

# PTX 400 Series

## Druck Subsea Pressure/ Temperature Transmitters

The PTX 400 series of pressure, temperature and combined pressure/temperature transmitters have been specifically designed for long term use in subsea locations. It enables accurate process measurements to be made directly on subsea production equipment. The sensor design is based on API6A performance requirement PR2 and product specification level PSL3.

The PTX 400 utilizes our proprietary Druck micromachined piezo resistive silicon pressure measuring technology continually developed and proven for 30 years. In addition, for the TTX and PTTX variants, precision temperature measurement capability over a wide operating range is provided by a fully integrated high performance platinum resistance type sensor.

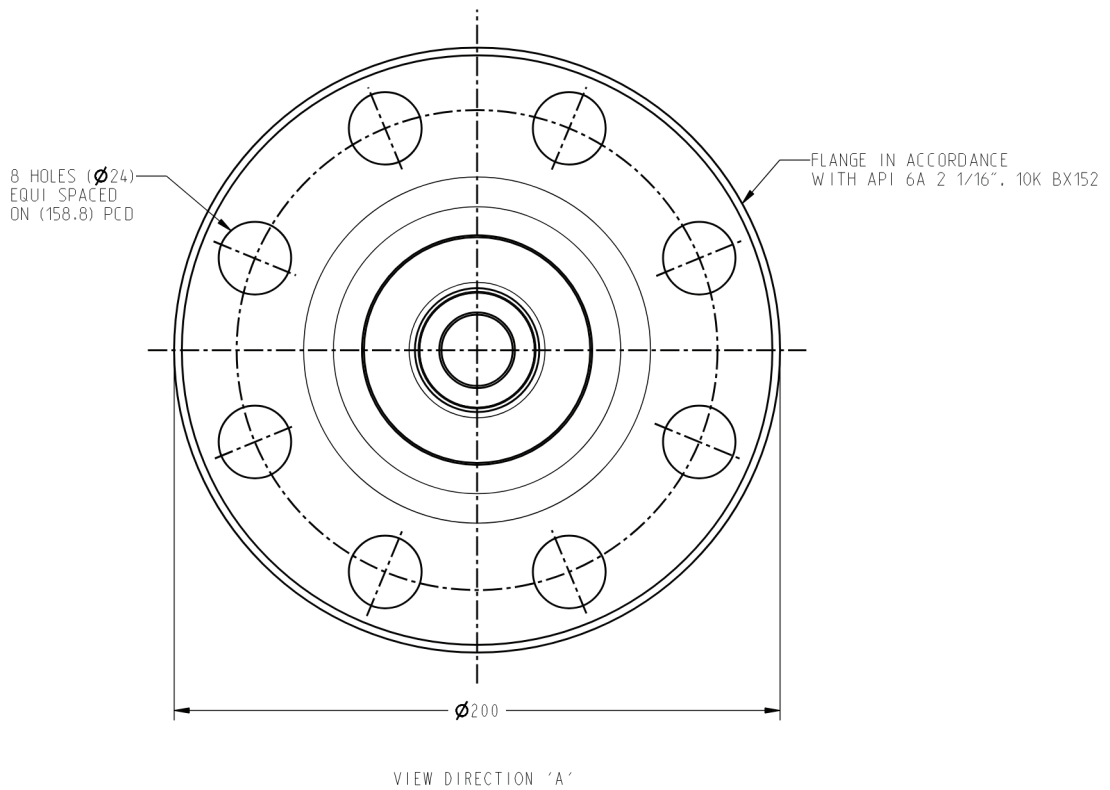
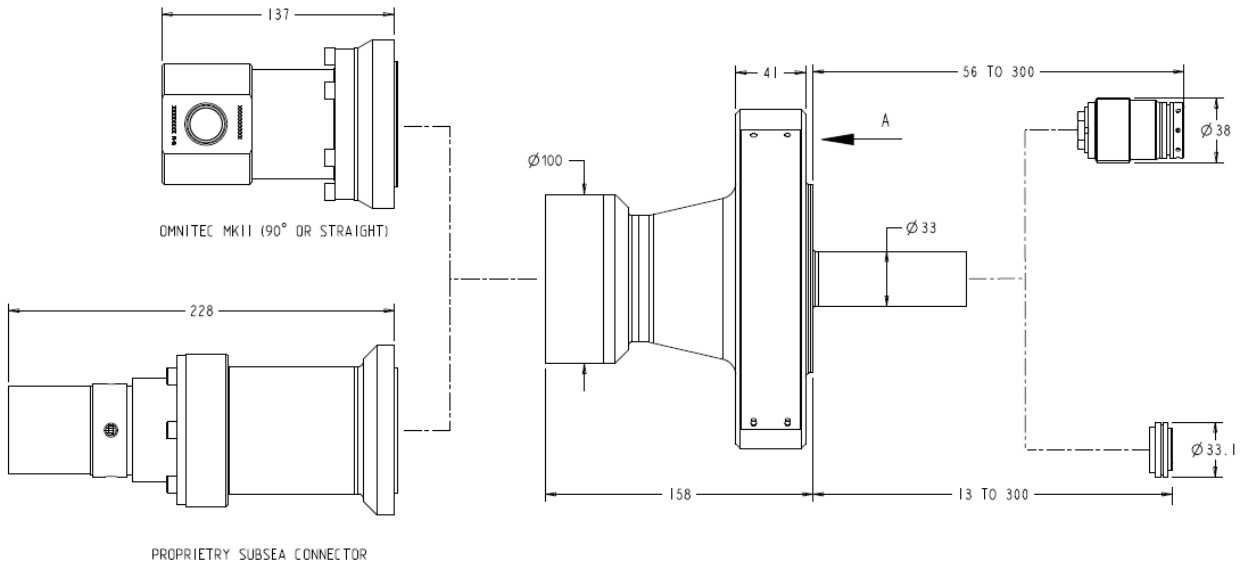
Pressure ranges are available up to 1035 bar/15,000 PSI as standard with proof pressure at 1.5 x full scale range and secondary pressure containment in excess of 1553 bar. All units in the 400 series are suitable for continuous use in excess of 25 years, when immersed in saltwater depths of up to 3360 metres.



### Features

- Standard pressure ranges of 690 bar and 1035 bar sensors available
- Temperature measurement -40 to +150°C
- External pressure up to 370 bar
- Better than  $\pm 0.025\%$  FS accuracy
- High reliability and excellent long term stability
- All welded construction, high containment
- Customized designs available. Options include CANBus, Modbus and 4-20mA output
- Nose lengths between 60mm to 300mm (with protection cap) or 13mm to 300mm (without protection cap)
- Proprietary Subsea Connector, M25 MKII OMNITEC or JIC backend
- SIL (Safety Integrity Level) versions available

# Installation Drawings



Note: All dimensions in millimeters.

# PTX400 Specification

Single and Dual Pressure (PTX), temperature (TTX) and combined pressure/temperature (PTTX) versions can be specified as required.

## Pressure Measurement

### Operating Pressure Ranges

Any full scale range may be specified between 0 - 1035 bar/15,000 PSI sealed gauge or absolute. Please contact Druck for more information.

### Proof Pressure

Proof pressure tested to 1.5 x F.S.

### Overpressure

The operating pressure range can be exceeded by upto 1.5 x F.S. without degrading performance.

### Secondary Containment Pressure

The transmitter will safely contain up to 1553 bar maximum without leakage of pressure media.

### Process Media Compatibility

Fluids compatible with a fully welded assembly of Inconel 625.

## Temperature Measurement

### Operating Temperature Ranges

Suitable for -46°C to +150°C.

## Electrical Connection

### Transmitter Supply Voltage

9 to 36 VDC. The minimum supply voltage that must appear across the transmitter terminals is 9 VDC and is calculated by:  $V_{MIN} = V_{SUP} - (0.02 \times R_{LOOP})$ .

Protected to 38V inverse polarity.

### Supply Sensitivity

<0.005% F.S./Volt.

### Insulation Resistance

> 1GΩ at 50 Vdc VDC

### Output Current

- 4 to 20mA proportional loop powered output for specified operating pressure or temperature range.
- CANbus to Cia 443 CAN OPEN profile for SIIS Level 2. Power consumption 0.85W per channel. Inrush current >40mA in 300msec
- Modbus RS485 output also available

Please contact Druck for more information.

## Performance

### Accuracy

Combined Non-linearity, Hysteresis, Zero and Span, Repeatability and Thermal Errors:

Pressure: < 0.1% F.S. (B.S.L)

Temperature: 0.2% F.S. typical.

### Long Term Stability

At standard reference conditions the calibration will not exceed +/-0.1% F.S. per annum.

### Temperature Range

Process/Fluid Temperature -46°C to 150°C

Compensated -46°C to 150°C

Storage -55°C to 70°C

## Physical

### Process Connections Available

- 15,000 psi API 2 1/16" flange to API 6A-6BX BX152
- 10,000 psi API 2 1/16" flange to API 6A-6BX BX152
- 10,000 psi API 1 13/16" flange to API 6A-6BX BX151  
With pressure tapping.

### Electrical Connection

Compatible with a wide range of proprietary subsea connectors. Please contact Druck for more information.

### Weight

17 kg nominal.

### Ingress Protection

IP68, submersible to 3360 mH<sub>2</sub>O.

### Safety

EMC emissions	EN50081-1
EMC Immunity	EN61000-6-2
Certification	CE marked

## Ordering Information

The PTX 400 series can be customised to suit individual user requirements. Please contact Druck for more information.

## Related Products

Druck manufactures a comprehensive range of pressure sensors, indicators, calibrators, controllers and deadweight testers. The range of portable calibrators also covers temperature and electrical parameters. Please contact Druck for more information.

## Calibration Standards

Instruments manufactured by Druck are calibrated against precision pressure calibration equipment which is traceable to International Standards. Continuing development sometimes necessitates specification changes without notice.

## PTX 400 Configurations

### Main Product Variant

**PTX** Pressure Transmitter

### Product Series

**4** 400

### Configuration

- 0** Pressure only
- 1** Pressure Temp
- 2** Temp only
- 3** Dual Pressure
- 4** Dual Pressure, Dual Temp
- 5** Dual Temp
- 6** Flangeless
- 8** Dual Pressure, Temp
- 9** Pressure, Dual Temp

### Output

- 5** Digicomp 4-20mA
- 6** Digicomp 20-4mA
- 8** Digicomp CANbus
- 9** Digicomp Modbus

### Press Code Range 0- in Bar

- 17** 100 - 159
- 18** 160 - 249
- 19** 250 - 389
- 20** 390 - 599
- 21** 600 - 690
- 23** 800 - 1035 (15k only)

### Pressure Scale

- A** Absolute
- S** Sealed Gauge

### Nose Length in mm

**XXX**

### Customer Specification Drawing Number

**XXXMXXXX**

↓   ↓   ↓   ↓   ↓   ↓   ↓   ↓   ↓  
**4**   **0**   **5**   **- 20**   **A**   **100**   **123M4567**   (Example Model Number)

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