

143DP Intelligent d/p Transmitter

- Communication HART or FOXCOM
- Conventional operation with local keys
- Easy adaptation to the measuring point without calibration at the workshop
- Backdocumentation of measuring point
- Continuous self-diagnostics
- Configurable safety value
- Software lock for keys and reconfiguration
- Simulation of analog output for loop-check
- Local display in %, mA or physical units
- Signal noise suppression by Smart Smoothing
- Linear, square root or customized characteristic
- Process temperature from -50 °C to +120 °C (-58 °F to +248 °F)
- Materials for use with aggressive media
- Micro sintermetall sensor technology
- Separate mounting of sensor and amplifier with remote amplifier mounting kit



Intelligent transmitter for differential pressure and flow of liquids, vapours and gases on vessels, pipes and hydraulic systems. Easy remote configuration and supervision with PC or Universal Handterminal. The devices also can be operated conventionally using the local keys. Total I/A series measurement integration is possible thru FOXCOM communication protocol. The transmitters are approved for use in hazardous areas.

Measuring Ranges, Overload Resistance

| Span Code | Measuring span | | Measuring limits | Overload Limit |
|-----------|--------------------------------------|---|---|---------------------------------|
| | min. | max. | | |
| -A | 3.2 mbar 1.28 in H ₂ O | 64 mbar 25.7 in H ₂ O | -64 ... 64 mbar -25.7 ... 25.7 in H ₂ O | up to static pressure rating |
| -B | 32 mbar 12.8 in H ₂ O | 640 mbar 258 in H ₂ O | -640 ... 640 mbar -258 ... 258 in H ₂ O | |
| -C | 200 mbar 80.3 in H ₂ O | 4 000 mbar 1 606 in H ₂ O | -4 000 ... 4 000 mbar -1 606 ... 1 606 in H ₂ O | |

Output

HART and FOXCOM Analog Mode

- Lower range value. continuously adjustable within the measuring limits
- Turn-down 1:1 to 1:50
- Signal range 4 to 20 mA / 20 to 4 mA
- Operating range 3.8 to 20.5 mA
- Permitted load. $R_{Lmax} = (U_S - 12V) / 0.023A$
(U_S = Supply voltage)

Accuracy

- Analog output. $\pm 0.1\%$
- Digital output $\pm 0.075\%$
- Transfer function linear or square root with low flow cut-off

FOXCOM Digital Mode

- Output current const. approx. 12 mA

Operation condition effects

- Ambient temperature -10 ... +70 °C (14 ... 158 °F)
- Zero $\leq 0.03\% / 10\text{ K}$
- Span $\pm 0.07\% / 10\text{ K}$
- Total

$$\left(0.03 \frac{\text{max. sp.}}{\text{adjusted sp.}} \pm 0.07 \frac{\text{measured value}}{\text{adjusted span}}\right) \% / 10K$$
 (sp. = measuring span)
 $< -10\text{ °C} / > +70\text{ °C}$ twice the values
- Process temperature $\leq 0.1\% / 10\text{ K}$
- Mounting position. adjustable
- Mech. vibrations
 up to 500 Hz and 2 g. $\leq 0.2\%$
- Static pressure. $\leq 0.2\% / 100\text{ bar}$



Power supply

Supply voltage DC 12 ... 42 V
Permitted ripple V_{PP} $\leq 1\%$

Local display

LCD indicator 5 digits, configurable in physical units, % or mA

For complete specifications, refer to Product Specification Sheet PSS EMP0630 A-(en)

Accessories

Device prepared for pressure seals mounting see Product Specifications PSS EMP9001/2 A-(en)
"S990A Diaphragm Seal for Pressure + d/p Transmitter
S990B Flange Diaphragm Seal for Pressure + d/p Transm."

Mounting Set for pipe or wall mounting

Process Connection:

Flange Set PCF 900
Compression Fittings CF 900
Manifold Valve MV 900
Changeover Valve CV 900
Vent screw ES900
Screw plug VS900

Remote Amplifier Mounting Kit: Cable 3 m or 10 m with terminals for sensor and amplifier

Model Codes 143DP

| Intelligent d/p Transmitter | 143DP |
|--|-------|
| Span Limits | |
| 3.2 & 64 mbar 1.28 & 25,7 inH ₂ O 0.32 & 6.4 Kpa . . -A | |
| 32 & 640 mbar 12.8 & 257 inH ₂ O 3.2 & 64 Kpa . . -B | |
| 200 & 4000 mbar 80.3 & 1606 inH ₂ O 20 & 400 Kpa . . -C | |
| Static pressure rating (fastening thread) | |
| PN 160 / Class 900 (M10) | 1 |
| PN 400 / Class 2500 (M12) | 2 |
| PN 400 / Class 2500 (7/16 UNF) | 3 |
| Process cover material | |
| Hastelloy C | C |
| 316L 1.4404 / 1.4435 | S |
| Diaphragm material | |
| Hastelloy C | C |
| 316L 1.4404 / 1.4435 | S |
| Tantalum | T |
| Sensor fill fluid | |
| silicone oil | 1 |
| inert fill fluid | 2 |
| Sensor O-Ring Material & Temp. Limits | |
| NBR (Perbunan); -30 to +100 C; -22 to +212F | B |
| EPDM; -40 to +120C; -40 to +248F | E |
| without O-Ring (for Process Connection Code 2 & 6 only) | O |
| PTFE; -40 to +120C; -40 to +248F (not with static pressure code 2 & 3) | P |
| FPM / FKM (Viton); - 20 to +120C; -4 to +248F | V |
| Process Connection (c) | |
| 1/4 - 18 NPT | 1 |
| prep. for seals (vacuum, capillary) (d)(i), + side: welded; for capillary mounting, - side: welded; for capillary mounting. | 2 |
| prep. for seals (standard, capillary) (d)(e)(i), + side: screwed; for capillary mounting, - side: screwed; for capillary mounting | 3 |
| prep. for seals (vacuum, direct) (d)(i), + side: welded; for direct mounting, - side: screwed; 1/4 - 18 NPT | 4 |
| prep. for seals (standard, direct) (d)(i), + side: screwed; for direct mounting, - side: screwed; 1/4 - 18 NPT. | 5 |
| prep. for seals (vacuum, direct/capillary) (d)(i), + side: welded; for direct mounting, - side: welded; for capillary mounting. | 6 |
| prep. for seals (standard, direct/capillary) (d)(e)(i), + side: screwed; for direct mounting,- side: screwed; for capillary mounting. | 7 |
| Cable Entry | |
| M20 x 1.5 without cable gland | M1 |
| 1/2-14 NPT without cable gland | N1 |
| PG13.5 without cable gland | P1 |
| PG13.5 with plastic cable gland | P2 |
| PG13.5 with stainless steel cable gland | P3 |

Model Codes 143DP (continued)

| | |
|---|-----|
| Electrical classification | |
| CSA intrinsically safe (h) | CAA |
| CSA explosionproof (h) | CDZ |
| CENELEC EEx ia IIC T4 | EA4 |
| CENELEC EEx d IIB (h). | EDZ |
| FM intrinsically safe (h) | FAA |
| FM explosionproof (h) | FDZ |
| RUSSIAN intrinsically safe | GAA |
| FM nonincendive (h) | NFM |
| Ex N IIC, BS 6941 | NSP |
| without electrical classification | ZZZ |
| Communication | |
| FOXCOM adjustment analog (4-20mA)(adjustment digital with option -T) | F |
| HART | H |
| Options | |
| Certificate EN 10204-2.1 (DIN 50 049-2.1) | -1 |
| Certificate EN 10204-2.3 (DIN 50 049-2.3) | -2 |
| Certificate EN 10204-3.1B (DIN 50 049-3.1B) | -3 |
| Certificate comply with NACE Standard MR-01-75 (with diaphragm material Hastelloy C only or ECEPSE002T) | -6 |
| LCD Indicator | -A |
| Horizontal flange mounting position | -B |
| Remote Amplifier Mounting Kit (10 m), mounted (g) | -C |
| National Certificate Zone 0, IIA, IIB (with el. class. EA4) (for pressure seals in Zone 0 see EMP9001/2). | -E |
| Tag.No. Labeling stainless steel label fixed on amplifier | -F |
| National Certificate GOST Metrological Certificate | -G |
| Housing 316L, without external push buttons (with el. class. EA4, NSP, ZZZ only) | -H |
| female thread for side mounted drains/vents | -K |
| Tag.No. Labeling stainless steel label fixed with wire | -L |
| Oxygen service cleaned (not available with fill fluid code 1) | -O |
| Housing Al, without external push buttons | -P |
| Remote Amplifier Mounting Kit (3 m), mounted (g) | -R |
| Tag.No. Labeling stamped with weather resistant color. | -S |
| Custom Configuration | -T |
| National Certificate Overfill protection per VbF (with opt.-E only) | -U |
| Overfill protection per WHG (with el. class. EA4, NSP, ZZZ only) | -V |
| National Certificate dust-ignitionproof per Zone 10 (with EA4 only)(with Communication Code H only) | -X |

Footnotes

- (c) Process connection flanges, manifold valves and other accessories see EMP9003/4
 (d) Pressure Seals S990 see EMP9001/2
 (e) With FPM O-ring (Viton) only
 (f) Pending
 (g) Not with FDZ/CDZ or EDZ
 (h) With cable entry N1 or M1 only
 (i) For static pressure rating code 1 only

| | |
|----------------------------|-------------|
| Parts for d/p transmitters | see EMP9031 |
| Parts for d/p transmitters | see EMP9032 |
| Parts for instruments | see EOO9001 |