kg

(dimensions : mm.)

01.30.1-D



Dry version - Back connection only

Protection: IP 55 as per IEC 529.
Case: phenolic resin.
Ring and blow out disk: polypropylene, fiberglass reinforced.
Safety cell: not available.

Other features: as type 01.30.2-A

TYPE D
stem mounting;
back connection.

TYPE	a	a_1	b	d	d_1	e	E	f	h_1	p	ch	Weight 01.30.1-D
D	13	27	86	148	129	31	137	6	66,5	106	17	1,0 Kg

(dimensions : mm.)

DAMPING LIQUIDS

Damping liquids	Ambient temperature
Gliceryne 98%	+15...+65 °C (+60...+150 °F)
Silicone oil	-45...+65 °C (-50...+150 °F)
"Fluorolube"	-60...+65 °C (-76...+150 °F)

Glicerine or silicone should not be used with highly oxidizing agents such as oxygen, chlorine, nitric acid or hydrogen peroxide, because of danger of spontaneous chemical reaction, inflammability or exposition. The use of fluorinates fluid is recommended in these cases.

RANGES

PRESSURE

TAB. 1

RANGE	bar	kPa	MPa	bar ext.
				psi int.
0÷0,6	✦(1)		✦	✦(1)
0÷	✦		✦	✦
0÷1,6	✦		✦	✦
0÷2,5	✦		✦	✦
0÷	✦		✦	✦
0÷	✦		✦	✦
0÷10	✦		✦	✦
0÷16	✦		✦	✦
0÷25	✦		✦	✦
0÷40	✦		✦	✦
0÷60	✦	✦(1)	✦	✦
0÷100	✦	✦	✦ (3)	✦
0÷160	✦	✦	✦ (3)	✦
0÷250	✦	✦		✦
0÷300	✦			✦
0÷400	✦	✦		✦
0÷600	✦	✦		✦
0÷1000	✦ (3)	✦		✦ (3)
0÷1600	✦ (3)	✦		✦ (3)
0÷2500		✦		

TAB. 2

RANGE	psi	psi int.	psi ext.
		kPa ext.	bar int.
0÷15	✦	✦	✦
0÷30	✦	✦	✦
0÷60	✦	✦	✦
0÷100	✦	✦	✦
0÷160	✦	✦	✦
0÷200	✦	✦	✦
0÷300	✦	✦	✦
0÷400	✦	✦	✦
0÷600	✦	✦	✦
0÷800	✦	✦	✦
0÷1000	✦	✦	✦
0÷1500	✦	✦	✦
0÷2000	✦	✦	✦
0÷3000	✦	✦	✦
0÷4000	✦	✦	✦
0÷5000	✦	✦	✦
0÷6000	✦	✦	✦
0÷10000	✦	✦	✦
0÷15000 (3)	✦	✦	✦
0÷20000 (3)	✦	✦	✦
0÷30000 (2)(3)	✦		✦

VACUUM & COMPOUND

TAB. 3

RANGE	bar	kPa
-1÷0	✦	
-1÷0,6	✦	
-1÷1,5	✦	
-1÷3	✦	
-1÷5	✦	
-1÷9	✦	
-1÷15	✦	
-1÷24	✦	
-100÷0		✦
-100÷150		✦
-100÷300		✦
-100÷500		✦
-100÷900		✦
-100÷1500		✦
-100÷2400		✦

TAB. 4

RANGE	psi*	psi int.*
		kPa ext.
-30/0	✦	✦
-30/15	✦	✦
-30/30	✦	✦
-30/60	✦	✦
-30/100	✦	✦
-30/150	✦	✦

* unit for vacuum: "inHg"

(1) not available for type 01.30.3 (filled)
(2) working pressure: max 75% of the full scale value; over pressure limit: 10% of the full scale value
(3) because of hysteresis, the downscale accuracy is max 1,2% of F.S.V.

OPTIONS

DESCRIPTION	Code	01.30.1-D	01.30.2-A	01.30.3-A
Panel mounting kit	**F11**	✦	✦	✦
"Fluorolube" filling (1)	**F30**			✦
Suitable for filling with Silicone oil and "Fluorolube" (1)	**P01**		✦	
Oxygen service	**P02**	✦	✦ (2)	✦ (3)
Blow out disk with compensating device	**FDP**		✦	
Without restrictor	**S03**	✦	✦	✦
Silicone oil filling (1)	**S10**			✦
Tropicalisation	**T01**	✦	✦	✦
Stainless steel label	**T25**	✦	✦	✦
Safety glass window	**T32**	✦	✦	✦

(1) gaskets: FPM
(2) to be ordered with option P01
(3) to be ordered with Fluorolube filling only (option F30)

ORDER-CODE:

01	1- bourdon tube pressure gauges
30	30 - Safety pressure gauge “solid-front”, turret case
2	1 - dry version (1) 2 - gliceryn fillable version 3 - filled version
A	A - stem mounting, lower connect. D - stem mounting, back connect. (1)
F	F - DS 125
2	1 - up to 2,5 bar 2 - from 4 to 40 bar 3 - over 40 bar
0/100 psi	see ranges table
43M	23M - 1/4-18 NPT 43M - 1/2-12 NPT
T32	see options table

(1) back connection is available as dry version only.

ACCESSORIES

Diaphragm seals: a complete range of diaphragm seals are available with a choice of materials of construction. Specifically for corrosive and difficult process fluids plus hygienic applications. For further details refer to relevant data sheets.

Adjustable over-load protector: this is useful for installations which may generate high overpressures; the pressure gauges is automatically excluded at the pre-set pressure and cut in again automatically when the operating pressure returns to normal. For further details refer to relevant data sheet.

Valves: for construction details and for use limits refer to relevant data sheet.

Pigtail and siphons: recommended with temperatures of 65° C (150° F) or over. For further details refer to relevant data sheet.

Pressure snubbers: for further details refer to relevant data sheet.

Safety Pressure Gauges SOLID-FRONT
NACE MR 01.03 - version
Type 01.60 - DS 125

01.60

These instruments are built in conformity with the construction and safety specifications of **ANSI B40.1**.
In case of leaks or break of the elastic element the operator is protected by a stainless steel safety cell solid front and by the blow-out back. They are usually used in the petrochemical industry. They are built to resist to the most severe conditions created by H_2S, by the environment and for those fluids which have high viscosity and do not crystallize. The TIG welding between the safety cell and the process socket strengthens the instrument and assures a better tight in case of dampening fluid The advantages of filling the case of the instrument with a dampening fluid are: reduced pointer fluctuation, reduced wear of rotating parts of the movement when pulsant vibrations and pulsations occur. Moreover condensation and corrosive atmospheres which could damage the internal parts.

Functional and constructive characteristics.

1.60.2.A - Glycerine fillable - Lower connection only

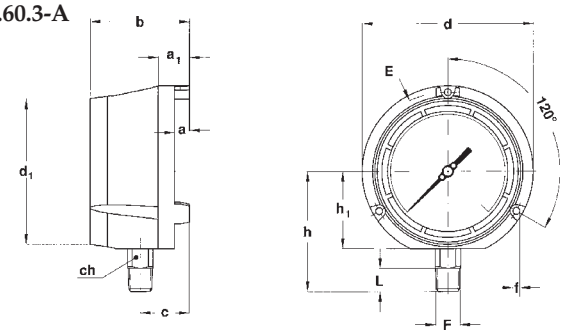
Accuracy: Grade 1A as per ASME B40.1 (±1,0% of span).
Ambient temperature: -25...+65°C.
Process temperature: -30...+150°C max.
Working pressure (referred to the full scale value)**:** max 90% for pulsating pressure; 100% for static pressure.
Over pressure limit: 30% of full scale value.
Protection: IP 65 as per IEC 529.
Socket material: AISI 316L st.st., MONEL 400 available on request (code E07).
Elastic element: MONEL 400 seamless tube.
Leak Test: Helium Test leak Search (max $1x10^{-7}$ mbar x l x s^{-1}).
Case and blow out disk: polyammide, fiberglass reinforced, UV stabilized.
Ring: polypropylene, fiberglass reinforced.
Safety cell: AISI 304 st.st.
Window: tempered glass.
Movement: stainless steel with internal limit stops for minimum and maximum pressure.
Dial: aluminium, white with black markings.
Pointer: aluminium, micrometric adjustable.
Gaskets: EPDM/NBR.
Note: suitable for glycerine filling, silicone oil/Fluorolube filling available on request (code P01).

1.60.3.A - Liquid filled - Lower connection only

Ambient temperature: max +65 °C, (see DAMPING LIQUIDS table on page 2 for further information)
Process temperature: max +65 °C.
Damping liquids: glycerine 98%, silicone oil (code S10) or Fluorolube fluid (code F30) on request.
Compensating device: EPDM.
Other features: as type 1.60.2.A.

TYPE, DIMENSIONS AND WEIGHTS

01.60.2-A
01.60.3-A



TYPE A
stem mounting;
lower connection.

PROCESS CONNECTIONS

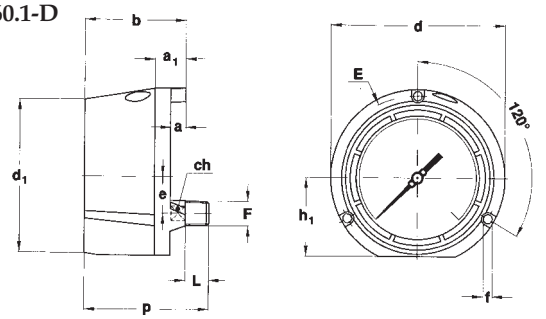
F	Code	L	h
1/4-18 NPT	**23M**	15	98,5
1/2-14 NPT	**43M**	20	103,5

(dimensions : mm.)

TYPE	a	a_1	b	c	d	d_1	E	f	h_1	ch	Weight 01.60.2-A	Weight 01.60.3-A
A	13	27	86	42	148	126	137	6,5	66,5	22	0,81 kg	1,3 kg

(dimensions : mm.)

01.60.1-D



Dry version - Back connection only

Protection: IP 55 as per IEC 529.
Case: phenolic resin.
Ring and blow out disk: polypropylene, fiberglass reinforced.
Safety cell: not available.

Other features: as type 01.60.2-A

TYPE D
stem mounting;
back connection.

TYPE	a	a_1	b	d	d_1	e	E	f	h_1	p	ch	Weight 01.60.1-D
D	13	27	86	148	129	31	137	6	66,5	106	17	1,0 kg

(dimensions : mm.)

DAMPING LIQUIDS

Damping liquids	Ambient temperature
Gliceryne 98%	+15...+65 °C (+60...+150 °F)
Silicone oil	-45...+65 °C (-50...+150 °F)
"Fluorolube"	-60...+65 °C (-76...+150 °F)

Glicerine or silicone should not be used with highly oxidizing agents such as oxygen, chlorine, nitric acid or hydrogen peroxide, because of danger of spontaneous chemical reaction, inflammability or exposition. The use of fluorinates fluid is recommended in these cases.

RANGES

PRESSURE

TAB. 1

RANGE	bar	kPa	MPa	bar ext.
				psi int.
0÷	✦		✦	✦
0÷1,6	✦		✦	✦
0÷2,5	✦		✦	✦
0÷	✦		✦	✦
0÷	✦		✦	✦
0÷10	✦		✦	✦
0÷16	✦		✦	✦
0÷25	✦		✦	✦
0÷40	✦		✦	✦
0÷60	✦		✦	✦
0÷100	✦	✦		✦
0÷160	✦	✦		✦
0÷250	✦	✦		✦
0÷300	✦			✦
0÷400	✦	✦		✦
0÷600	✦	✦		✦

TAB. 2

RANGE	psi	psi int.	psi ext.
		kPa ext.	bar int.
0÷15	✦	✦	✦
0÷30	✦	✦	✦
0÷60	✦	✦	✦
0÷100	✦	✦	✦
0÷160	✦	✦	✦
0÷200	✦	✦	✦
0÷300	✦	✦	✦
0÷400	✦	✦	✦
0÷600	✦	✦	✦
0÷800	✦	✦	✦
0÷1000	✦	✦	✦
0÷1500	✦	✦	✦
0÷2000	✦	✦	✦
0÷3000	✦	✦	✦
0÷4000	✦	✦	✦
0÷6000	✦	✦	✦
0÷10000	✦	✦	✦

VACUUM & COMPOUND

TAB. 3

RANGE	bar	kPa
-1÷0	✦	
-1÷0,6	✦	
-1÷1,5	✦	
-1÷3	✦	
-1÷5	✦	
-1÷9	✦	
-1÷15	✦	
-1÷24	✦	
-100÷0		✦
-100÷150		✦
-100÷300		✦
-100÷500		✦
-100÷900		✦
-100÷1500		✦
-100÷2400		✦

TAB. 4

RANGE	psi*	psi int.*
		kPa ext.
-30/0	✦	✦
-30/15	✦	✦
-30/30	✦	✦
-30/60	✦	✦
-30/100	✦	✦
-30/150	✦	✦

* unit for vacuum ranges: "inHg"

OPTIONS

DESCRIPTION	Code	01.60.1-D	01.60.2-A	01.60.3-A
MONEL 400 socket	E07	✦	✦	✦
NACE MR 01.03 version	E30	✦	✦	✦
Panel mounting kit	F11	✦	✦	✦
"Fluorolube" filling (1)	F30			✦
Suitable for filling with Silicone oil and "Fluorolube" (1)	P01		✦	
Oxygen service	P02	✦	✦ (2)	✦ (3)
Blow out disk with compensating device	FDP		✦	
Without restrictor (4)	S03	✦	✦	✦
Silicone oil filling (1)	S10			✦
Tropicalisation	T01	✦	✦	✦
Stainless steel label	T25	✦	✦	✦
Safety glass window	T32	✦	✦	✦

(1) gaskets: FPM
(2) to be ordered with option P01
(3) to be ordered with Fluorolube filling only (option F30)
(4) std with E07 option

ORDER-CODE:

01	01- bourdon tube pressure gauges
60	60 - safety pressure gauge (NACE MR 01.03)
2	1 - dry version (1) 2 - gliceryn fillable version 3 - filled version
A	A - stem mounting, lower connect. D - stem mounting, back connect. (1)
F	F - DS 125
2	1 - up to 2,5 bar 2 - from 4 to 40 bar 3 - over 40 bar
0/100 psi	see ranges table
43M	23M - 1/4-18 NPT 43M - 1/2-14 NPT
T32	see options table

(1) back connection is available as dry version only.

ACCESSORIES

Diaphragm seals: a complete range of diaphragm seals are available with a choice of materials of construction. Specifically for corrosive and difficult process fluids plus hygienic applications. For further details refer to relevant data sheets.

Adjustable over-load protector: this is useful for installations which may generate high overpressures; the pressure gauges is automatically excluded at the pre-set pressure and cut in again automatically when the operating pressure returns to normal. For further details refer to relevant data sheet.

Valves: for construction details and for use limits refer to relevant data sheet.

Pigtail and siphons: recommended with temperatures of 65° C (150° F) or over. For further details refer to relevant data sheet.

Pressure snubbers: for further details refer to relevant data sheet.