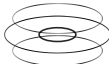


|  TORUS | <div><div></div><div></div> · Owner</div> <div>DIFFERENTIAL PRESSURE TRANSMITTER</div> | Document No.         | INS-DS-003             |          |          |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------|------------------------|----------|----------|
|                                                                                         |                                                                                        | Revision / Date      | A · September 29, 2026 |          |          |
|                                                                                         |                                                                                        | Issue purpose        | Issued for Review      |          |          |
| INSTRUMENTATION AND CONTROLS · DIFFERENTIAL PRESSURE TRANSMITTER                        |                                                                                        |                      |                        |          |          |
| Rev.                                                                                    | Date                                                                                   | Revision description | Prepared               | Reviewed | Approved |
| A                                                                                       | 2026-09-29                                                                             | Issued for Review    |                        |          |          |
|                                                                                         |                                                                                        |                      |                        |          |          |

#### NOTES

1. This datasheet covers the differential pressure transmitter across the filter section of filter separator V-101.
2. Controlling documents:  GEN-DB-001, Basis of Design;  INS-LST-001, Instrument Index;  INS-LST-002, I/O List;  INS-LST-003, Alarm and Trip Setpoints;  INS-DWG-004, Instrument Installation Hook-up Typical (HU-DP).
3. Values marked typical are budgetary. The vendor shall confirm them with its proposal and final data (HOLD H-15).
4. Units are US customary. Pressures are gauge unless stated as absolute. Operating cases C1 to C7 are defined in  GEN-DB-001, Section 6; normal conditions are case C2, maximum operating conditions the envelope of C1 to C7, and design conditions those of  GEN-DB-001, Section 7.
5. The local gauge PDI-103A shares the taps through its own block valves ( INS-DS-012).
6. The low alarm (0.3 psid) is active only above 20 MMSCFD station flow, so that it does not stand at low throughput; the logic is in the RTU ( INS-RPT-001).

## GENERAL

**Table 1-1: General Data**

| Item                     | Value                                                                                                                                                                           | Item             | Value                                                                                                                                               |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Project                  |  County,  | Service          | 120 MMSCFD gas receipt into the receiving pipeline operator's  |
| Form content             | ISA-20; tag numbers to ISA-5.1                                                                                                                                                  | Electrical codes | NFPA 70 (2023) Articles 500 and 501; API RP 500                                                                                                     |
| Safety instrumented tags | IEC 61511 and IEC 61508                                                                                                                                                         | Sour service     | Not required; sweet gas, H <sub>2</sub> S 4 ppmv maximum (NACE MR0175 not applied)                                                                  |

## SITE CONDITIONS

**Table 1-2: Site and Environmental Conditions**

| Item                       | Value                                                                                                                                                   | Item                     | Value                                                                                                                                    |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Ambient design temperature | -5 °F to 110 °F                                                                                                                                         | Electronics rating       | -40 °F to 158 °F (-40 °C to 70 °C)                                                                                                       |
| Solar radiation            | 1,000 W/m <sup>2</sup> ; sunshades where exposed                                                                                                        | Elevation and atmosphere | 1,150 ft MSL; 14.10 psia                                                                                                                 |
| Wind and ice               | 108 mph (ASCE 7-22, Exposure C); 0.5 in radial ice (HOLD H-06)                                                                                          | Area classification      | Class I, Division 2, Group D in process areas; Division 1 within 5 ft of vents and relief outlets (Volume 6 area classification drawing) |
| Temperature class          | T3 minimum (natural gas autoignition about 900 °F)                                                                                                      | Enclosure                | NEMA 4X (IP66) minimum; 316 SS or copper-free aluminum (below 0.4 % Cu), epoxy coated                                                    |
| Instrument power           | 24 VDC from the station UPS (  GEN-DB-001, Section 9.8) unless noted |                          |                                                                                                                                          |



|                                                                                                |                                                                                    |                 |                        |
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## TAG SCHEDULE

Table 1-3 lists every tag in  INS-LST-001 that references this datasheet, and Table 1-4 gives the process conditions at each tag.

**Table 1-3: Tag Schedule**

| Tag      | Service                                    | P&ID                                                                                          | Range or set | System       | JB     | Area classification          |
|----------|--------------------------------------------|-----------------------------------------------------------------------------------------------|--------------|--------------|--------|------------------------------|
| PDIT-103 | V-101 filter section differential pressure |  PRO-DWG-102 | 0 to 25 psid | BPCS RTU/PLC | JB-101 | Class I, Division 2, Group D |

**Table 1-4: Process Conditions**

| Tag      | Normal P and T     | Maximum operating P and T | Design P and T             |
|----------|--------------------|---------------------------|----------------------------|
| PDIT-103 | 1,050 psig / 70 °F | 1,150 psig / 45 to 120 °F | 1,440 psig / -20 to 150 °F |

## SPECIFICATION

**Table 1-5: Specification**

| Item                   | Requirement                                                                                                                                                                                                                                         |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type                   | Two-wire electronic differential pressure transmitter, coplanar, with five-valve manifold                                                                                                                                                           |
| Calibrated range       | 0 to 25 psid; alarms high 8 psid, high-high 10 psid, low 0.3 psid (  INS-LST-003)                                                                               |
| Static pressure rating | At least 2,000 psig, for 1,440 psig design and 2,160 psig hydrotest with the manifold equalized                                                                                                                                                     |
| One-sided overpressure | 1,440 psig on either side without damage or a calibration shift above 0.5 % of span, which covers manifold mis-operation or a collapsed element                                                                                                     |
| Accuracy               | ±0.075 % of span; static pressure effect on zero ±0.1 % of upper range limit per 1,000 psi, typical, vendor to confirm (HOLD H-15)                                                                                                                  |
| Wetted materials       | 316L SS diaphragms, 316 SS flanges, silicone fill                                                                                                                                                                                                   |
| Output and power       | 4 to 20 mA with HART 7, NE43 upscale; 24 VDC loop power                                                                                                                                                                                             |
| Housing and rating     | Explosion-proof, Class I, Division 1, Group D (FM, CSA or UL), NEMA 4X, LCD                                                                                                                                                                         |
| Manifold               | Five-valve (two block, two vent, one equalizer), 316 SS, 6,000 psi, direct mounted                                                                                                                                                                  |
| Impulse lines          | 1/2 in OD 316 SS tubing, self-draining back to the V-101 nozzles upstream and downstream of the coalescing section                                                                                                                                  |
| Mounting               | 2 in pipe stand above the taps, with sunshade                                                                                                                                                                                                       |
| SIL capability         | Not required                                                                                                                                                                                                                                        |
| Tagging                | 316 SS plate                                                                                                                                                                                                                                        |
| Inspection and testing | Five-point calibration certificate; static pressure test at 2,160 psig with the manifold equalized                                                                                                                                                  |
| Documentation          | Dimensional drawing, wiring diagram, hazardous location certificate, calibration certificate, IEC 61508 certificate and safety manual for safety instrumented tags, installation and maintenance manual and spare parts list, all as searchable PDF |

## OPEN ITEMS

**Table 1-6: Open Items**

| HOLD | Item                                                                                   | Responsible party       |
|------|----------------------------------------------------------------------------------------|-------------------------|
| H-15 | V-101 differential pressure nozzle locations and clean and dirty element pressure drop | Filter separator vendor |

