

APT 500 Series
Analogue Level Transmitter for Marine and Industrial applications



- Fully submersible construction may be installed internal or external to tank with a variety of mounting options from PSM
- Choice of construction materials depending on application
 - Stainless Steel - Service and Oils
 - Titanium - Ballast & Draught
 - Hastelloy/Tantalum - Ballast & Draught, Chemicals
- Robust construction with high overload tolerance
- Nominal measurement ranges from 0.2 to 60 bar - factory calibration allows 2:1 turndown
- Vented Gauge / Absolute versions
- Accuracy of +/-0.2% of full range
- Temperature compensated output over 0 to 70°C
- IECEx and ATEX certified for use in hazardous Areas (Zone 0)
- Marine Type Approved

| Specifications | | |
|-----------------------------------|---|---|
| Materials | Sensor body | 316L Stainless Steel or Titanium. Hastelloy C276 option for Wetted parts for external (to tank) mounting. |
| | Diaphragm | 316L or Titanium to match body material. Hastelloy C276 process ports use Tantalum diaphragm. |
| Standard Measurement Ranges (Bar) | 0.2, 0.35, 1.0, 2.5, 4.0, 10, 25, 40. (Other ranges to special order) | |
| Measurement type | Vented Gauge or Absolute – refer to PSM for availability of ranges | |
| Overload | 2 x Nominal range with no effect | |
| Span setting accuracy | 0.2% within compensated range | |
| Zero setting accuracy | 0.2% within compensated range | |
| Total Error Band | +/- 0.2% of Nominal range at reference conditions of 25°C | |
| Thermal effect | Max +/- 0.0075% of Nominal range for Zero & Span /°C from reference | |
| Long term stability | Error not exceeding +/- 0.1% Per Annum | |
| Max / Min process temperature | -20 to +85°C | |
| IP Rating | IP68 suitable for continuous immersion | |
| IECEx certification | IECEx ITS180012X.0 Ex ia IIC T4 Ga -30°C ≤ Ta ≤ +85°C | |
| ATEX certification | ITS18ATEX203153X Issue 0 Ex ia IIC T4 Ga -30°C ≤ Ta ≤ +85°C | |
| Signal Output / Power supply | 4-20mA / 10 to 30V DC (2 wire) | |
| Maximum load | Supply dependant. $V_s - 10 / 0.02 = \text{Load in Ohms}$ | |
| Weight | 0.3Kg typical for body. Cable 0.1Kg / metre | |

The APT500 is part of a family of tank level transmitters and associated instrumentation from PSM.

It is designed to provide robust, reliable and accurate service for all Shipboard applications where its 4-20mA 2 wire signal is connected directly to the ships tank level and pressure monitoring systems. A choice of materials ensure compatibility with all shipboard duties.

PSM's range includes alternative APT1000 transmitters providing 0.1% accuracy and full digital communication. Please contact us to discuss the optimum solution for your application.

PSM is part of the Scanjet Group. Scanjet provide a complete range of tank management instrumentation and systems for both Marine and Industrial applications supported by a global sales and service network

www.scanjet.se

www.psmmarine.com

| APT500 Level Transmitter | | | | | | | |
|---|---|-----------|-----------|--------------|-----------|-----------|-----------|
| 550S APT 1000 Dual Mode 4-20mA & RS485 Modbus Intelligent Transmitter - Submersible construction with cable | | | | | | | |
| Certification | | | | | | | |
| S | Hazardous Area Approval NOT APPLICABLE | | | | | | |
| I | Certified Intrinsically Safe to ATEX - Hazardous Area Approved | | | | | | |
| X | Certified Intrinsically Safe to IECEx - Hazardous Area Approved | | | | | | |
| IX | Dual Certification ATEX / IECEx - Hazardous Area Approved | | | | | | |
| Measurement Type | | | | | | | |
| A | Absolute | | | | | | |
| G | Gauge | | | | | | |
| Nominal Range | | | | | | | |
| Absolute | | | | Gauge | | | |
| | TI | SS | HT | | TI | SS | HT |
| A | N/A | N/A | N/A | A | 0.2 Bar | 0.2 Bar | 0.2 Bar |
| B | N/A | N/A | N/A | B | 0.5 Bar | 0.5 Bar | 0.5 Bar |
| C | N/A | N/A | N/A | C | 1.0 Bar | 1.0 Bar | 1.0 Bar |
| D | 2.5 Bar | 2.5 Bar | 2.5 Bar | D | 2.5 Bar | 2.5 Bar | 2.5 Bar |
| E | 4.0 Bar | 4.0 Bar | 4.0 Bar | E | 4.0 Bar | 4.0 Bar | 4.0 Bar |
| F | 10 Bar | 10 Bar | 10 Bar | F | 10 Bar | 10 Bar | 10 Bar |
| H | 25 Bar | 25 Bar | 25 Bar | H | 25 Bar | 25 Bar | 25 Bar |
| I | 40 Bar | 40 Bar | 40 Bar | I | 40 Bar | 40 Bar | 40 Bar |
| J | 60 Bar | 60 Bar | 60 Bar | J | 60 Bar | 60 Bar | 60 Bar |
| Process Connections & Fitting Options (** not available for TI versions) | | | | | | | |
| 1 | 1/2" BSP Male (Standard connection). Material is as specified for the main body | | | | | | |
| 3 | G1" Male Adapter in 316 Stainless Steel | | | | | | |
| 6 | G1/2" to DIN EN837 in Stainless Steel (Special order, refer for delivery time) | | | | | | |
| 7 | Pole Adapter Threaded G 1/2" Female Adapter in 316 Stainless Steel** | | | | | | |
| 8 | Pole Adapter Threaded G 3/4" Female Adapter in 316 Stainless Steel** | | | | | | |
| 11 | St.Steel Sensor with Drain wire adapter - Specify drain wire length in Metres | | | | | | |
| 12 | St.Steel Sensor with Stainless Steel Stilling Pipe Retainers | | | | | | |
| 14 | Titanium Sensor with Drain wire adapter - Specify drain wire length in Metres | | | | | | |
| 15 | 1" ANSI 150 lb St. Steel Flange (Supplied loose) | | | | | | |
| 17 | Stilling flexible cage pipe Installation (applicable for all sensor materials) | | | | | | |
| Cable Length mtrs (only applicable to APT 1000 versions) | | | | | | | |
| ** | Heavy Duty Vented Cable - 3 Metres included as standard | | | | | | |
| Q** | As above but cable outer jacket PTFE coated (Subject to Availability) | | | | | | |
| R** | As above but cable outer jacket Flame Retardant (Subject to Availability) | | | | | | |
| S** | As above but cable outer jacket FEP Coated (Subject to Availability) | | | | | | |
| Z** | Custom cable (refer to discuss requirements) | | | | | | |
| Transmitter Body Material | | | | | | | |
| TI | Titanium (Body & Diaphragm) | | | | | | |
| SS | Stainless Steel (Body & Diaphragm) | | | | | | |
| HT | Hastelloy / Tantalum wetted parts (St. Stl. Body) | | | | | | |
| Transmitter Orientation | | | | | | | |
| H | Horizontal | | | | | | |
| V | Vertical - Diaphragm facing down | | | | | | |
| U | Vertical - Diaphragm facing up | | | | | | |

| | | | | | | | | |
|------------|--------------------|---|---|---|---|---|----|---|
| Example: | 550S | S | A | E | 1 | 3 | TI | H |
| Written as | 550S/SA/E/1/3/TI/H | | | | | | | |

Note: Transmitter will be calibrated for 4-20 mA over Nominal range as standard. Where a specific calibration range is required this must be advised separately.

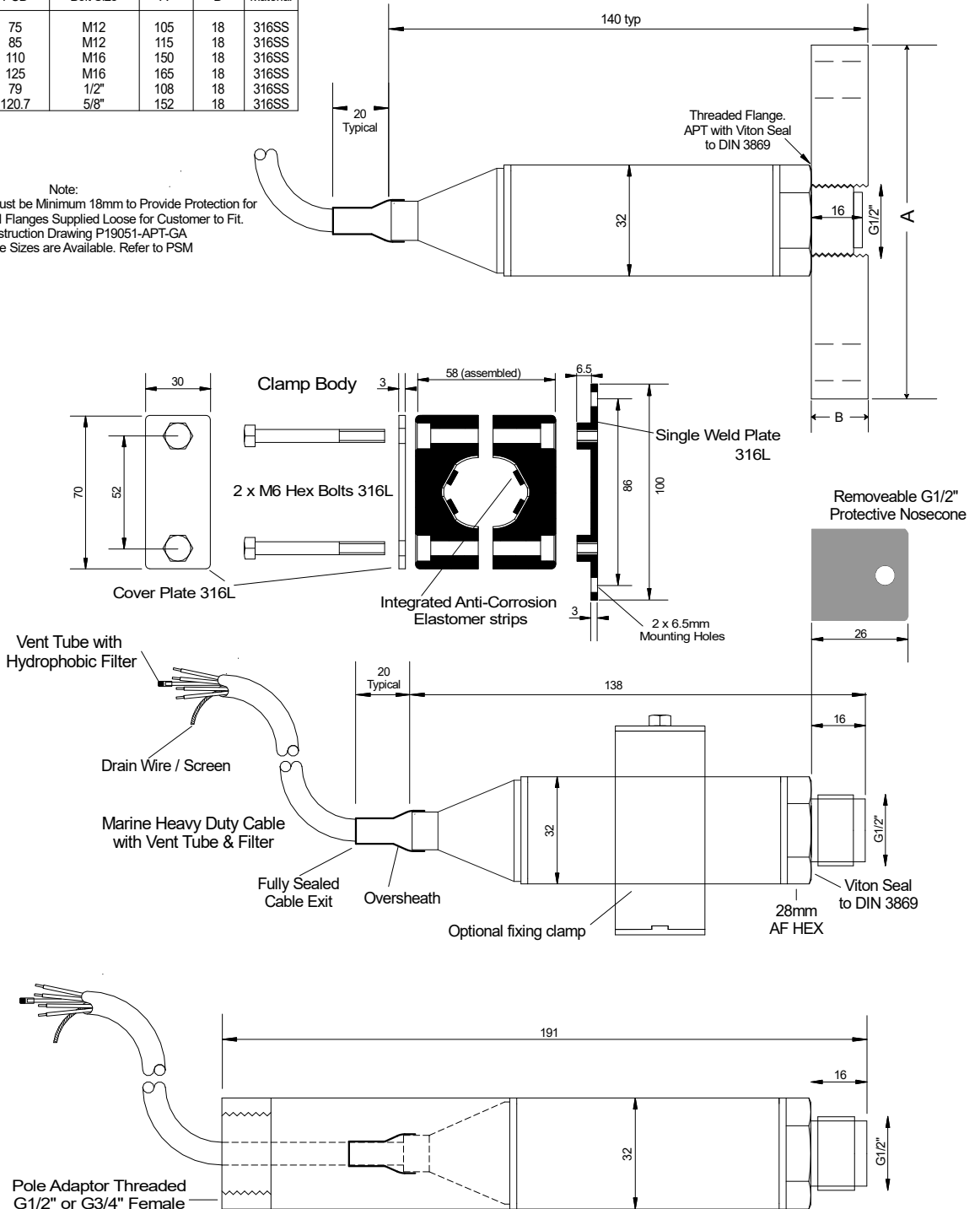
Actual calibration can be a maximum of 2:1 turndown from Nominal range.

| Optional Extras | |
|---|-------------------------|
| APT Internal Fixing Clamp Assembly | Supplied Loose |
| Process Connection DN20 PN16 SS Flange with G1/2" Female Threaded Centre | Supplied Loose |
| Process Connection DN25 PN16 SS Flange with G1/2" Female Threaded Centre | Supplied Loose |
| Process Connection DN40 PN16 SS Flange with G1/2" Female Threaded Centre | Supplied Loose |
| Process Connection DN50 PN16 SS Flange with G1/2" Female Threaded Centre | Supplied Loose |
| Process Connection 1" ANSI 150lb SS Flange with G1/2" Female Threaded Centre | Supplied Loose |
| Process Connection 2" ANSI 150lb SS Flange with G1/2" Female Threaded Centre | Supplied Loose |
| APT Demountable Pole Assembly with Top Flange (SS ONLY) - Flange Size to be Confirmed by Customer | Max Length 2000mm |
| Assembled Length From Underside of Top Flange to End of Sensor TBC | Assembly Supplied Loose |

Dimensions

| Flange | Holes | PCD | Bolt Size | A | B | Material |
|---------------|-------|-------|-----------|-----|----|----------|
| DN20 PN16 | | 75 | M12 | 105 | 18 | 316SS |
| DN25 PN16 | 4 | 85 | M12 | 115 | 18 | 316SS |
| DN40 PN16 | 4 | 110 | M16 | 150 | 18 | 316SS |
| DN50 PN16 | 4 | 125 | M16 | 165 | 18 | 316SS |
| 1" ANSI 150lb | 4 | 79 | 1/2" | 108 | 18 | 316SS |
| 2" ANSI 150lb | 4 | 120.7 | 5/8" | 152 | 18 | 316SS |

Note:
Flange Thickness (B) Must be Minimum 18mm to Provide Protection for Sensor Diaphragm. All Flanges Supplied Loose for Customer to Fit. Refer to Instruction Drawing P19051-APT-GA. Other Flange Sizes are Available. Refer to PSM



PSM Instrumentation Ltd.
Unit 3 Burrell Road
Haywards Heath
West Sussex
RH16 1TW
UK

T: +44 (0)1444 410040 E: sales@psmmarine.com
www.psmmarine.com