

**Pressure transmitters
in st. steel housing &
hygienic application
series EDN.613**



St. steel housing & st. steel pressure sensors
Explosion flameproof version for Hazardous area
Certified by KOSHA, Ex d IIC T6

General features

- Specially designed for the measurement in Hazardous area
- Pressure range from 0...1 bar to 0...40 bar
- Explosion-proof  Ex d IIC T6
- Ingress protection IP 65
- Housing parts of stainless steel 316L
- Explosion-proof certified by KOSHA

Application area

- Hazardous area for pressure measurement
- Hygienic application
- Pharmaceutical industry
- Biotechnology

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

A4: $\pm 0.5\%$ FS

A7: $\pm 0.25\%$ FS / option

A9: $\pm 0.1\%$ FS / option (pressure range, ≥ 2 bar)

** pressure range, negative $\leq 1.0\%$

Overpressure

1.3 x pressure range

Output signal

4...20mA, 2-wire system

0...10V, 3-wire system

Power supply

Ref. power: DC 24V

Available power: DC 12...30V

Temperature range

Operating: -20...80 °C

-40...125 °C / option

Ambient: -20...60 °C

Storage: -10...80 °C

Temperature compensating range: 0...60 °C



series EDN.613 for hygienic application

Thermal error

Zero thermal error: $\pm 0.75\%$ FS @ 35 °C (typ.)

Span thermal error: $\pm 0.75\%$ FS @ 35 °C (typ.)

Response time ≤ 5 ms

Isolation $> 100\text{M}\Omega$ at 100 VDC

Electrical connecting cable gland

Flameproof

Surface Roughness of the Diaphragm

$R_a < 0.8 \mu\text{m}$

Materials

Wetted parts: st. steel 316L

Measurement cell: st. steel 316L

O-ring: FKM

Body: st. steel 304

Protection

IP 65

Weight

840g

Option

High temperature cooling device

up to 200 °C

up to 300 °C



DAHO Tronic Limited

Tel: 02-865-7001 Fax: 02-865-7109

mail: info@daho.co.kr

STX W-Tower 209

Gyeongin-ro 53 Gil 90 Guro-gu

Seoul 08215 Korea

Technical data

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

Voltage:

3-wire 0...10V, 0...5V, 1...5V Vs=12...30 VDC
0.5...4.5V, 3-wire system

Performance

Accuracy: $\leq \pm 0.5\% \text{FSO @ } 25^\circ\text{C}$

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: <5ms

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°C
-40...125°C/option

Compensated temperature: 0...60°C

Electrical protection

Electromagnetic compatibility:

Emission and immunity according to

EN 61326-2-3:2013 CCISPR II Group 1, Class A

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

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: Stainless steel 304

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.

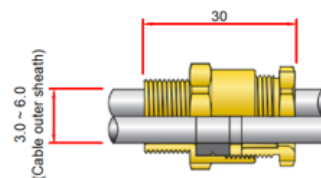
■ Durable design for severe vibration.

Electrical connecting cable gland

■ IP66

■ Materials: Brass with nickel plated

■ Cable outer : 3.0...6.0 mm



Ordering information

Model code

EDN.613 · [] · [] · [] · [] · [] · B [] · []

Accuracy

A4:	Accuracy ±0.5 % F.S
A7:	Accuracy ±0.25 % F.S
A9:	Accuracy ±0.1 % F.S

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

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"

Kind of oil filled for calibration

F :	Food & Beverage oil
G :	Glycerine

Pressure range code, unit bar

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

Option / 제작상세에 기재

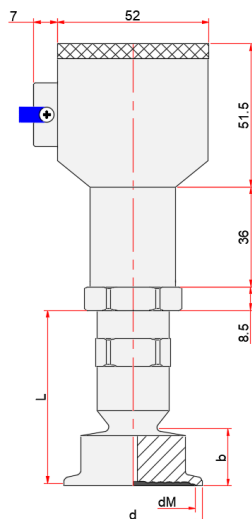
Code	Description
T4	-40...125 °C / operating temperature
CD2:	Cooling device up to 200 °C
CD3:	Cooling device up to 300 °C
TP:	st. steel tag plate, 60 x 20 x 0.5t
KC:	KOLAS Ilac-MRA calibration certificate

How to Order

EDN.613.A7.O1.TR, S4.G.BR30.

EDN.613,±0.5%, 4...20mA, TRI-clamp, Sanitary 2", Glycerine filled, 0...4 bar, DMCC

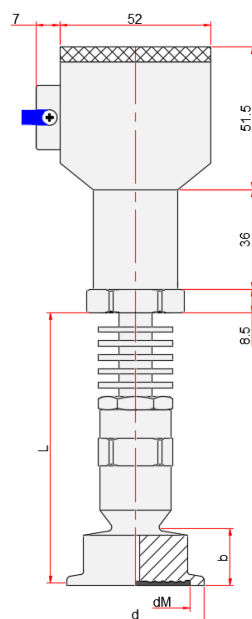
Pressure Transmitters with diaphragm seals based on ASME & ISO 1127



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	
2"	51		50.8 x 1.6	48.3 x 2	38	64
2 1/2"	63.5		63.5 x 1.6	60.3 x 2	52	77.5
3"	76.1		76.2 x 1.6	76.1 x 2	66	91

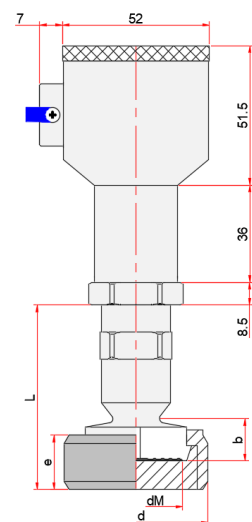
Pressure Transmitters with diaphragm seals a/w cooling device 200 °C



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	
2"	51		50.8 x 1.6	48.3 x 2	38	64
2 1/2"	63.5		63.5 x 1.6	60.3 x 2	52	77.5
3"	76.1		76.2 x 1.6	76.1 x 2	66	91

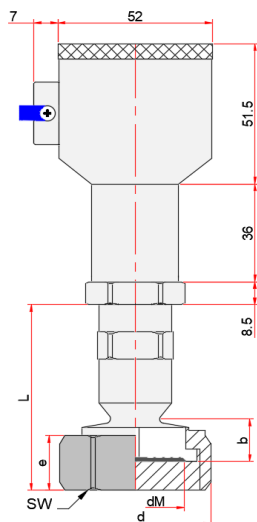
Pressure Transmitters with diaphragm seals based on DIN 11851



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		

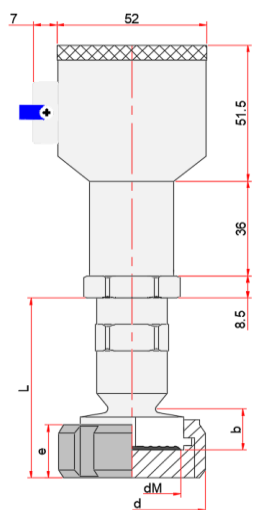
a/w diaphragm seals, Hexagon nut, APV-RJT



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		

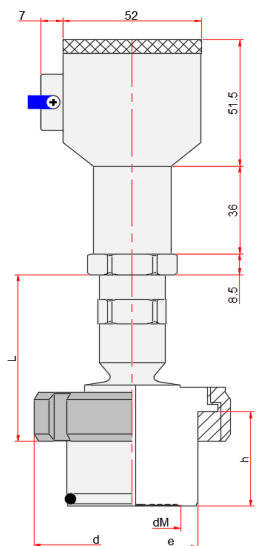
a/w diaphragm seals, Groove nut, IDF



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		

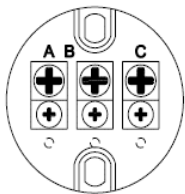
a/w diaphragm seals, flush extension mounted



Flush mounted, hygienic tubes

DN	dM	e	d	h
40	40	52	78	38.5

Pin assignment

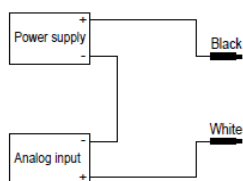


Connection diagram

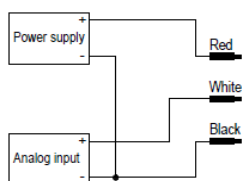
Pin No.	Current output	Voltage output
A	+Vcc	+Vcc
B	Output	GND
C		Output

Connection wiring diagram

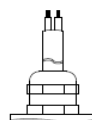
Flying leads with 2m cable



2-wire / current



3-wire / voltage



	2-Wire	3-Wire
White	Output(mA)	Output(VDC)
Red		+Vcc
Black	+Vcc	GND