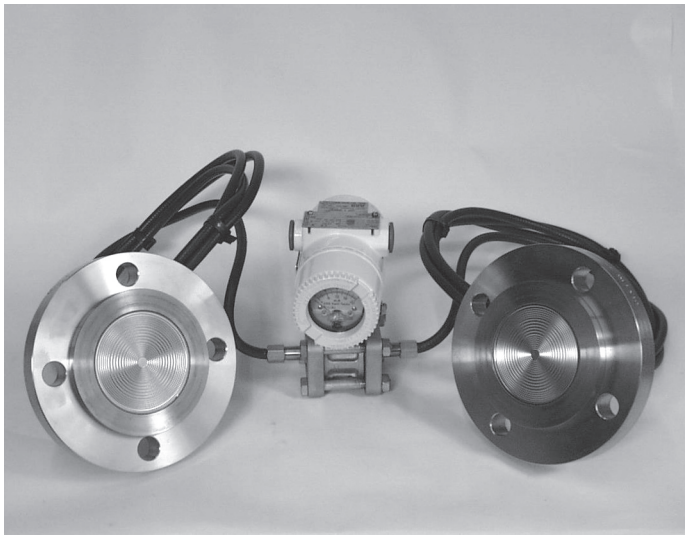
Specification sheet

600T EN Series Pressure Transmitters

Model 621ES differential/gauge/absolute
Model 624ES gauge/absolute
with remote seal

- **Base accuracy : ± 0.075%**
- **Reliable inductive sensing system coupled with the very latest digital technologies**
  - ensures high performance at all process conditions
- **Wide selection of materials and choice of fill fluids including "process-inert"**
  - meet virtually all process requirements also protecting application integrity
- **HART 4-20 mA, Profibus PA, FF versions with plug-and-play electronics replacement**
  - provides interchangeability for upgrading transmitter
- **Local snap calibration and full management via hand terminal or PC-running software**
- **HART®, Profibus PA, FF communications**
  - allows integration with standard process bus
- **CoMeter display option**
  - offers HART Configuration capabilities combined with local indication
- **Ecoefficient life cycle**
  - ensures low environmental impact in compliance with LCA assessment to ISO 14040 standard





The all new 600T Series transmitter
The first choice pressure transmitter is now an even bigger choice

GENERAL DESCRIPTION

Model 621ES and 624ES detailed in this specification sheet apply for those transmitters which include one or two remote seal(s) connected via a capillary to the transmitter sensor. Depending on the selection made for the high and low pressure sides in the ordering code of model 621ES the following versions can be obtained :

a) two remote seals of same type and size; this allows a differential measurement.
b) one remote seal on positive side and a selectable reference on negative side as follows :
   b1) flange suitable for 1/2"NPT-f process connection which can be removed to have 1/4" NPT-f connection direct on flange; this allows also to connect the other leg (wet or dry) of a differential measure.
   b2) blind flange at atmospheric reference for gauge measure.
   b3) blind flange at vacuum reference for absolute measure.
c) one remote seal on negative side and a selectable reference on positive side as follows :
   c1) flange suitable for 1/2"NPT-f process connection which can be removed to have 1/4" NPT-f connection direct on flange; this allows also to connect the other leg (wet or dry) of a differential measure.
   c2) blind flange at atmospheric reference for gauge measure.

Model 624ES has the remote seal on the positive side and the user can select in the ordering code the reference at atmospheric or vacuum pressure, respectively for gauge or absolute measure.

The following table list the types of standard seal which can be combined with 62XES transmitters (the mnemonic is used as reference in the compatibility table of page 3).

Model	Seal type	Size	Mnemonic
S6W	Wafer	1 1/2in/ NW40 2in / NW50 3in / NW80	P1.5 P2 P3
S6C	Chemical tee flanged	3in	P3
S6F	Flanged flush diaphragm	2in / NW50 3in/NW80 4in/NW100	P2 P3 P3
S6E	Flanged extended diaphragm	2in / NW50 3in / NW80 4in / NW100	E2 E3 P3
S6U	Union	1 1/2in	P1.5
S6T	Threaded off-line	2 1/2in	T2.5
S6R	Flanged off-line	2 1/2in	T2.5
S6S	Union nut and Triclamp sanitary	2in/F50 3in/F80 4in	S2 S3 S3
S6B	Button	1in	B1
S6P	Urea service flanged	1 1/2 in 2 1/2 in	U1.5 U2.5

Refer to S6 specification sheet for all data and details relevant to seal element.

All following specification data apply for identical characteristics of the two sides when the transmitter is differential.

FUNCTIONAL SPECIFICATIONS

Range and span limits

• Model 621ES

Sensor code	Upper Range Limit (URL)	Lower Range Limit (LRL)		Turndown ratio (TD)		
		621ES Differential measure	621ES gauge measure	Normal	Extended	Maximum
B	10 kPa 100 mbar 40.1 inH_2O	- 10 kPa - 100 mbar - 40.1 inH_2O	- 10 kPa - 100 mbar - 40.1 inH_2O	5	10	30
C	40 kPa 400 mbar 160 inH_2O	- 40 kPa - 400 mbar - 160 inH_2O	- 40 kPa - 400 mbar - 160 inH_2O	10	20	60
N	65 kPa 650 mbar 260 inH_2O	- 65 kPa - 650 mbar - 260 inH_2O	- 65 kPa - 650 mbar - 260 inH_2O	10	20	60
D	160 kPa 1600 mbar 642 inH_2O	- 160 kPa - 1600 mbar - 642 inH_2O	0.07 kPa abs (Δ) 0.7 mbar abs (Δ) 0.5 mmHg (Δ)	10	20	60
E	600 kPa 6 bar 87 psi	- 600 kPa - 6 bar - 87 psi	0.07 kPa abs (Δ) 0.7 mbar abs (Δ) 0.5 mmHg (Δ)	10	20	60
F	2400 kPa 24 bar 348 psi	- 2400 kPa - 24 bar - 348 psi	0.07 kPa abs (Δ) 0.7 mbar abs (Δ) 0.5 mmHg (Δ)	10	20	60
W	8000 kPa 80 bar 1160 psi	- 8000 kPa - 80 bar - 1160 psi	0.07 kPa abs (Δ) 0.7 mbar abs (Δ) 0.5 mmHg (Δ)	10	20	60
U	16000 kPa 160 bar 2320 psi	- 16000 kPa - 160 bar - 2320 psi	0.07 kPa abs (Δ) 0.7 mbar abs (Δ) 0.5 mmHg (Δ)	10	20	60

• Model 624ES

Sensor code	Upper Range Limit (URL)	Lower Range Limit (LRL) (Δ) 624ES with remote seal	Turndown ratio (TD)		
			Normal	Extended	Maximum
D	160 kPa 1600 mbar 642 inH_2O	0.07 kPa abs 0.7 mbar abs 0.5 mmHg	10	20	60
E	600 kPa 6 bar 87 psi	0.07 kPa abs 0.7 mbar abs 0.5 mmHg	10	20	60
F	2400 kPa 24 bar 348 psi	0.07 kPa abs 0.7 mbar abs 0.5 mmHg	10	20	60
W	8000 kPa 80 bar 1160 psi	0.07 kPa abs 0.7 mbar abs 0.5 mmHg	10	20	60
U	16000 kPa 160 bar 2320 psi	0.07 kPa abs 0.7 mbar abs 0.5 mmHg	10	20	60
S	42000 kPa 420 bar 6090 psi	0.07 kPa abs 0.7 mbar abs 0.5 mmHg	10	20	30

Note : Lower range value of 621ES for absolute measurement is always 0.07 kPa abs, 0.7 mbar abs, 0.5 mmHg. Turndown ratio applies for any measure type.

(Δ) Double the value with inert filling

Span limits

Maximum span = URL
(can be further adjusted up to ± URL (TD = 0.5) for differential models, within the range limits)
Minimum recommended span = URL/TD extended
(can be further turndown to URL/TD maximum at no stated performances)

Zero suppression and elevation

Zero and span can be adjusted to any value within the range limits detailed in the table as long as:
- calibrated span ≥ minimum span

Damping

Selectable time constant : 0, 0.25, 0.5, 1, 2, 4, 8 or 16 sec.

Electromagnetic compatibility (EMC)

Comply with EN 50081-2 for emission and EN 50082-2 for immunity requirements and test; CE marking.

Turn on time

Operation within specification in less than 2 sec. with minimum damping.

Insulation resistance

> 100 MΩ @ 1000 Vdc (terminals to earth)

Sensor code	Compatibility (allowed seal types with maximum capillary length (m) in brackets) versus measurement configuration		
	differential (two seals)	**gauge and differential (one seal)**	**absolute (one seal)**
B	P3 (3) E3 (2•), T2.5 (2•), S3 (3•)	P3 (1) S3 (1)	
C-N	P2 (3), P3 (6), E2 (2), E3 (4), T2,5 (3) U2.5 (3), S2 (1•), S3 (6)	P2 (2), P3 (4), E3 (3), T2,5 (2) U2.5 (3), S3 (4)	P2 (2), P3 (3), E3 (3), T2,5 (2) U2.5 (3), S3 (3)
D	P1.5 (4), P2 (8), P3 (8), E2 (6), E3 (6) T2.5 (6),U2.5 (6), S2 (3), S3 (10)	P1.5 (3), P2 (6), P3 (10), E2 (4), E3 (8) T2.5 (6),U2.5 (6), S2 (2), S3 (10)	P1.5 (3), P2 (5), P3 (8), E2 (3), E3 (6) T2.5 (5),U2.5 (5), S2 (2), S3 (8)
E	P1.5 (5), P2 (8), P3 (10), E2 (6), E3 (8), T2.5 (6), U2.5 (6), S2 (6), S3 (10)	P1.5 (5), P2 (8), P3 (10), E2 (6), E3 (8), T2.5 (6), U1.5 (5),U2.5 (6), S2 (6), S3 (10)	P1.5 (4), P2 (6), P3 (8), E2 (5), E3 (6), T2.5 (5), U1.5 (4),U2.5 (5), S2 (5), S3 (8)
F	P1.5 (5), P2 (8), P3 (10), E2 (6), E3 (8), T2.5 (6), U2.5 (6), S2 (6), S3 (10)	P1.5 (5), P2 (8), P3 (10), E2 (6), E3 (8), T2.5 (6), U1.5 (5), U2.5 (6), S2 (6), S3 (10)	P1.5 (4), P2 (6), P3 (8), E2 (5), E3 (6), T2.5 (5), U1.5 (4),U2.5 (5), S2 (5), S3 (8)
W	P1.5 (5), P2 (8), P3 (10), E2 (6), E3 (8), T2.5 (6), U2.5 (6), S2 (6), S3 (10)	P1.5 (5), P2 (8), P3 (10), E2 (6), E3 (8), B1 (1.5•) T2.5 (6), U1.5 (5), U2.5 (6), S2 (6), S3 (10)	P1.5 (4), P2 (6), P3 (8), E2 (5), E3 (6), T2.5 (5), U1.5 (4),U2.5 (5), S2 (5), S3 (8)
U-S	P1.5 (5), P2 (8), P3 (10), T2.5 (6), U2.5 (6)	P1.5 (5), P2 (8), P3 (10), T2.5 (6), U1.5 (5), U2.5 (6), B1 (1.5•)	P1.5 (4), P2 (6), P3 (8), T2.5 (5), U1.5 (4),U2.5 (5)

The combinations sensor code/ seal type marked (•) modify the base accuracy rating and static pressure effect; refer to performance specifications. Although the above table defines capillary length, for some types of seal combined to the sensor, care should be taken of the maximum working pressure of the used seal which can limit the range.

Temperature limits °C (°F)

- **Process**

The following table shows characteristics of fill fluid when used in transmitter with remote seal

FILL FLUIDS (APPLICATION)	OPERATING CONDITIONS			
	Tmax @ P >of	**Pmin mbar abs (psia)**	**Tmax @ P min**	**Tmin**
Silicone oil DC 200 (General purpose)	200 (390) @ 35 mbar abs	0.7 (0.1)	160 (320)	-40 (-40)
Silicone oil DC 702 (High temperature)	315 (600) @ atmosphere	0.7 (0.1)	200 (390)	-7 (+20)
Silicone oil DC 704 (High temperature)	340 (645) @ atmosphere	0.7 (0.1)	230 (445)	20 (70)
Neobee M-20 (Food-Sanitary)	200 (390) @ atmosphere	130 (1.9)	150 (300)	-18 (0)
Glycerin Water (70%) (Food-Sanitary)	93 (200) @ atmosphere	1000 (14.5)	93 (200)	-7 (+20)
DC 97-9120 PHARMA B GRADE (Food-Sanitary)	200 (390) @ 35 mbar abs	0.7 (0.1)	160 (320)	-40 (-40)
Inert (Galden) (Oxygen Service)	160 (320) @ atmosphere	0.7 (0.1)	65 (150)	-18 (0)
KTFILL-1 (Paints and specials)	300 (570) @400 mbar abs	0.7 (0.1)	160 (200)	-10 (+14)

Lower process limit for Viton gasket: -20°C (-4°F)

- **Ambient (is the operating temperature)**

Filling	Model 621ES		Model 624ES
	Sensor C to U	**Sensor B**	**Sensor D to S**
Silicone oil (DC 200)	-40 and +85 (-40 and +185)	-25 and +85 (-13 and +185)	-40 and +85 (-40 and +185)
Inert	-20 and +85 (-4 and +185)	-10 and +85 (+14 and +185)	
KTFILL-1	-40 and +85 (-40 and +185)	-10 and +85 (+14 and +185)	

Lower ambient limit for LCD indicators: -20°C (-4°F)
Upper ambient limit for CoMeter : +70°C (+158°F)
Upper ambient limit for inert filling for use below atmospheric pressure is 65°C (150°F)

- **Storage**

Lower limit : -50°C (-58°F); -40°C (-40°F) for LCD indicators
Upper limit : +120°C (+248°F); +85°C (+185°F) for LCD indicators

Time response

The time response of a transmitter/seal system is function of some characteristics which define relevant coefficients as follows :

Configuration coefficient (K1)

	Seal type	
	P1.5, P2, E2, S2, U1.5, B1	**P3, E3, T2.5, S3, U2.5**
One seal (for gauge, absolute or differential)	9.2 x L	0.75 x L
Two seals (for differential)	18.4 x L	1.5 x L

"L" is the capillary length of the remote seal

Filling coefficient (K2 and K3)

Fill Fluid	K2	K3
Silicone oil DC 200	1	0.12
Silicone oil DC 702	5.2	0.54
Silicone oil DC 704	4.5	0.04
Neobee M-20	0.97	0.2
Glycerin Water (70%)	0.26	0.03
DC 97-9120	5.2	0.27
Inert (Galden)	1.9	0.37
KTFILL-1	1.7	0.5

Operating temperature coefficient (K4)

to be considered only for operating temperature less than 25°C (77°F)

$$K4 = |T - 25| \text{ (absolute value)}$$

Coefficient K4 should be considered = 0 for temperatures above 25°C (77°F)

Sensor (URL) coefficient K5

Sensor Code	K5
B	0.2
C, N	0.05
D	0.0125
E, F, W, U, S	0.001

The seal(s) constant time is calculated by the following formula

$$T_{S6} \text{ (sec)} = [K1 \times (K2 + K3 \times K4) \times K5]$$

The total constant time of the transmitter/seal system is the combination of the two individual time as follows:

$$T_{TX} \text{ (sec)} = T_{TR} + T_{S6} + 0.1$$

The following table details the transmitter time values (T_{TR}) in sec. for the transducers with specific filling fluids @25°C (77°F)

Sensor Code	Silicone oil DC 200	Inert (Galden)	KTFILL-1
B	0.9	3.2	3.1
C, N	0.26	0.93	0.9
D	0.13	0.46	0.45
E, F, W, U, S	0.075	0.26	0.25

Overpressure limits (without damage to the transmitter)

- Lower : 0.067 kPa abs, 0,67 mbar abs, 0.01 psia (0.13 kPa abs, 1.33 mbar abs, 0.02 psia with inert filling).
- Upper (transmitter sensor limit or flange / fitting rating of the seal, whichever is less)

- model 621ES

all sensor codes : 16 MPa, 160 bar, 2320 psi (14 MPa, 140 bar or 2000 psi for FM and CSA approval)

- model 624ES

- sensor code D, E, F, W : 14 MPa, 140 bar, 2030 psi
- sensor code U : 25 MPa, 250 bar, 3620 psi
- sensor code S : 65 MPa, 650 bar, 9400 psi

Refer to S6 specification sheet for maximum working pressure related to the used remote seals

Static pressure

Transmitters model 621ES for differential pressure operate within specifications between the following limits

- Lower

1.3 kPa abs,13 mbar abs, 0.2 psia (double with inert filling) (0.067 kPa abs, 0,67 mbar abs, 0.01 psia differential transmitter using two remote seals)

- Upper

same of overpressure limit

Proof pressure

The transmitter meets SAMA PMC 27.1 requirements and can be exposed without leaking to line pressure of up to 28 MPa, 280 bar, 4000 psi or two times the flange/fitting rating of the seal, whichever is less

ELECTRICAL CHARACTERISTICS AND OPTIONS

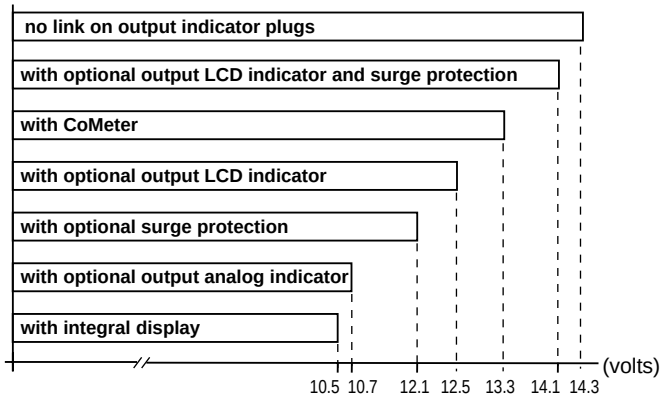
- ***HART digital communication and 4 to 20 mA output***

Power Supply

The transmitter operates from 10.5 to 42 Vdc with no load and is protected against reverse polarity connection (additional load allows operations over 42 Vdc).

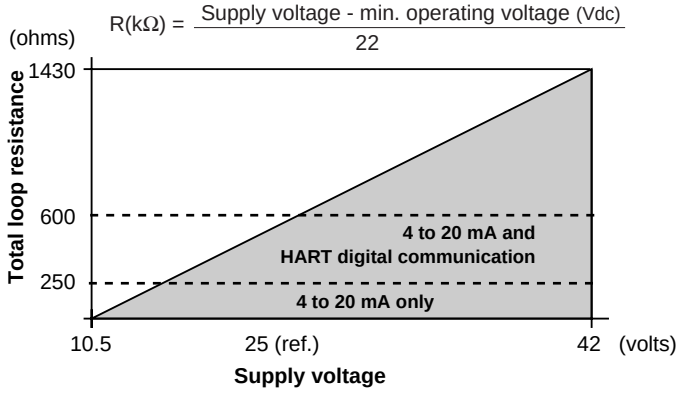
For EEx ia and intrinsically safe (FM, CSA and SAA) approval power supply must not exceed 30 Vdc.

MINIMUM OPERATING VOLTAGES



Load limitations - 4-20 mA and HART total loop resistance **:**

$$R(k\Omega) = \frac{\text{Supply voltage - min. operating voltage (Vdc)}}{22}$$



Optional indicators

- **Output meter (user adjustable)**
  - LCD : 3 1/2-digit with 10 mm (3/8 in) high, 7-segment characters. Engineering unit labels are provided. LCD output meter may be calibrated within the range -1999 to + 1999 with a span adjustable between 100 and 3998 units. (Display of decimal point, if required, is switch selectable)
  - analog : 36 mm (1.4 in) scale on 90°
- **Integral display**
  - LCD: 4-digit with 8 mm. (5/16 in) high, 9-segment alphanumeric characters.

    User-definable display mode with HART communication :
    - process variable in engineering units, or
    - percent of range, or
    - process variable in engineering units and percent of range alternating every 3 seconds, or
    - process variable in engineering units and digital output (4 to 20 mA) alternating every 3 seconds.

    Factory selectable display mode with 4 to 20 mA output :
    - percent of range
    - percent of range and 4 to 20 mA output alternating every 3 seconds

  Display also indicates diagnostic messages.
- **CoMeter**
  - 5-digit LCD (± 99999 counts programmable) with 7.6 mm. high (3 in), 7-segment numeric characters plus sign and digital point
  - 10-segment LCD bargraph display (10% per segment)
  - 7-digit LCD with 6 mm. high (2.3 in), 14-segment alphanumeric characters.

Optional surge protection

Up to 2.5 kV (5 kA discharge current) of 8 µs rise time/20 µs decay.

Output signal

Two-wire 4 to 20 mA dc, user-selectable for linear or square root output, power of 3/2 or 5/2, 5th order or two 2nd order switching point selectable programmable polynomial output.

HART® communication provides digital process variable (%, mA or engineering units) superimposed on 4 to 20 mA signal, with protocol based on Bell 202 FSK standard.

Output current limits (to NAMUR standard)

Overload condition
- Lower limit : 3.8 mA dc
- Upper limit : 20.8 mA dc

Transmitter failure mode (to NAMUR standard)

The output signal can be user-selected to a value of 3.6 or 21.6 mA on gross transmitter failure condition, detected by self-diagnostics.
In case of CPU failure the output is driven <3.6 mA or >21.6 mA.

- ***Profibus PA output***

Power supply

The transmitter operates from 10.5 to 32 Vdc with no polarity.
For EEx ia approval power supply must not exceed 15 Vdc.
Intrinsic safety installation according to FISCO model.

Current consumption
- operating (quiescent) : 10.5 mA
- communicating : 20.5 mA
- fault current limiting : 16 mA max.

Output signal

Physical layer in compliance to IEC 1158-2/EN 61158-2 with transmission to Manchester II modulation, at 31.25 kbit/sec.

Output interface

Profibus PA communication according to Profibus DP50170 Part 2/DIN 19245 part 1-3 compliant to Profiles 3.0 Class A & B for pressure transmitter; ident. number 052B HEX.

Output update time : 25 ms

Function blocks

2 analog input, 1 transducer, 1 physical

Optional indicator

Integral display
- LCD : 4 digit characters, displaying process variable in engineering units or as percentage value.

Display also indicates diagnostic messages.

Transmitter failure mode

On gross transmitter failure condition, detected by self-diagnostics, the output signal can be driven to defined conditions, selectable by the user as safe, last valid or calculated value.

- ***FOUNDATION fieldbus output***

Device type

Link Active Scheduler (LAS) capability implemented

Power supply

The transmitter operates from 9 to 32 Vdc with no polarity.
For EEx ia approval power supply must not exceed 24 Vdc.
Intrinsic safety installation according to FF application guide

Current consumption
- operating (quiescent) : 10.5 mA
- communicating : 20.5 mA
- fault current limiting : 16 mA max.

Output signal

Physical layer in compliance to IEC 1158-2/EN 61158-2 with transmission to Manchester II modulation, at 31.25 kbit/sec.

Function blocks/execution period

2 standard Analog Input blocks / 25 msec. max (each)
1 standard PID block / 70 msec. max.

Additional blocks

Transducer block, 1 standard Resource block,
1 custom Pressure with calibration block

Number of link objects : 25

Number of VCRs : 24

Output interface

FOUNDATION fieldbus digital communication protocol to standard H1, compliant to specification V. 1.4; FF registration IT011000.

Optional indicator

Integral display

- LCD : 4 digit characters, displaying process variable in engineering units or as percentage value.

Display also indicates diagnostic messages.

Transmitter failure mode

The output signal is "frozen" to the last valid value on gross transmitter failure condition, detected by self-diagnostics which also indicate a BAD conditions. If electronic failure or short circuit occur the transmitter consumption is electronically limited at a defined value (16 mA approx), for safety of the network.

PERFORMANCE SPECIFICATIONS

Stated at ambient temperature of 23°C ± 3K (75°F ± 5), relative humidity of 50% ±20%, atmospheric pressure, mounting position with vertical diaphragm and zero based range for transmitter with isolating diaphragms in AISI 316 L ss or Hastelloy and silicone oil fill or KTFILL-1 and HART digital trim values equal to 4-20 mA span end points, in linear mode; transmitter with two remote seals should have identical type and size on the positive and negative sides.

Unless otherwise specified, errors are quoted as % of span.

Some performance data are affected by the actual turndown (TD) as ratio between Upper Range Limit (URL) and calibrated span.

IT IS RECOMMENDED TO SELECT THE TRANSMITTER SENSOR CODE PROVIDING THE TURNDOWN VALUE AS LOWEST AS POSSIBLE TO OPTIMIZE PERFORMANCE CHARACTERISTICS.

Accuracy rating

% of calibrated span, including combined effects of terminal based linearity, hysteresis and repeatability.

For fieldbus versions SPAN refer to analog input function block outscale range

- **Using remote seal sizes < NW 80/3in/F80**
  - ± 0.10% for TD from 1:1 to 10:1
    (± 0.10% for sensor code B for TD from 1:1 to 5:1)
  - ± 0.01% x $\frac{URL}{Span}$ for TD from 10:1 to 20:1
    (± 0.02% x $\frac{URL}{Span}$ for sensor code B
    for TD from 5:1 to 10:1)
- **Using remote seal sizes ≥ NW 80/3in/F80**
  - ± 0.075% for TD from 1:1 to 10:1
    (± 0.10% for sensor code B for TD from 1:1 to 5:1)
  - ± 0.0075% x $\frac{URL}{Span}$ for TD from 10:1 to 20:1
    (± 0.02% x $\frac{URL}{Span}$ for sensor code B
    for TD from 5:1 to 10:1)

Multiply the values by 1.5 for sensor/seal combination marked (•) and for transmitters for absolute measurement.

Optional indicators accuracy

- integral display (microprocessor driven) : no error
- analog output meter : ± 2% full scale deflection
- LCD output meter : ± 0.1% of calibrated span ± 1 unit
- CoMeter
  - digital : ± 0.10% of max span(16 mA) ± 1 digit
  - analog (bargraph) : 10%

Operating influences

Temperature effects

per 20 K (36°F) ambient temperature change between the limits of - 20°C to + 65°C (-4 to +150°F)

Model		Sensor code	for TD up to	
621ES with remote seal(s)	diff. & gauge	C to U	10:1	± (0.05% URL + 0.08% span)
		B	5:1	± (0.075% URL + 0.12% span)
	absolute	C to U	10:1	± (0.10% URL + 0.16% span)
		B	5:1	± (0.15% URL + 0.24% span)
624ES with remote seal		D, E, F, W, U	10:1	± (0.08% URL + 0.15% span)
		S	10:1	± (0.10% URL + 0.15% span)

Multiply by 1.5 the above coefficients for 20 K (36°F) change between the limits of -40 to -20°C (-40 to -4°F) and of +65 to +85°C (+150 to 185°F)

The total temperature error is the combination of the above transmitter effect with the seal errors, as applicable due to application temperatures.

Refer to S6 specification sheet for additional effects of the remote seal.

Optional LCD output meter ambient temperature

per 1 K (1.8°F) change between the limits of -20 and +80°C (-4 and + 176°F)

Total effect : ± (0.0002 x span units + 0.1) of reading.

Optional CoMeter ambient temperature

Total reading error per 20K (36°F) change between the ambient limits of -20 and +70°C (-4 and +158°F) :

± 0.15% of max span (16 mA).

Static pressure (zero errors can be calibrated out at line pressure)

per 2 MPa, 20 bar or 290 psi change on transmitter flange

- **Model 621ES**
  - zero error : ± 0.25% of URL
  - span error : ± 0.25% of reading

Multiply by 1.5 the errors both for sensor code B and for sensor/seal combination marked (•).

Supply voltage

Within voltage/load specified limits the total effect is less than 0.005% of URL per volt.

Load

Within load/voltage specified limits the total effect is negligible.

Radio frequency interference

Total effect : less than 0.10% of span from 20 to 1000 MHz and for field strengths up to 30 V/m when tested with shielded conduit and grounding, with or without meter. Meets IEC 801.

Common mode interference

No effect from 100 V rms @ 50 Hz, or 50 Vdc.

Series mode interference

No effect from 1 V rms @ 50 Hz.

PHYSICAL SPECIFICATIONS

(Refer to ordering information sheets for variant availability related to specific model or versions code)

Materials

• **Model 621ES only**

Process isolating diaphragms (*)

AISI 316 L ss, Hastelloy C276 ◊;

Process flanges, adapters, plugs and drain/vent valves (*)

AISI 316 L ss; Hastelloy C ◊

Blind flange (on reference and/or remote seal side)

AISI 316 L ss.

Gaskets (*) : Viton ◊, PTFE.

Bolts and nuts

- Plated carbon steel bolts class 8.8 per UNI 5737 (ISO 4014) and nuts class 6.S per UNI 3740/4 (ISO 898/2).
- Plated alloy steel bolts per ASTM-A-193-77a grade B7M and nuts per ASTM A194/A 194 M-90 grade 2HM, in compliance with NACE MR0175 Class II.
- AISI 316 ss bolts Class A4-80 and nuts Class A4-70 per UNI 7323 (ISO 3506).
- AISI 316 ss bolts and nuts Class A4-50 per UNI 7323 (ISO 3506), in compliance with NACE MR0175 Class II.

• **Model 621ES and 624ES**

Sensor housing : AISI 316 L ss

Sensor fill fluid

Silicone oil (DC200) or inert fill (perfluorinated polyethers Galden ◊) or "process-inert" fill (KTFILL-1).

Mounting bracket (**)

Zinc plated carbon steel with chrome passivation;
AISI 316 L ss.

Electronic housing and covers

Barrel version
- Low-copper content aluminium alloy with baked epoxy finish;
- AISI 316 L ss.

DIN version (621ES)
- Low-copper content aluminium alloy with baked epoxy finish

Covers O-ring: Buna N.

Local zero and span adjustments:

Glass filled polycarbonate plastic (removable)

Tagging

AISI 316 ss data plate attached to the electronics housing.

Calibration

- Standard: at maximum span, zero based range, ambient temperature and pressure
- Optional: at specified range and ambient conditions; or at operating temperature.

Optional extras

Mounting brackets

For vertical and horizontal 60 mm. (2 in) pipes or wall mounting.

Output indicator:

plug-in rotatable type, LCD or analog.
Standard LCD output meter scale is 0 to 100% linear; special linear scale to specified range and engineering unit is available.
Standard analog output meter scale is 0 to 100% linear or 0 to 10 square-root; special graduation is available.

Supplemental customer tag

AISI 316 ss tag screwed/fastened to the transmitter for customer's tag data up to a maximum of 20 characters and spaces on one line for tag number and tag name, and up to a maximum of 3 spaced strings of 10 characters each for calibration details (lower and upper values plus unit).
Special typing evaluated on request for charges.

Surge protection (not available with Profibus PA and FF output)
Material traceability

Environmental protection

Wet and dust-laden atmospheres

The transmitter is dust and sand tight and protected against immersion effects as defined by IEC 529 (1989) to IP 67 (IP 68 on request) or by NEMA to 4X or by JIS to C0920

Hazardous atmospheres

With or without output meter/integral display
INTRINSIC SAFETY/EUROPE:
ATEX/BASEEFA approval
- EC-Type Examination Certificate no. BAS 99ATEX 1180
  - (HART)
    II 1 GD T50°C, EEx ia IIC T6/T5 (-40°C ≤ Ta ≤+40°C)
    T95°C, EEx ia IIC T4 (-40°C ≤ Ta ≤+85°C)
  - (FOUNDATION Fieldbus)
    II 1 GD T70°C, EEx ia IIC T4 (-40°C ≤ Ta ≤+60°C)
- EC-Type Examination Certificate no. BAS 00ATEX 1241
  - (PROFIBUS-PA)
    II 1 GD T70°C, EEx ia IIB T4 (-40°C ≤ Ta ≤+60°C)

TYPE "N"/EUROPE :
ATEX/BASEEFA type examination
- Design compliance by Certificate no. BAS 01ATEX 3380X
  - (HART)
    II 3 GD T50°C, EEx nL IIC T5 (-40°C ≤ Ta ≤+40°C)
    T95°C, EEx nL IIC T4 (-40°C ≤ Ta ≤+85°C)
  - (FOUNDATION Fieldbus)
    II 3 GD T70°C, EEx nL IIC T4 (-40°C ≤ Ta ≤+60°C)
- Design compliance by Certificate no. BAS 01ATEX 3384X
  - (PROFIBUS-PA)
    II 3 GD T70°C, EEx nL IIB T4 (-40°C ≤ Ta ≤+60°C)

FLAMEPROOF/EUROPE:
ATEX/CESI approval;
- EC-Type Examination Certificate no. CESI 00 ATEX 035
  II 1/2 GD T80°C, EEx d IIC T6 (-40°C ≤ Ta ≤ +70°C)
  T95°C, EEx d IIC T5 (-40°C ≤ Ta ≤ +85°C)

CANADIAN STANDARDS ASSOCIATION
and FACTORY MUTUAL :
- Explosionproof: Class I, Div. 1, Groups A, B, C, D
- Dust ignitionproof : Class II, Div. 1, Groups E, F, G
- Suitable for : Class II, Div. 2, Groups F, G; Class III, Div. 1, 2
- Nonincendive: Class I, Div. 2, Groups A, B, C, D
- Intrinsically safe: Class I, II, III, Div. 1, Groups A, B, C,D,E, F, G

STANDARDS AUSTRALIA (SAA)
TS/WCA Approval (HART only)
- Conformity Certificate no. AUS Ex 3117X
  Ex d IIC T5 (T_{amb} +85°C)/T6 (T_{amb} +70°C) Class 1 Zone 1;
  Ex ia IIC T4 (T_{amb} +85°C) /T5 (T_{amb} +55°C) T6 Class 1 Zone 0

Process connections

Conventional flange (621ES) : 1/2 NPT on adapter or 1/4 NPT direct on process axis (according to DIN 19213)
Refer to S6 specification sheet for process connections through remote seals.

Electrical connections

Two 1/2 NPT or M20x1.5 or PG 13.5 or 1/2 GK threaded conduit entries, direct on housing; straight or angle Harting HAN connector and one plug, on request.

Terminal block

- HART version
  Three terminals for signal/external meter wiring up to 2.5 mm^2 (14 AWG) and three connection points for test and communication purposes.
- Fieldbus versions
  Two terminals for signal wiring (bus connection) up to 2.5 mm^2 (14 AWG)

Grounding

Internal and external 6 mm^2 (10 AWG) ground termination points are provided.

Mounting position

Transmitter can be mounted in any position.
Electronics housing may be rotated to any position. A positive stop prevents over travel.

Mass (without options and seals)

3.5 kg approx (8 lb); add 1.5 kg (3.4 lb) for AISI housing.
Add 650 g (1.5 lb) for packing.

Packing : Carton

CONFIGURATION

- ***Transmitter with HART communication and 4 to 20 mA***

Standard configuration

Transmitters are factory calibrated to customer's specified range. Calibrated range and tag number are stamped on the tag plate. If a calibration range and tag data are not specified, the transmitter will be supplied with the plate left blank and configured as follows:

- Engineering Unit: Specify code option
- 4 mA: Zero
- 20 mA: Upper Range Limit (URL)
- Output : Linear
- Damping: 1 sec.
- Transmitter failure mode: Upscale
- Software tag characters: Blank
- Optional LCD output indicator : 0 to 100.0% linear

Any or all the above configurable parameters, including Lower range-value and Upper range-value which must be the same unit of measure, can be easily changed using the HART hand-held communicator. The transmitter database is customized with specified flange type and material, O-ring and drain/vent materials and meter code option.

Custom configuration (option)

The following data may be specified in addition to the standard configuration parameters:

- Descriptor : 16 alphanumeric characters
- Message: 32 alphanumeric characters
- Date: Day, month, year
- Damping: Seconds

- ***Transmitter with Profibus PA communication***

Transmitters are factory calibrated to customer's specified range. Calibrated range and tag number are stamped on the tag plate. If a calibration range and tag data are not specified, the transmitter will be supplied with the plate left blank and configured as follows:

- Measure Profile: Pressure
- Engineering Unit: kPa
- Output scale 0%: Lower Range Limit (LRL)
- Output scale 100%: Upper Range Limit (URL)
- Output : Linear
- Hi-Hi Limit : Upper Range Limit (URL)
- Hi Limit : Upper Range Limit (URL)
- Low Limit : Lower Range Limit (LRL)
- Low-Low Limit : Lower Range Limit (LRL)
- Limits hysteresis: 0.5% of output scale
- PV filter: 0 sec.
- Address (settable by local key): 126
- Tag : 32 alphanumeric characters

Any or all the above configurable parameters, including Lower range-value and Upper range-value which must be the same unit of measure, can be easily changed by a PC running the configuration software Smart Vision with DTM for 600T or 600T template for Siemens Simatic PDM System. The transmitter database is customized with specified flange type and material, O-ring and drain/vent materials and meter code option.

Custom configuration (option)

The following data may be specified in addition to the standard configuration parameters:

- Descriptor : 32 alphanumeric characters
- Message: 32 alphanumeric characters
- Date: Day, month, year
- PV filter: Seconds

- ***Transmitter with FOUNDATION fieldbus communication***

Transmitters are factory calibrated to customer's specified range. Calibrated range and tag number are stamped on the tag plate. If a calibration range and tag data are not specified, the transmitter will be supplied with the plate left blank and configured as follows:

- Measure Profile: Pressure
- Engineering Unit: kPa
- Output scale 0%: Lower Range Limit (LRL)
- Output scale 100%: Upper Range Limit (URL)
- Output : Linear
- Hi-Hi Limit : Upper Range Limit (URL)
- Hi Limit : Upper Range Limit (URL)
- Low Limit : Lower Range Limit (LRL)
- Low-Low Limit : Lower Range Limit (LRL)
- Limits hysteresis: 0.5% of output scale
- PV filter time: 0 sec.
- Tag : 32 alphanumeric characters

Any or all the above configurable parameters, including the range values, can be changed using any host compliant to FOUNDATION fieldbus. The transmitter database is customized with specified flange type and material, O-ring and drain/vent materials and meter code option.

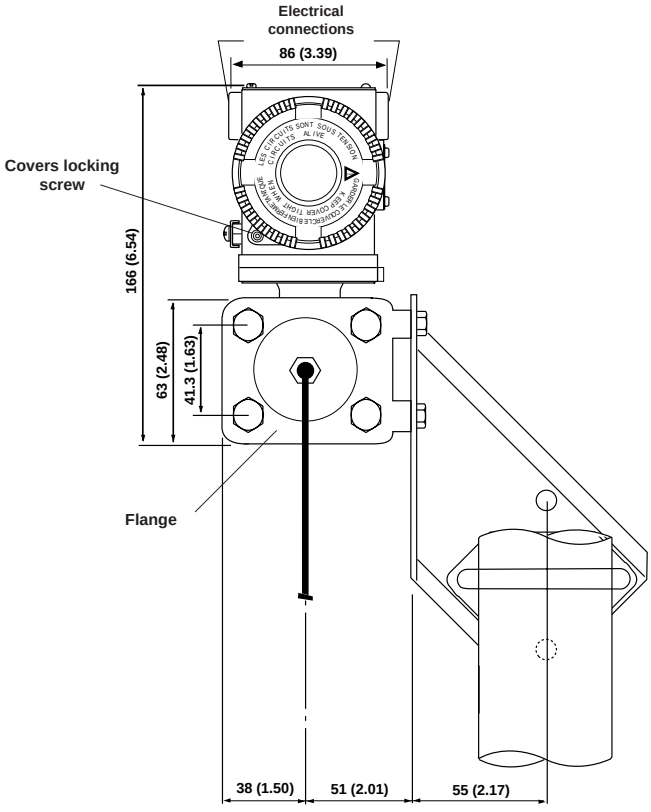
Available engineering units of pressure measure are :
Pa, kPa, MPa
inH2O@4°C, mmH2O@4°C, psi
inH2O@20°C, ftH2O@20°C, mmH2O@20°C
inHg, mmHg, Torr
g/cm^2, kg/cm^2, atm
mbar, bar

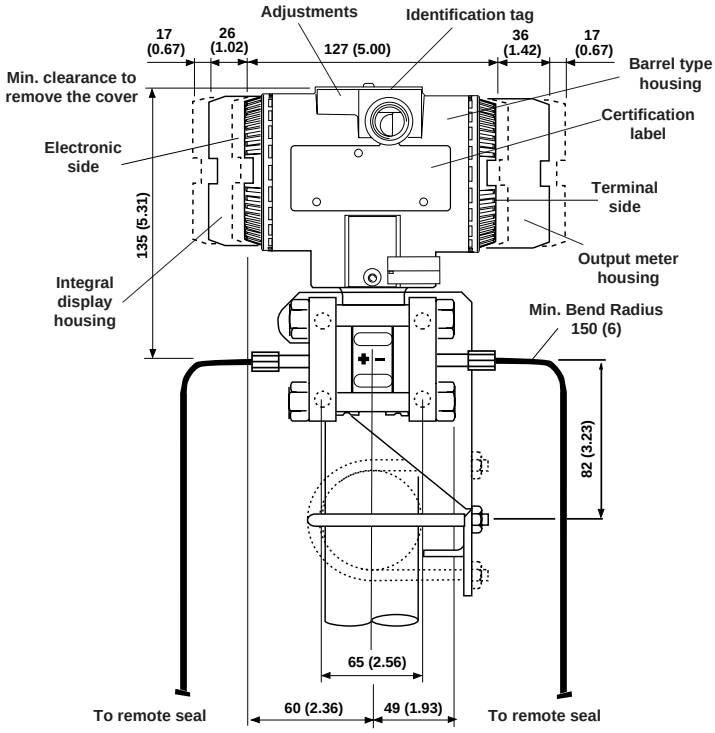
(*) Wetted parts of the transmitter.
(**) U-bolt material: AISI 400 ss; screws material: high-strength alloy steel or AISI 316 ss.

◊ Hastelloy is a Cabot Corporation trademark
◊ Galden is a Montefluos trademark
◊ Viton is a Dupont de Nemour trademark

MOUNTING DIMENSIONS
(not for construction unless certified)

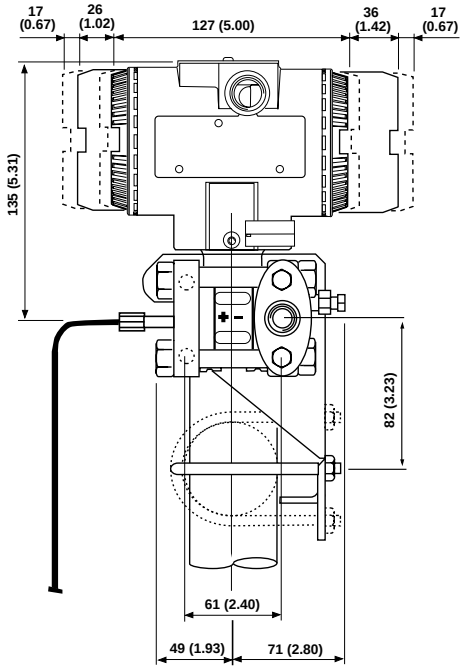
- **621ES transmitter with welded flanges on bracket for vertical or horizontal 60 mm (2in) pipe mounting (barrel housing)**





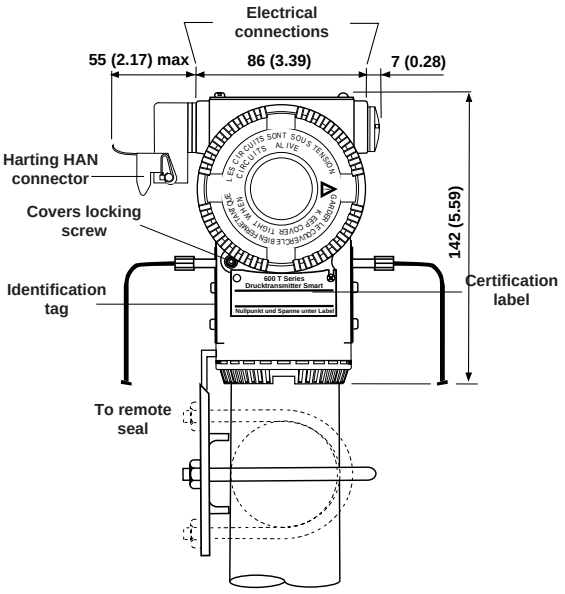
Using a blind flange for gauge measurement
*** is 56 (2.20)**
**** is 39 (1.54)**

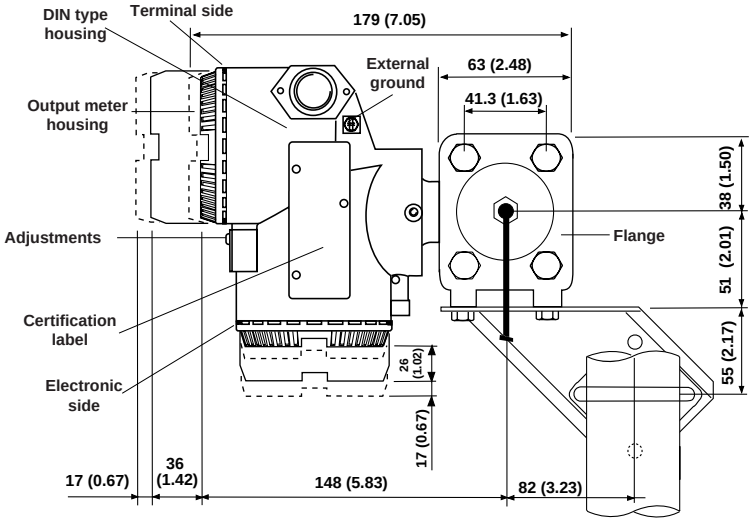
Dimensions of positive and negative side can be inverted according to high and low pressure side code selections.
Selecting one side with blind flange (for gauge) or vacuum reference, consider one capillary only to remote seal



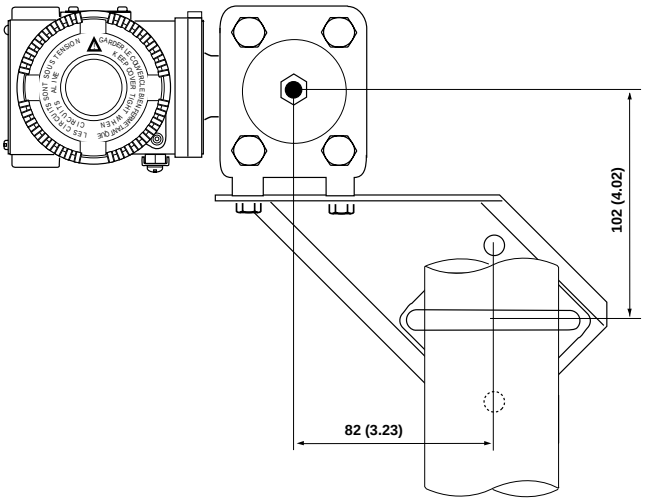
NOTE : For 621ES side with 1/2"-14 NPT threaded process flange connection, gasket groove and gaskets are in accordance with DIN 19213; removing adapter the flange provides a direct 1/4"-18 NPT thread. Bolting threads for fixing adapter or other devices (i.e. manifold etc.) on process flange is 7/16"-20 UNF.

- **621ES transmitter with welded flanges on bracket for vertical or horizontal 60 mm (2in) pipe mounting (DIN housing)**

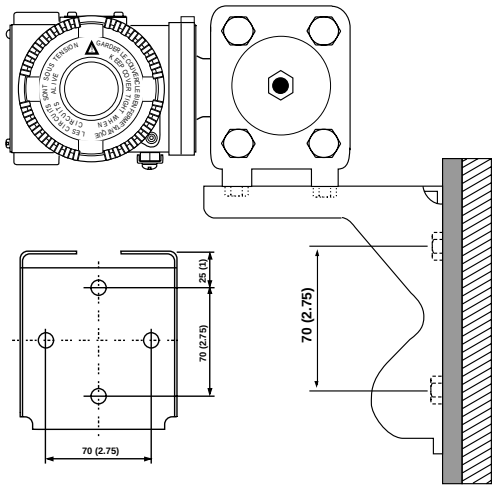




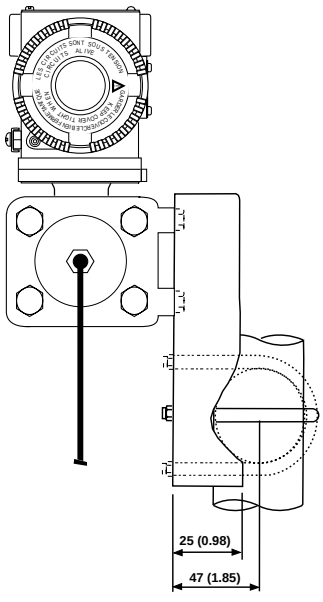
- **621ES transmitter with welded flanges on bracket for vertical or horizontal 60 mm (2in) pipe mounting**

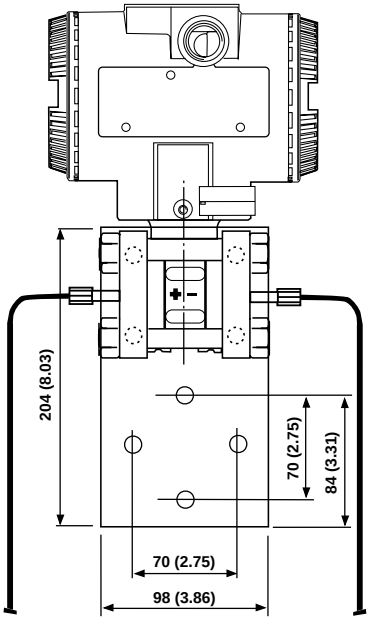


- **621ES transmitter with welded flanges on bracket for wall mounting (by four M8 screws)**

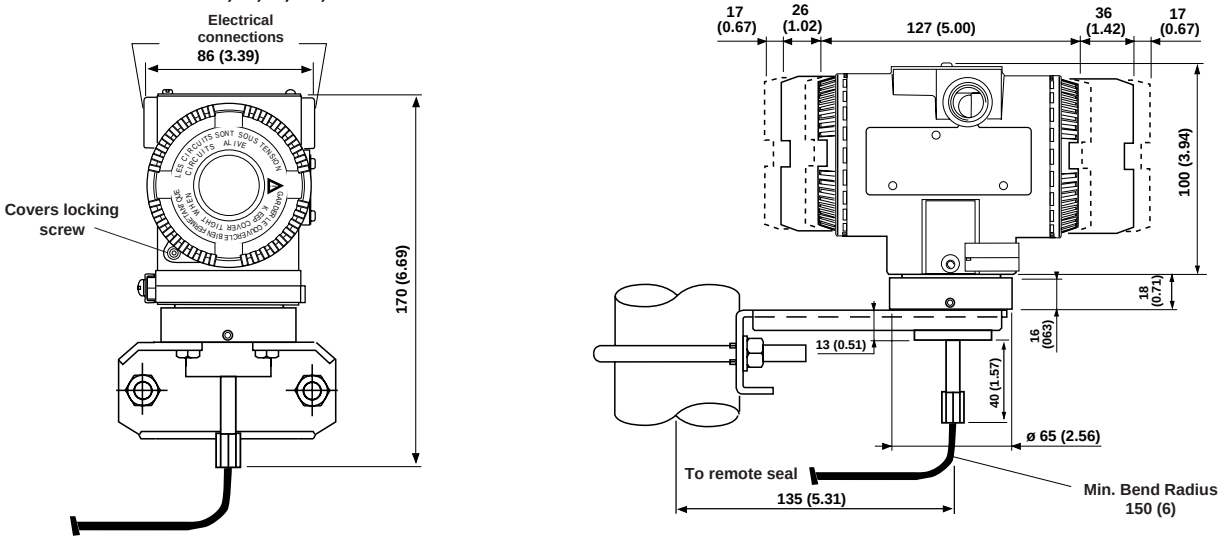


- **621ES transmitter with welded flanges on flat type (for box) bracket for vertical or horizontal 60 mm (2in) pipe mounting**

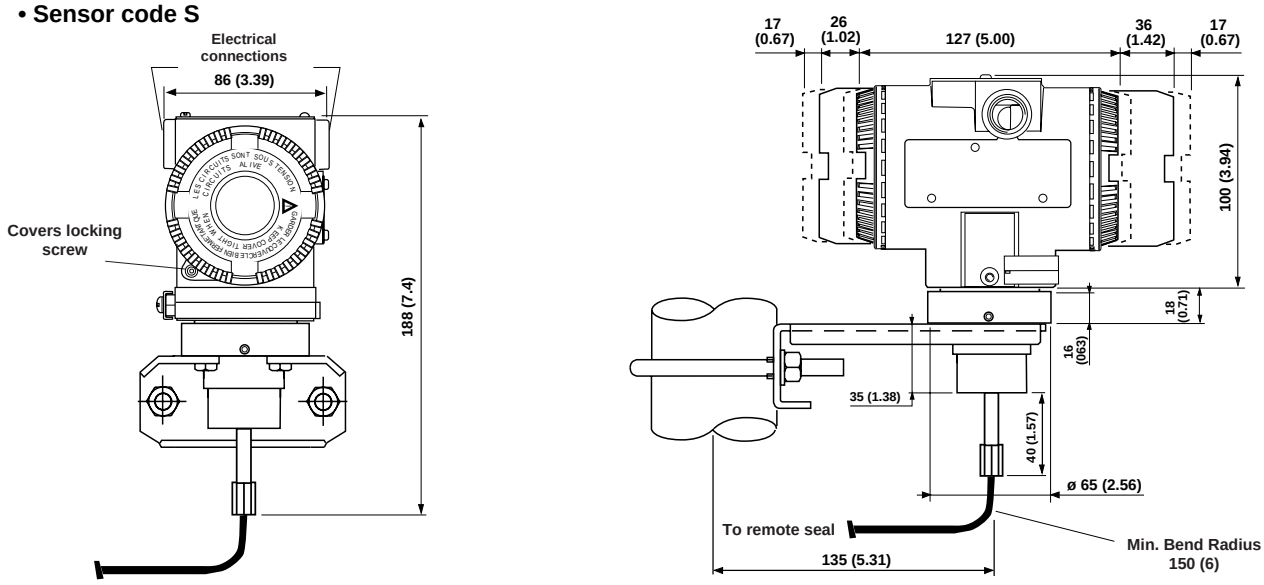




- **624ES transmitter on bracket for 60 mm (2in) pipe mounting (barrel housing)**
  - **Sensor codes D, E, F, W, U**

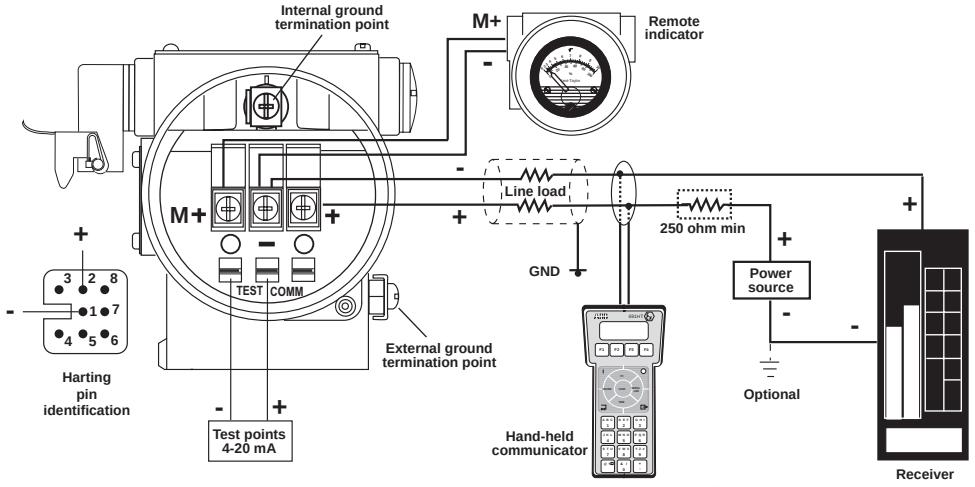


  - **Sensor code S**



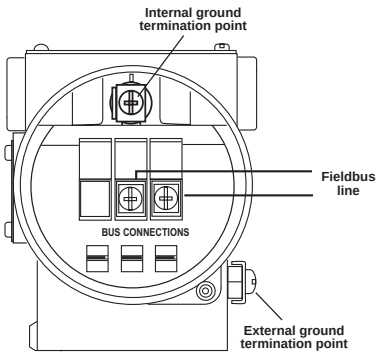
ELECTRICAL CONNECTIONS

- **HART Version**



HART hand-held communicator may be connected at any wiring termination point in the loop, providing the minimum resistance is 250 ohm. If this is less than 250 ohm, additional resistance should be added to allow communications.

- **FIELDBUS Versions**



ORDERING INFORMATION model 621ES Transmitter with remote diaphragm seal(s)

Select one character or set of characters from each category and specify complete catalog number.
Refer to supplementary code and specify another number for each transmitter if additional options are required.

PRODUCT CODE

abcde fg hij k l m n op

BASE MODEL
SENSOR
PROCESS CONNECTIONS
MOUNTING BRACKET
OUTPUT
ELECTRICAL CERTIFICATION
TOP WORKS
ELECTRICAL OPTIONS

abcde **BASE MODEL -** 1st to 5th characters

	Code
Transmitter with remote seal(s)	**621ES**

SENSOR

f **Span limits -** 6th character

1 and 10 kPa	10 and 100 mbar	4 and 40.1 inH2O	**B**
2 and 40 kPa	20 and 400 mbar	8 and 160 inH2O	**C**
3.25 and 65 kPa	32.5 and 650 mbar	13 and 260 inH2O	**N**
8 and 160 kPa	80 and 1600 mbar	32 and 642 inH2O	**D**
30 and 600 kPa	0.3 and 6 bar	4.35 and 87 psi	**E**
120 and 2400 kPa	1.2 and 24 bar	17.4 and 348 psi	**F**
400 and 8000 kPa	4 and 80 bar	58 and 1160 psi	**W**
800 and 16000 kPa	8 and 160 bar	116 and 2320	**U**

7th character

g

Diaphragm material (*)	**Fill fluid**		
AISI 316 L ss	Silicone oil		**2**
Hastelloy C276 ◊	Silicone oil	(Note)	**3**
AISI 316 L ss	Inert fluid	(Note)	**A**
Hastelloy C276 ◊	Inert fluid	(Note)	**B**
AISI 316 L ss	KTFILL-1		**L**
Hastelloy C276 ◊	KTFILL-1	(Note)	**N**

Note : can be used only with 1/2" NPT-f process connection code 5, H, J or Q at position "h" or "i"

PROCESS CONNECTIONS - 8th and 9th character

hi

High pressure side	**Low pressure side**	
All-welded remote diaphragm seal, Chemical (to be coded separately as S6X)	AISI 316 L ss 1/2" NPT-f through adapter (Note 1)	**U5**
	Hastelloy C 276 1/2" NPT-f through adapter (Note 1)	**UH**
	AISI 316 L ss 1/2" NPT-f through adapter (Note 2)	**UJ**
	Hastelloy C 276 1/2" NPT-f through adapter (Note 2)	**UQ**
	AISI 316 L ss blind flange	**UB**
	AISI 316 L ss at vacuum reference	**UW**
All-welded remote diaphragm seal, Food & Sanitary (to be coded separately as S6S)	AISI 316 L ss 1/2" NPT-f through adapter (Note 1)	**F5**
	Hastelloy C 276 1/2" NPT-f through adapter (Note 1)	**FH**
	AISI 316 L ss 1/2" NPT-f through adapter (Note 2)	**FJ**
	Hastelloy C 276 1/2" NPT-f through adapter (Note 2)	**FQ**
	AISI 316 L ss blind flange	**FB**
	AISI 316 L ss at vacuum reference	**FW**
AISI 316 L ss 1/2" NPT-f through adapter (Note 1)	All-welded remote diaphragm seal, Chemical (to be coded separately as S6X)	**5U**
Hastelloy C 276 1/2" NPT-f through adapter (Note 1)		**HU**
AISI 316 L ss 1/2" NPT-f through adapter (Note 2)		**JU**
Hastelloy C 276 1/2" NPT-f through adapter (Note 2)		**QU**
AISI 316 L ss blind flange		**BU**
AISI 316 L ss 1/2" NPT-f through adapter (Note 1)	All-welded remote diaphragm seal, Food & Sanitary (to be coded separately as S6S)	**5F**
Hastelloy C 276 1/2" NPT-f through adapter (Note 1)		**HF**
AISI 316 L ss 1/2" NPT-f through adapter (Note 2)		**JF**
Hastelloy C 276 1/2" NPT-f through adapter (Note 2)		**QF**
AISI 316 L ss blind flange		**BF**
Two all-welded remote diaphragm seals, Chemical (to be coded separately as S6X)		**UU**
Two all-welded remote diaphragm seals, Food & Sanitary (to be coded separately as S6S)		**FF**

Note 1 : drain/vent valve fitted on flange side and plug fitted on process axis
Note 2 : drain/vent valve fitted on process axis

■ Compliance to NACE class II bolting, according to specification MR0175, latest revision
(*) Process wetted-parts

◊ Hastelloy is a Cabot Corporation trademark
◊ Viton is a Dupont de Nemour trademark

10th character

j	Bolts	Gaskets (*)	
	Carbon Steel	Viton ◊	1
		PTFE	3
		None (Note)	0
	AISI 316 ss	Viton ◊	4
		PTFE	6
		None (Note)	L
	AISI 316 ss (NACE) (MWP = 16 MPa)	Viton ◊	S
		PTFE	T
		None (Note)	R
	Plated alloy steel	Viton ◊	7
		PTFE	A
		None (Note)	N

Note : not available with 1/2" NPT-f process connection code 5, H, J or Q at position "h" or "i"

MOUNTING BRACKET - 11th character

k	Shape	Material	
	None	None	1
	For pipe mounting (Not suitable for AISI housing)	Carbon steel	A
		AISI 316 L ss	B
	For wall mounting (Not suitable for AISI housing)	Carbon steel	5
		AISI 316 L ss	6
	Flat type for box	Carbon steel	C
		AISI 316 L ss	D

l **OUTPUT -** 12th character

HART digital communication and 4 to 20 mA		G
Profibus PA communication		P
FOUNDATION Fieldbus Communication		F

m **ELECTRICAL CERTIFICATION -** 13th character

General Purpose		1
ATEX Group II Category 1/2 GD - Flameproof EEx d CESI approval		F
ATEX Group II Category 1 GD - Intrinsic Safety EEx ia BASEEFA approval		L
ATEX Group II Category 3 GD - Type of protection "N" EEx nL design compliance		N
Factory Mutual (FM) and Canadian Standard Association (CSA) approvals (only with 1/2" NPT and M20 electrical connection)		8
Intrinsic Safety and Flameproof to Standards Australia SAA approval Ex ia IIC T6/T5/T4 + Ex d IIC T6/T5	(Note)	W

Note : not available with output code P and F at position "l"

TOP WORKS - 14th character

n	Housing material	Electrical connection		
	Aluminium alloy (Barrel version)	1/2" NPT		1
		M20 x 1.5 (CM 20)		2
		Pg 13.5		3
		1/2" GK		4
		Harting HAN connector - straight entry	(Note 1, 2)	5
		Harting HAN connector - angle entry	(Note 1, 2)	6
	AISI 316 L ss (Barrel version)	1/2" NPT		A
		M20 x 1.5 (CM 20)		C
		Pg 13.5		D
		1/2" GK		F
	Aluminium alloy (DIN version)	Pg 13.5	(Note 1)	7
		M20 x 1.5 (CM 20)	(Note 1)	8
		Harting HAN connector - straight entry	(Note 1, 2)	K

Note 1 : requires certification code 1 at position "m"
Note 2 : not available with output code P and F at position "l"

ELECTRICAL OPTIONS - 15th character

o **Internal meter type**

None		1
Digital LCD output indicator linear 0-100%, user scalable	(Note)	3
Digital LCD output indicator linear scale (specify range and engineering units)	(Note)	5
Analog output indicator linear 0-100% scale	(Note)	7
Analog output indicator square root 0-10 scale	(Note)	8
Analog output indicator, special graduation (to be specified for linear or square root scale)	(Note)	9
Digital LCD integral display		A
Digital LCD integral display and digital LCD output indicator linear 4-20 mA	(Note)	C
Digital LCD integral display and analog output indicator linear 0-100% scale	(Note)	E
Programmable signal meter and HART configurator (CoMeter)	(Note)	P
Programmable signal meter and HART configurator (CoMeter) and digital LCD integral display	(Note)	R

Note : not available with output code P and F at position "l"

16th character

p	Electrical options	Labels language	
	Standard terminal block	English	1
		German	2
		Italian	7
	Surge protector (Note)	English	3
		German	4
		Italian	8
	Terminal block for external meter (Note)	English	5
		German	6
		Italian	9

Note : not available with output code P and F at position "l"

ORDERING INFORMATION model 624ES Transmitter with remote diaphragm seal

Select one character or set of characters from each category and specify complete catalog number.
Refer to supplementary code and specify another number for each transmitter if additional options are required.

PRODUCT CODE

abcde f g h i j k l m n op

0

- **BASE MODEL**
- **SENSOR**
- **PROCESS CONNECTION**
- **REFERENCE CHAMBER**
- **MOUNTING BRACKET**
- **OUTPUT**
- **ELECTRICAL CERTIFICATION**
- **TOP WORKS**
- **ELECTRICAL OPTIONS**

abcde **BASE MODEL -** 1st to 5th characters

	Code
Pressure transmitter with remote seal	**624ES**

SENSOR

f **Span limits -** 6th character

8 and 160 kPa	80 and 1600 mbar	32 and 642 inH_2O	**D**
30 and 600 kPa	0.3 and 6 bar	4.35 and 87 psi	**E**
120 and 2400 kPa	1.2 and 24 bar	17.4 and 348 psi	**F**
400 and 8000 kPa	4 and 80 bar	58 and 1160 psi	**W**
800 and 16000 kPa	8 and 160 bar	116 and 2320 psi	**U**
2100 and 42000 kPa	21 and 420 bar	305 and 6090 psi	**S**

7th character

g

Diaphragm material (*)	**Fill fluid**		
AISI 316 L ss	Silicone oil	(Not applicable for sensor code "S" with S6B Button seal)	**0**
None (MUST BE USED FOR SENSOR CODE "S" WITH S6B BUTTON SEAL)			**U**

h **PROCESS CONNECTION -** 8th character

All-welded remote diaphragm seal (to be coded separately as S6X)	**U**

i **REFERENCE CHAMBER (negative) -** 9th character

At atmospheric pressure for gauge measurement	**B**
At vacuum for absolute measurement	**W**

MOUNTING BRACKET - 10th character

j **Material**

None	**1**
Carbon steel Not available with AISI 316 L ss housing material code A, C, D, F at position "n"	**2**
AISI 316 L ss	**3**

k 11th character

Use code	**0**

12th character

l **OUTPUT**

HART digital communication and 4 to 20 mA	**G**
Profibus PA communication	**P**
FOUNDATION Fieldbus Communication	**F**

m **ELECTRICAL CERTIFICATION -** 13th character

General Purpose	**1**
ATEX Group II Category 1/2 GD - Flameproof EEx d CESI approval	**F**
ATEX Group II Category 1 GD - Intrinsic Safety EEx ia BASEEFA approval	**L**
ATEX Group II Category 3 GD - Type of protection "N" EEx nL design compliance	**N**
Factory Mutual (FM) and Canadian Standard Association (CSA) approvals (only with 1/2" NPT and M20 electrical connection)	**8**
Intrinsic Safety and Flameproof to Standards Australia SAA approval Ex ia IIC T6/T5/T4 + Ex d IIC T6/T5 (Note)	**W**

Note : not available with output code P and F at position "l"

■ Compliance to NACE class II bolting, according to specification MR0175, latest revision

ORDERING INFORMATION model 624ES Transmitter with remote diaphragm seal

TOP WORKS - 14th character

n	**Housing material**	**Electrical connection**		
	Aluminium alloy (Barrel version)	1/2" NPT		1
		M20 x 1.5 (CM 20)		2
		Pg 13.5		3
		1/2" GK		4
		Harting HAN connector - straight entry	(Note 1, 2)	5
		Harting HAN connector - angle entry	(Note 1, 2)	6
	AISI 316 L ss (Barrel version)	1/2" NPT		A
		M20 x 1.5 (CM 20)		C
		Pg 13.5		D
		1/2" GK		F

Note 1 : requires certification code 1 at position "m"
Note 2 : not available with output code P and F at position "l"

ELECTRICAL OPTIONS - 15th character

o	**Internal meter type**		
	None		1
	Digital LCD output indicator linear 0-100%, user scalable	(Note)	3
	Digital LCD output indicator linear scale (specify range and engineering units)	(Note)	5
	Analog output indicator linear 0-100% scale	(Note)	7
	Analog output indicator, special graduation (to be specified for linear scale)	(Note)	9
	Digital LCD integral display		A
	Digital LCD integral display and digital LCD output indicator linear 4-20 mA	(Note)	C
	Digital LCD integral display and analog output indicator linear 0-100% scale	(Note)	E
	Programmable signal meter and HART configurator (CoMeter)	(Note)	P
	Programmable signal meter and HART configurator (CoMeter) and digital LCD integral display	(Note)	R

Note : not available with output code P and F at position "l"

16th character

p	**Electrical options**	**Labels language**	
	Standard terminal block	English	1
		German	2
		Italian	7
	Surge protector (Note)	English	3
		German	4
		Italian	8
	Terminal block for external meter (Note)	English	5
		German	6
		Italian	9

Note : not available with output code P and F at position "l"

ORDERING INFORMATION

Select one character or set of characters from each category and specify complete catalog number in addition to each transmitter code, if required.

PRODUCT CODE

ab c d e f

BASE MODEL
CONFIGURATION
CALIBRATION
PROCEDURE
INTEGRAL MOUNTING OF ASSOCIATED INSTRUMENTATION

ab **BASE MODEL** - 1st to 2nd characters

	Code
Supplementary code	**SC**

c **CONFIGURATION -** 3rd character

Standard - Pressure = kPa; Temperature = deg. C	**1**
Standard - Pressure = inH2O/psi (@ 20°C); Temperature = deg. F	**2**
Standard - Pressure = inH2O/psi (@ 4°C); Temperature = deg. F	**3**
Standard - Pressure = inH2O/psi (@ 20°C); Temperature = deg. C	**4**
Standard - Pressure = inH2O/psi (@ 4°C); Temperature =- deg. C	**5**
Custom	**C**

d **CALIBRATION -** 4th character

Calibration range	Calibration	Certificate	
Standard (max span = 0 to URL)	Reference temperature	None	**1**
		Yes (3 copies)	**2**
	Operating temperature	None	**3**
		Yes (3 copies)	**4**
At specified range	Reference temperature	None	**5**
		Yes (3 copies)	**6**
	Operating temperature	None	**7**
		Yes (3 copies)	**8**

e 5th character

PROCEDURE	Material traceability	
None	None	**0**
	To EN10204 - 3.1.B (certificates for flanges, adapters, diaphragms)	**A**
	To EN10204 - 2.1 (declaration for instrument)	**B**

f **INTEGRAL MOUNTING OF ASSOCIATED INSTRUMENTATION -** 6th character

None	**0**

The Company's policy is one of continuous product improvement and the right is reserved to modify the specifications contained herein without notice.

SS/62XES-RS Rev. 10

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