

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

# 01.40

## Type 01.40 - DS 100 and 150



**CE** 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<sub>2</sub>S, 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<sup>-7</sup> mbar x l x s<sup>-1</sup>).  
**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).

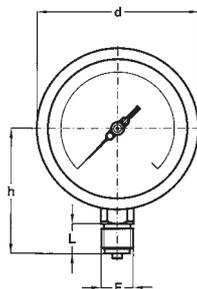
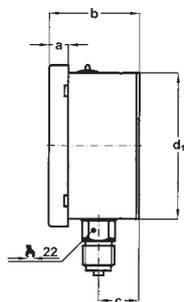
### 1.40.3 - Liquid filled - Lower connection type only

**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.

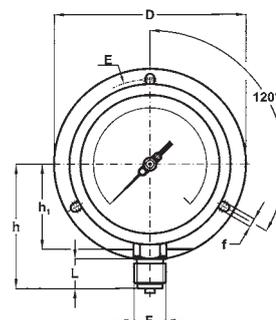
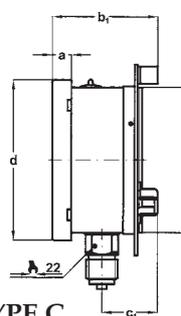


For use in potentially explosive atmospheres, instruments must be designed in conformity to ATEX 94/9/CE. This version is identified by code 2G1 and 2D1 and is shown on separate data sheet available on request.

**TYPE, DIMENSIONS AND WEIGHTS** (dimensions : mm)

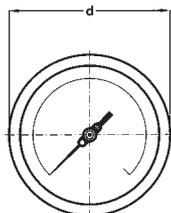
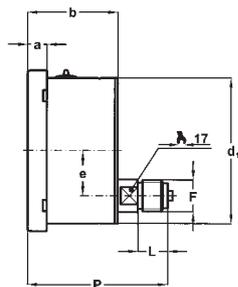


**TYPE A**  
stem mounting;  
lower connection.

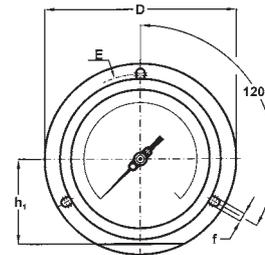
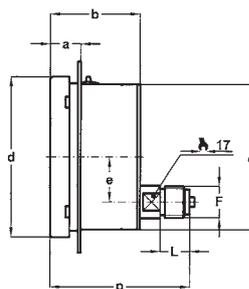


**TYPE C**  
surface mounting, back flange;  
lower connection.

DS	TYPE	a	b	b <sub>1</sub>	c	c <sub>1</sub>	d	d <sub>1</sub>	h <sub>1</sub>	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  
flush mounting, front flange;  
back connection.

DS	TYPE	a	a <sub>2</sub>	b	d	d <sub>1</sub>	e	f	h <sub>1</sub>	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

Type 01.40 - DS 100 and 150

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	EG		EG	EG	EG	
0...1,6	EG		EG	EG	EG	
0...2,5	EG		EG	EG	EG	
0...4	EG		EG	EG	EG	
0...6	EG		EG	EG	EG	
0...10	EG		EG	EG		EG
0...16	EG		EG	EG		EG
0...25	EG		EG	EG		EG
0...40	EG		EG	EG		EG
0...60	EG		EG	EG		EG
0...100	EG	EG		EG		EG
0...160	EG	EG		EG		EG
0...250	EG	EG		EG		EG
0...300	EG					
0...400	EG	EG		EG		EG
0...600	EG	EG		EG		EG

TAB. 2

RANGE	psi	psi int.	psi ext.	psi ext.
		kPa ext.	bar int.	kg/cm <sup>2</sup> int.
0...15	EG	EG	EG	EG
0...30	EG	EG	EG	EG
0...60	EG	EG	EG	EG
0...100	EG	EG	EG	EG
0...160	EG	EG	EG	EG
0...200	EG	EG	EG	EG
0...300	EG	EG	EG	EG
0...400	EG	EG	EG	EG
0...600	EG	EG	EG	EG
0...1000	EG	EG	EG	EG
0...1500	EG	EG	EG	EG
0...2000	EG	EG	EG	EG
0...3000	EG	EG	EG	EG
0...4000	EG	EG	EG	EG
0...6000	EG	EG	EG	EG
0...10000	EG	EG	EG	EG

VACUUM & COMPOUND

TAB. 3

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

\* vacuum unit of measurement: "inHg"

TAB. 4

RANGE	psi*	psi int.*	psi ext.*	psi ext.*
		kPa ext.	bar int.	kg/cm <sup>2</sup> int.
-30...0	EG	EG	EG	EG
-30...15	EG	EG	EG	EG
-30...30	EG	EG	EG	EG
-30...150	EG	/	EG	/

\* vacuum unit of measurement: "inHg"

DAMPING LIQUIDS

Damping liquids	Ambient temperatur
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 fluorinated 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	<i>Constructive characteristics and ordering guide please refer to the relevant ATEX version data sheet.</i>		
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	
Oxygen 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 &amp; 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.



**DRUCK & TEMPERATUR Leitenberger GmbH**  
Postfach 64 • D-72136 Kirchentellinsfurt • Germany  
Tel.: +49-7121-90920-0 • Fax: +49-7121-90920-99  
E-Mail: DT-Export@leitenberger.de  
INTERNET-Site: <http://www.Leitenberger.com>