

**Digital pressure transmitters
for hygienic application
with switches & RS485
series EDN.813**



Aluminum housing & st. steel wetted parts
Explosion flameproof version for Hazardous area
RS485 communication
2 relay switches

General features

- Pressure range from -1...0 bar to 0...40 bar
- Multi-functional LCD, 4 1/2-digit
- Various pressure scale units available
- Zero point, range adjustable
- Switch function, 2 switches
- RS485 digital communication

Application area

- Pharmaceutical and medicine industry
- Hydraulic and pneumatic control systems
- Pressure calibration, pressure checking
- Liquid pressure system and switch
- Semiconductor industry

General specification

Pressure ranges

From -1...0 bar, 0...1 bar to 0...40 bar
Min. span range ≥ 1 bar

Accuracy

included Linearity+Hysteresis+Repeatability
 $\pm 0.35\%$ FS / standard
 $\pm 0.15\%$ FS / option (pressure range, ≥ 2 bar)
** In case of pressure range, negative, then $\leq 1.0\%$ F.S

Overpressure

1.3 X pressure range

Output signals

4...20 mA, 2-wire system
0...10 V, 3-wire system
0...5 V, 3-wire system
1...5 V, 3-wire system
0.5...4.5 V, 3-wire system

Power supply

Available power: DC 12...30V

Temperature range

Operating: -20...80 °C
Ambient: -20...100 °C
Storage: -20...120 °C
Temperature compensating range: 0...80 °C

Thermal error

Zero thermal error: $\pm 0.75\%$ FS @ 25 °C (typ.)
Span thermal error: $\pm 0.75\%$ FS @ 25 °C (typ.)



series EDN.813 for hygienic application

Isolation > 100M Ω at 100 VDC

Electrical connection Flameproof, M12

Display LCD, 4 1/2 - digit
-1999...9999

Background Light white

Materials

Wetted parts: st. steel 316L
Body: Aluminum alloy

Adjustable pressure units

bar, mbar, MPa, kPa, psi, kg/cm², mmH₂O, inH₂O
mmHg, inHg, torr, atm

Operation

Pressure range, zero point adjustment,
characteristic curve and damping rate are
adjustable on the device

Special functions as options

- 2 relay switches
- RS485 digital communication
- High temperature cooling device with 3 fans
- Temperature compensation range: -20...+125 °C
- Various sanitary connections based on standards



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Technical specifications

Input pressure range

Normal pressure:
-1...0 bar up to 0...40 bar

Permissible static pressure:
1.3 x pressure range

Output signal / Supply

Current:
2-wire 4...20mA $V_s=12...30$ VDC

Voltage:
3-wire 0...10V $V_s=12...30$ VDC

Performance

¹Accuracy: $\leq \pm 0.3\% \text{FSO @ } 25^\circ\text{C}$
¹ accuracy according to IEC 60770 - limit point adjustment including non-linearity, hysteresis as well as repeatability

Permissible load / R_L
Current: 2-wire, $R_L \text{ max} = [(V_s - V_s \text{ min}) / 0.02 \text{A}] \Omega$
Voltage: 3-wire, $R_L \text{ min} = 10 \text{k}\Omega$

Influence effects:
Supply: 0.05%FSO/10V
Longterm stability: $\leq \pm 0.5\% \text{FS} / \text{year}$
Response time: $< 5 \text{ms}$

Thermal effects (Offset and Span) / Permissible temperatures

FS thermal error: $\pm 0.75\% \text{FS @ } 25^\circ\text{C}$, typical
Zero thermal error: $\pm 0.75\% \text{FS @ } 25^\circ\text{C}$, typical
Operating temperature: $-20...80^\circ\text{C}$
Compensated temperature: $0...60^\circ\text{C}$

Electrical protection

Electromagnetic compatibility:
Emission and immunity according to
EN 61326-2-3:20B CISPR II Group 1, Class A
EN IEC 61000-3-2:2019

Insulation: the transmitter is grounded via
the process connection

Mechanical stability

Vibration: No change at 10 g RMS (20...2000) Hz
Shock: 0.1 g (1m/s) Max.

Materials

Pressure port: stainless steel 316L
Housing / body: Aluminum alloy
Sensor diaphragm: stainless steel 316L
Wetted parts: stainless steel 316L

Miscellaneous

Current consumption
Signal output current max. 25mA

Current
4...20mA, 2-wire system
Signal output voltage max. 7mA

Voltage:
0...10V, 3-wire system
0...5V, 3-wire system
1...5V, 3-wire system
0.5...4.5V, 3-wire system

EMC Test report for CE conformance

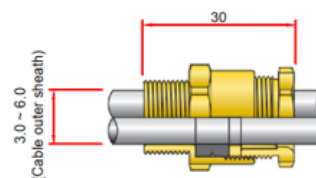
- EN 61326-2-3:2013 / Class A
- EN 61326-2-3: 2013 / IEC 61326-1:2012

Special features

- Protection against reverse polarity connections ($\pm 40 \text{VDC}$).
- High Noise Immunity Performance against Electrical Fast Transient (EFT) noise.
- High Precision against variations in ambient temperature. ($\pm 1.3\%$ in $-20...70^\circ\text{C}$).
- Wide pressure operating range. 30% lower than the minimum and 30% higher than the maximum.
- Protection against instantaneous surge voltage.
- Durable design for severe vibration.

Electrical connecting cable gland

- IP66
- Materials: Brass with nickel plated
- Cable outer : 3.0...6.0 mm



Ordering information

Model code

EDN.813 · [] · [] · [] · [] · [] · [] · B []

Output signal

O1	4...20mA / 2-wire system
O2	0...10V / 3-wire system
O3	0...5V / 3-wire system
O4	1...5V / 3-wire system
O5	0.5...4.5V / 3-wire system

Accuracy

A5	≤ ±0.35 % F.S
A8	≤ ±0.15 % F.S
A9	≤ ±0.1 % F.S

Electrical connection

F	Flameproof cable gland
M	M12 plug

Kind of sanitary diaphragm standard

TR	Tri-clamp ASME BPE, ISO1127
GA	Groove nut, APV-RJT
GT	Groove nut, threaded connection IDF ISO 2853
FM	Flush mounted, hygienic tubes
TC	Tri-Clamp, ASME BPE & ISO 1127 incl. cooling

Size of sanitary clamp

S1	Diaphragm DN20, 3/4"
S2	Diaphragm DN25, 1"
S3	Diaphragm DN38, 1 1/2"
S4	Diaphragm DN51, 2"
S5	Diaphragm DN63.5, 2.5"
S6	Diaphragm DN76.1, 3"

Oil filled with calibration

G	Glycerine
F	Food & Beverage oil

Pressure range code

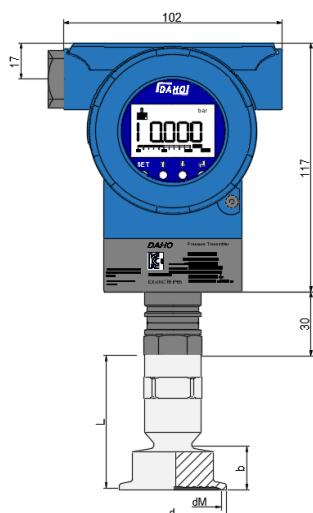
Code	Range / bar
R23	0...1
R24	0...1.2
R25	0...1.5
R26	0...1.6
R27	0...2
R28	0...2.5
R29	0...3
R30	0...4
R31	0...5
R32	0...6
R33	0...10
R34	0...15
R35	0...16
R36	0...20
R37	0...25
R38	0...40

How to Order

EDN.813.A5.O1.F.TR.S4.G.BR30

EDN.813, 4...20mA, TRI-clamp, Sanitary 2", Glycerine filled, 0...4 bar, ±0.35%, DMCC

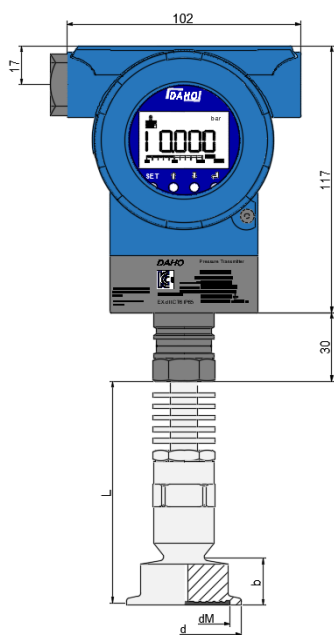
Pressure Transmitters with diaphragm seals based on ASME & ISO 1127



Tri-Clanmp, ASME BPE and ISO 1127

NPS	DN	L	Pipe outer Ø x wall thickness		dM	d
			ASME BPE	ISO 1127		
3/4"	20	63	19.05 x 1.2	26.9 x 1.6	16	25.4
1"	25		25.4 x 1.6	33.7 x 2	21	50.5
1 1/2"	38		38.1 x 1.6	42.4 x 2	30	64
2"	51		50.8 x 1.6	48.3 x 2	38	77.5
2 1/2"	63.5		63.5 x 1.6	60.3 x 2	52	91
3"	76.1		76.2 x 1.6	76.1 x 2	66	

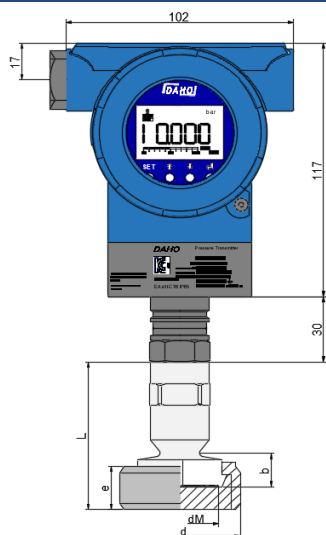
Pressure Transmitters with diaphragm seals a/w cooling device 200 °C



Tri-Clanmp, ASME BPE and ISO 1127

NPS	DN	L	Pipe outer Ø x wall thickness		dM	d
			ASME BPE	ISO 1127		
3/4"	20	98	19.05 x 1.2	26.9 x 1.6	16	25.4
1"	25		25.4 x 1.6	33.7 x 2	21	50.5
1 1/2"	38		38.1 x 1.6	42.4 x 2	30	64
2"	51		50.8 x 1.6	48.3 x 2	38	77.5
2 1/2"	63.5		63.5 x 1.6	60.3 x 2	52	91
3"	76.1		76.2 x 1.6	76.1 x 2	66	

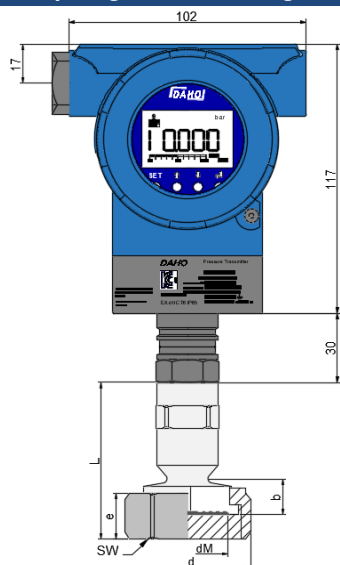
Pressure Transmitters with diaphragm seals based on DIN 11851



Groove nut, DIN 11851

DN	PN	for tube male Ø x wall thickness	dM	d	b	L
20	40	23 x 1.5	21	54	20	63
25		29 x 1.5	26	63		
32		35 x 1.5	32	70		
40		41 x 1.5	38	78		
50	25	53 x 1.5	48	92		
65		70 x 2	60	112		
80		85 x 2	72	127		

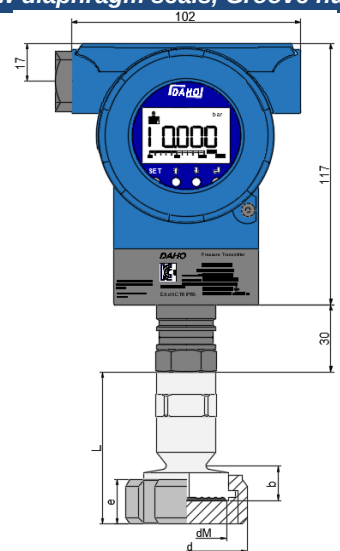
a/w diaphragm seals, Hexagon nut, APV-RJT



Hexagon nut, pipes per BS4825

DN	SW	for tube male Ø x wall thickness	dM	d	b	L
1"	51	25.4 x 1.6	19	51	20	63
1 1/2"	65	38.1 x 1.6	32	65		
2"	79	50.8 x 1.6	38	79		
2 1/2"	92	63.5 x 1.6	54	92		
3"	10	76.2 x 1.6	66	105		

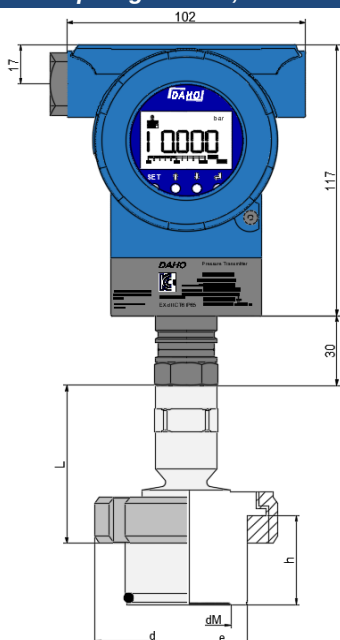
a/w diaphragm seals, Groove nut, IDF



Groove nut, threaded connection IDF ISO 2853

DN	PN	for tube male Ø x wall thickness	dM	d	b	L
1"	40	25.6 x 1.5	19	21	20	63
1 1/2"		38.6 x 1.5	32	34		
2"		51.6 x 1.5	46	48		
2 1/2"	25	64.1 x 1.9	56	58		
3"		76.7 x 1.9	66	68		

a/w diaphragm seals, flush extension mounted



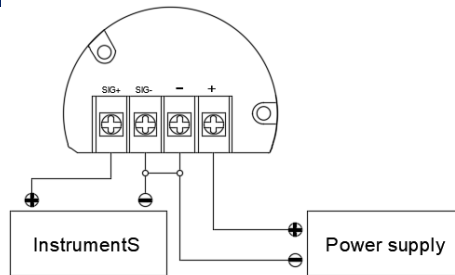
Flush mounted, hygienic tubes

DN	dM	e	d	h
40	40	52	78	38.5

Electrical Connection Diagram

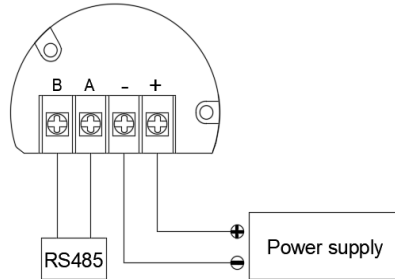
Analog output signals

Output signal	
Pin No.	Wire
+	+Vcc
-	-Vcc
+SIG	Out put +
-SIG	GND



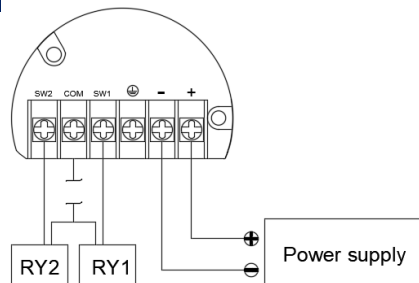
RS485 communication

Pin No.	2-wire
+	+Vcc
-	-Vcc
A	RS 485A
B	RS 485B



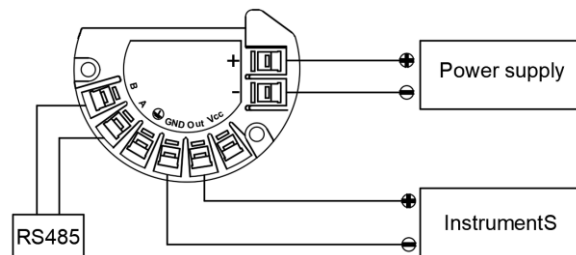
2 relay switches

Pin No.	Wire
+	+Vcc
-	-Vcc
SW1	Relay 1
SW2	Relay 2
COM	Relay COM



Analog output & RS485

Pin No.	Wire
+	+Vcc
-	-Vcc
Out	+ Signal
GND	- Signal
A	RS485 A
B	RS485 B



Analog output & RS485 & 2 relays

Pin No.	2-wire
+	+Vcc
-	-Vcc
A	RS 485A
B	RS 485B
SW1	Relay 1
SW2	Relay 2
COM	Relay COM

