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

Specifications:

- 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
FUNCTIONAL SPECIFICATIONS

Range and span limits

<table>
<thead>
<tr>
<th>Sensor code</th>
<th>Upper Range Limit (URL)</th>
<th>Lower Range Limit (LRL)</th>
<th>Turndown ratio (TD) 624EG</th>
<th>624EA</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>160 kPa 1600 mbar 642 inH2O</td>
<td>0.07 kPa abs 0.7 mbar abs 0.5 mmHg</td>
<td>15</td>
<td>60 100 10 20 60</td>
</tr>
<tr>
<td>E</td>
<td>600 kPa 6 bar 87 psi</td>
<td>0.07 kPa abs 0.7 mbar abs 0.5 mmHg</td>
<td>15</td>
<td>60 100 10 20 60</td>
</tr>
<tr>
<td>F</td>
<td>2400 kPa 24 bar 348 psi</td>
<td>0.07 kPa abs 0.7 mbar abs 0.5 mmHg</td>
<td>15</td>
<td>60 100 10 20 60</td>
</tr>
<tr>
<td>W</td>
<td>8000 kPa 80 bar 1160 psi</td>
<td>0.07 kPa abs 0.7 mbar abs 0.5 mmHg</td>
<td>15</td>
<td>60 100 10 20 60</td>
</tr>
<tr>
<td>U</td>
<td>16000 kPa 160 bar 2320 psi</td>
<td>0.07 kPa abs 0.7 mbar abs 0.5 mmHg</td>
<td>15</td>
<td>60 100 10 20 60</td>
</tr>
<tr>
<td>S</td>
<td>42000 kPa 420 bar 6090 psi</td>
<td>1 kPa abs 10 mbar abs 0.15 psia</td>
<td>10</td>
<td>20 30 10 20 30</td>
</tr>
</tbody>
</table>

Span limits
Maximum span = URL
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
Selective time constant: 0, 0.25, 0.5, 1, 2, 4, 8 or 16 sec.

Volume of process chamber
16 cm³ approx (1 in³)

Volumetric displacement
< 0.020 cm³ (0.0015 in³) for max span.

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)

Temperature limits °C (°F):
- Ambient (is the operating temperature)
  - Lower ambient limit for LCD indicators: -20 °C (-4 °F)
  - Upper ambient limit for CoMeter: +70 °C (+158 °F)
- Process (1)
  - Lower limit: refer to lower ambient limits
  - Upper limit:
    - Silicone oil and KTFILL-1 filling: 120 °C (248 °F) (2)
    - Inert fluid filling: 100 °C (212 °F) (3)
  - Process temperature above 85 °C (185 °F) requires derating the ambient limits by 1.5 : 1 ratio.
- Storage
  - Lower limit: -50 °C (-58 °F); -40 °C (-40 °F) for LCD indicators
  - Upper limit:
    - Silicone oil and KTFILL-1 filling: 120 °C (248 °F) (2)
    - Inert fluid filling: 100 °C (212 °F) (3)
  - Process temperature above 85 °C (185 °F) requires derating the ambient limits by 1.5 : 1 ratio.

Overpressure limits (without damage to the transmitter)
- Lower: 0.07 kPa abs, 0.7 mbar abs, 0.5 mmHg (double the value with inert filling)
- Upper
  - 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

Proof pressure
The transmitter meets SAMA PMC 27.1 requirements and can be exposed without leaking to line pressure of up to
- 31.5 MPa, 315 bar, 4500 psi for sensor codes D, E, F, W, U
- 80 MPa, 800 bar, 11600 psi for sensor code S

Span limits
Maximum span = URL
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
Selective time constant: 0, 0.25, 0.5, 1, 2, 4, 8 or 16 sec.

Volume of process chamber
16 cm³ approx (1 in³)

Volumetric displacement
< 0.020 cm³ (0.0015 in³) for max span.

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)
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

<table>
<thead>
<tr>
<th>Voltage (volts)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.5</td>
<td>no link on output indicator plugs</td>
</tr>
<tr>
<td>10.7</td>
<td>with optional output indicator plugs and surge protection</td>
</tr>
<tr>
<td>12.1</td>
<td>with CoMeter</td>
</tr>
<tr>
<td>12.5</td>
<td>with optional output LCD indicator</td>
</tr>
<tr>
<td>13.3</td>
<td>with optional surge protection</td>
</tr>
<tr>
<td>14.1</td>
<td>with optional output analog indicator</td>
</tr>
<tr>
<td>14.3</td>
<td>with integral display</td>
</tr>
</tbody>
</table>

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 (± 99999 counts) programmable with 7.6 mm. high (3 in), 7-segment numeric characters plus sign and digital point
  - 10-segment 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


Output interface

Profibus PA communication according to Profibus DP 50170 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, 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.**

**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
  - **Model 624EG**
    - ± 0.075% for TD from 1:1 to 15:1
    - ± 0.0075% x \( \frac{\text{URL}}{\text{Span}} \) for TD from 15:1 to 60:1
    - (± 0.015% x \( \frac{\text{URL}}{\text{Span}} \) for sensor code S for TD from 1:1 to 10:1)
  - **Model 624EA**
    - ± 0.075% for TD from 1:1 to 10:1
    - ± 0.01% x \( \frac{\text{URL}}{\text{Span}} \) for TD from 10:1 to 20:1
    - ± 0.0075% x \( \frac{\text{URL}}{\text{Span}} \) for sensor code S for TD from 1:1 to 10:1
    - ± 0.01% x \( \frac{\text{URL}}{\text{Span}} \) for sensor code S for TD from 1:1 to 10:1

**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**

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

<table>
<thead>
<tr>
<th>Model</th>
<th>Sensor code</th>
<th>for TD up to</th>
</tr>
</thead>
<tbody>
<tr>
<td>624EG</td>
<td>D,E,F,W,U</td>
<td>15:1 ± (0.08% URL + 0.15% span)</td>
</tr>
<tr>
<td></td>
<td>S</td>
<td>10:1 ± (0.10% URL + 0.15% span)</td>
</tr>
<tr>
<td>624EA</td>
<td>D,E,F,W,U</td>
<td>10:1 ± (0.08% URL + 0.15% span)</td>
</tr>
<tr>
<td></td>
<td>S</td>
<td>10:1 ± (0.10% URL + 0.15% span)</td>
</tr>
</tbody>
</table>

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)

**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)

**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.

Mounting position
No effect.

Stability
± 0.15% of URL over a thirty-six-month period

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

Materials
Process isolating diaphragms (*)
AISI 316 L ss, Hastelloy C276 ◊; Tantalum; Hastelloy C276 ◊ on AISI 316 L ss gasket seat.

Process connection (*)
AISI 316 L ss; Hastelloy C ◊.

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; AISI316 L ss.

Sensor housing : AISI 316 L ss

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

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 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; 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)
Cleaning procedure for oxygen service
Material traceability; manifold

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 (FOUNDATION-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 (FOUNDATION-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. 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 (Tamb +85°C)/T6 (Tamb +70°C) Class 1 Zone 1;
  Ex ia IIC T4 (Tamb +85°C)/T5 (Tamb +55°C) T6 Class 1 Zone 0
Process connections
1/2 NPT-f or DIN-EN837-1 - G 1/2"B

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 mm² (14 AWG) and three connection points for test and communication purposes.
- Fieldbus versions
  Two terminals for signal wiring (bus connection) up to 2.5 mm² (14 AWG)

Grounding
Internal and external 6 mm² (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)
1.7 kg approx (4 lb); add 1.5 kg (3.4 lb) for AISI housing. Add 650 g (1.5 lb) for packing.

Packaging
Carton 26 x 26 x 18 cm approx (10 x 10 x 7 in).

◊ Hastelloy is a Cabot Corporation trademark
◊ Galden is a Montefluos trademark
(*) Wetted parts of the transmitter.
(**) U-bolt material: AISI 400 ss; screws material: high-strength alloy steel or AISI 316 ss.

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.

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/cm², kg/cm², atm
- mbar, bar
MOUNTING DIMENSIONS
(not for construction unless certified)

- Sensor codes D, E, F, W, U

- Sensor code S

ELECTRICAL CONNECTIONS

- HART Version

- FIELDBUS Versions

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.
ORDERING INFORMATION  model 624EG Gauge Pressure Transmitter

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**

<table>
<thead>
<tr>
<th>abcde</th>
<th>BASE MODEL - 1st to 5th characters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gauge pressure transmitter</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SENSOR**

<table>
<thead>
<tr>
<th>f</th>
<th>Span limits - 6th character</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>2.67 and 160 kPa</td>
</tr>
<tr>
<td>E</td>
<td>10 and 600 kPa</td>
</tr>
<tr>
<td>F</td>
<td>40 and 2400 kPa</td>
</tr>
<tr>
<td>W</td>
<td>133 and 8000 kPa</td>
</tr>
<tr>
<td>U</td>
<td>267 and 16000 kPa</td>
</tr>
<tr>
<td>S</td>
<td>2100 and 42000 kPa</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>g</th>
<th>Diaphragm material (*)</th>
<th>Fill fluid</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>AISI 316 L ss</td>
<td>Silicone oil (***)</td>
</tr>
<tr>
<td>6</td>
<td>Hastelloy C276 (AISI seat)</td>
<td>Silicone oil (***) (Note)</td>
</tr>
<tr>
<td>3</td>
<td>Hastelloy C276</td>
<td>Silicone oil (***)</td>
</tr>
<tr>
<td>5</td>
<td>Tantalum</td>
<td>Inert fluid</td>
</tr>
<tr>
<td>A</td>
<td>AISI 316 L ss</td>
<td>Inert fluid</td>
</tr>
<tr>
<td>7</td>
<td>Hastelloy C276 (AISI seat)</td>
<td>Inert fluid (Note)</td>
</tr>
<tr>
<td>B</td>
<td>Hastelloy C276</td>
<td>Inert fluid</td>
</tr>
<tr>
<td>D</td>
<td>Tantalum</td>
<td>KTFILL-1 (**)</td>
</tr>
<tr>
<td>L</td>
<td>AISI 316 L ss</td>
<td>KTFILL-1 (**) (Note)</td>
</tr>
<tr>
<td>N</td>
<td>Hastelloy C276 (AISI seat)</td>
<td>KTFILL-1 (**)</td>
</tr>
<tr>
<td>P</td>
<td>Hastelloy C276</td>
<td>KTFILL-1 (**)</td>
</tr>
</tbody>
</table>

Note: not available with sensor code S at position "f".

**BOTTOM WORKS**

<table>
<thead>
<tr>
<th>h</th>
<th>Process connection (*) - 8th character</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AISI 316 L ss</td>
</tr>
<tr>
<td>3</td>
<td>Hastelloy C276 (AISI seat)</td>
</tr>
<tr>
<td>2</td>
<td>(Not applicable with tantalum diaphragm code 5 and D at position &quot;g&quot;)</td>
</tr>
</tbody>
</table>

**MOUNTING BRACKET**

<table>
<thead>
<tr>
<th>i</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>Carbon steel</td>
</tr>
<tr>
<td>3</td>
<td>AISI 316 L ss</td>
</tr>
</tbody>
</table>

**OUTPUT**

<table>
<thead>
<tr>
<th>j</th>
<th>Use code</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>k</th>
<th>Use code</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>l</th>
<th>HART digital communication and 4 to 20 mA</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td></td>
</tr>
<tr>
<td>P</td>
<td></td>
</tr>
</tbody>
</table>

Compliance to NACE class II bolting, according to specification MR0175, latest revision ▶ Hastelloy is a Cabot Corporation trademark

(*) Process wetted parts

(**) Not available for oxygen service
### ORDERING INFORMATION

**model 624EG Gauge Pressure Transmitter**

**TOP WORKS - 14th character**

<table>
<thead>
<tr>
<th>Housing material</th>
<th>Electrical connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium alloy</td>
<td>1/2&quot; NPT</td>
</tr>
<tr>
<td>(Barrel version)</td>
<td>M20 x 1.5 (CM 20)</td>
</tr>
<tr>
<td></td>
<td>Pg 13.5</td>
</tr>
<tr>
<td></td>
<td>1/2&quot; GK</td>
</tr>
<tr>
<td></td>
<td>Harting HAN connector - straight entry (Note 1, 2)</td>
</tr>
<tr>
<td></td>
<td>Harting HAN connector - angle entry (Note 1, 2)</td>
</tr>
<tr>
<td>AISI 316 L ss</td>
<td>1/2&quot; NPT</td>
</tr>
<tr>
<td>(Barrel version)</td>
<td>M20 x 1.5 (CM 20)</td>
</tr>
<tr>
<td></td>
<td>Pg 13.5</td>
</tr>
<tr>
<td></td>
<td>1/2&quot; GK</td>
</tr>
</tbody>
</table>

**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**

<table>
<thead>
<tr>
<th>Internal meter type</th>
<th>Electrical options</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Programmable signal meter and HART configurator (CoMeter) and digital LCD integral display (Note)</td>
</tr>
<tr>
<td></td>
<td>Programmable signal meter and HART configurator (CoMeter) (Note)</td>
</tr>
<tr>
<td></td>
<td>Digital LCD integral display and digital LCD output indicator linear 4-20 mA (Note)</td>
</tr>
<tr>
<td></td>
<td>Digital LCD integral display and analog output indicator linear 0-100% scale (Note)</td>
</tr>
<tr>
<td></td>
<td>Analog output indicator linear 0-100% scale (Note)</td>
</tr>
<tr>
<td></td>
<td>Digital LCD output indicator, special graduation (to be specified for linear scale) (Note)</td>
</tr>
<tr>
<td></td>
<td>Digital LCD output indicator linear scale (specify range and engineering units) (Note)</td>
</tr>
<tr>
<td></td>
<td>Digital LCD output indicator linear 0-100%, user scalable (Note)</td>
</tr>
</tbody>
</table>

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

**Labels language**

<table>
<thead>
<tr>
<th>Standard terminal block</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>German</td>
</tr>
<tr>
<td></td>
<td>Italian</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Surge protector (Note)</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>German</td>
</tr>
<tr>
<td></td>
<td>Italian</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Terminal block for external meter (Note)</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>German</td>
</tr>
<tr>
<td></td>
<td>Italian</td>
</tr>
</tbody>
</table>

**Note:** not available with output code P and F at position "l"
ORDERING INFORMATION model 624EA Absolute Pressure Transmitter

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

<table>
<thead>
<tr>
<th>BASE MODEL</th>
<th>SENSOR</th>
<th>BOTTOM WORKS</th>
<th>MOUNTING BRACKET</th>
<th>OUTPUT</th>
<th>ELECTRICAL CERTIFICATION</th>
<th>TOP WORKS</th>
<th>ELECTRICAL OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>abcde</td>
<td>f g i j k l m n</td>
<td>a b c d e f g h i j k</td>
<td>0 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Absolute pressure transmitter</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>624EA</td>
<td></td>
</tr>
</tbody>
</table>

**SENSOR** - 6th character

<table>
<thead>
<tr>
<th>Span limits</th>
<th>Fill fluid</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 and 160 kPa</td>
<td>80 and 1600 mbar</td>
</tr>
<tr>
<td>50 and 600 kPa</td>
<td>0.3 and 6 bar</td>
</tr>
<tr>
<td>120 and 2400 kPa</td>
<td>1.2 and 24 bar</td>
</tr>
<tr>
<td>400 and 8000 kPa</td>
<td>4 and 80 bar</td>
</tr>
<tr>
<td>800 and 16000 kPa</td>
<td>8 and 160 bar</td>
</tr>
<tr>
<td>2100 and 42000 kPa</td>
<td>21 and 420 bar</td>
</tr>
</tbody>
</table>

### BOTTOM WORKS - 8th character

<table>
<thead>
<tr>
<th>Material</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>AISI 316 L ss</td>
<td>1/2&quot; NPT-F</td>
</tr>
<tr>
<td>Hastelloy C276</td>
<td>DIN-EN837-1 - G 1/2&quot;B</td>
</tr>
</tbody>
</table>

### MOUNTING BRACKET - 10th character

**Material**

<table>
<thead>
<tr>
<th>None</th>
<th>Carbon steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available with AISI 316 L ss housing material code A, C, D, F at position “n”</td>
<td></td>
</tr>
</tbody>
</table>

### OUTPUT

<table>
<thead>
<tr>
<th>HART digital communication and 4 to 20 mA</th>
<th>Profibus PA communication</th>
<th>FOUNDATION Fieldbus communication</th>
</tr>
</thead>
</table>

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

Hastelloy is a Cabot Corporation trademark

(*) Process wetted parts
(**) Not available for oxygen service
ORDERING INFORMATION model 624EA Absolute Pressure Transmitter

### ELECTRICAL CERTIFICATION - 13th character

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

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

### TOP WORKS - 14th character

#### Housing material

<table>
<thead>
<tr>
<th>Material</th>
<th>Electrical connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium alloy (Barrel version)</td>
<td>1/2&quot; NPT&lt;br&gt;M20 x 1.5 (CM 20)&lt;br&gt;Pg 13.5&lt;br&gt;1/2&quot; GK&lt;br&gt;Harting HAN connector - straight entry  (Note 1, 2)&lt;br&gt;Harting HAN connector - angle entry  (Note 1, 2)</td>
</tr>
<tr>
<td>AISI 316 L ss (Barrel version)</td>
<td>1/2&quot; NPT&lt;br&gt;M20 x 1.5 (CM 20)&lt;br&gt;Pg 13.5&lt;br&gt;1/2&quot; GK</td>
</tr>
</tbody>
</table>

Note 1: requires certification code 1 at position “m”
Note 2: not available with output code P and F at position "f".

### ELECTRICAL OPTIONS - 15th character

#### Internal meter type

- None
- Digital LCD output indicator linear 0-100%, user scalable (Note)
- Digital LCD output indicator linear scale (specify range and engineering units) (Note)
- Analog output indicator linear 0-100% scale (Note)
- Analog output indicator, special graduation (to be specified for linear scale) (Note)
- Digital LCD integral display
- Digital LCD integral display and digital LCD output indicator linear 4-20 mA (Note)
- Digital LCD integral display and analog output indicator linear 0-100% scale (Note)
- Programmable signal meter and HART configurator (CoMeter) (Note)
- Programmable signal meter and HART configurator (CoMeter) and digital LCD integral display (Note)

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

#### 16th character

<table>
<thead>
<tr>
<th>Electrical options</th>
<th>Labels language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard terminal block</td>
<td>English&lt;br&gt;German&lt;br&gt;Italian</td>
</tr>
<tr>
<td>Surge protector (Note)</td>
<td>English&lt;br&gt;German&lt;br&gt;Italian</td>
</tr>
<tr>
<td>Terminal block for external meter (Note)</td>
<td>English&lt;br&gt;German&lt;br&gt;Italian</td>
</tr>
</tbody>
</table>

Note: not available with output code P and F at position "f".
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**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC</td>
<td>SC</td>
<td>SC</td>
<td>SC</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ab</td>
<td>ab</td>
<td>ab</td>
<td>ab</td>
</tr>
</tbody>
</table>

**CONFIGURATION** - 3rd character

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Standard - Pressure = kPa; Temperature = deg. C</td>
<td>2</td>
<td>Standard - Pressure = inH2O/psi (@20°C); Temperature = deg. F</td>
</tr>
<tr>
<td>3</td>
<td>Standard - Pressure = inH2O/psi (@4°C); Temperature = deg. F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Standard - Pressure = inH2O/psi (@4°C); Temperature = deg. C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Custom</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CALIBRATION** - 4th character

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>d</td>
<td>Reference temperature</td>
<td>d</td>
<td>Reference temperature</td>
</tr>
<tr>
<td>d</td>
<td>Operating temperature</td>
<td>d</td>
<td>Operating temperature</td>
</tr>
</tbody>
</table>

**PROCEDURE**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>e</td>
<td>None</td>
<td>e</td>
<td>None</td>
</tr>
<tr>
<td>e</td>
<td>Oxygen service cleaning (Note 1)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>f</td>
<td>None</td>
<td>f</td>
<td>None</td>
</tr>
<tr>
<td>f</td>
<td>For valve manifold</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1: not applicable to transmitter model 624EG/EA (sensor code S)