

# Depth/Level

## Druck Submersible Pressure Sensors Product Guide



### Features

- High accuracy
- Excellent reliability
- Robust construction
- Harsh media compatible
- High stability
- Low power/pulsed power operation

### Applications

- Bore hole monitoring
- River level
- Tank level
- Tide and wave height
- Pump control
- Sand filter differential
- Marine



## Ground and Surface Water

One of the most efficient methods of measuring water level in wells, streams, rivers, canals and reservoirs is the submersible pressure sensor. It uses very little energy and provides an accurate long term measuring system solution.

There are many thousands of submersible GE pressure sensors installed worldwide in a variety of applications where the high stability and reliability of the devices have clearly delivered the lowest "cost-of-ownership" of any method available.



### **PDCR/PTX 1830**

*High specification, robust submersible pressure sensor*

- Ranges from 0.75 to 600 mH<sub>2</sub>O (1 to 900 psi)
- Millivolt or milliamp output
- Accuracy to  $\pm 0.06\%$  FS
- Body diameter 17.5 mm (0.69 in)
- All-welded titanium construction
- Vented polyurethane cable with Kevlar<sup>®</sup> anti-stretch construction
- Hazardous area approvals
- Lightning protection
- Five-year anti-corrosion warranty



### **UNIK 5000**

*Low cost submersible pressure sensor*

- Range 0.7 to 200 mH<sub>2</sub>O (1 to 300 psi)
- Voltage, milliamp, millivolt output
- Accuracy to  $\pm 0.04\%$
- Body diameter 25 mm (1 in)
- All-welded 316L stainless steel with Hastelloy<sup>®</sup> C276 diaphragm
- Vented polyurethane cable with Kevlar<sup>®</sup> anti-stretch construction
- Supply current <3 mA (at no load)
- Gauge, absolute, differential versions



### **PTX 1730**

*Submersible pressure sensor*

- Ranges from 3.5 to 600 mH<sub>2</sub>O (5 to 900 psi)
- Milliamp output
- Accuracy  $\pm 0.25\%$
- Body diameter 17.5 mm (0.69 in)
- All welded 316L stainless steel construction
- Vented polyurethane cable with Kevlar<sup>®</sup> anti-stretch construction



### **UNIK 5000 Differential**

*Submersible differential pressure transmitter*

- Ranges from 1 to 350 mH<sub>2</sub>O (1.5 to 500 psi)
- Voltage, milliamp, millivolt output
- Accuracy  $\pm 0.04\%$  FS
- All-welded 316L stainless steel with Hastelloy<sup>®</sup> C276 diaphragm
- Moulded polyurethane cable

# Wastewater and Remediation

One of the most difficult applications in level measurement is sewage. Most methods suffer from clogging, high-humidity interface from foaming or require line of sight.

GE has developed the PTX1290 with its flush elastometric diaphragm and titanium body in order to provide an inexpensive way to ensure highly reliable level measurement in this harsh environment.

In groundwater remediation applications, undocumented chemicals may be encountered that could cause corrosion in stainless steel devices. All-welded titanium construction and robust Hytel® cable is insurance against premature failure.



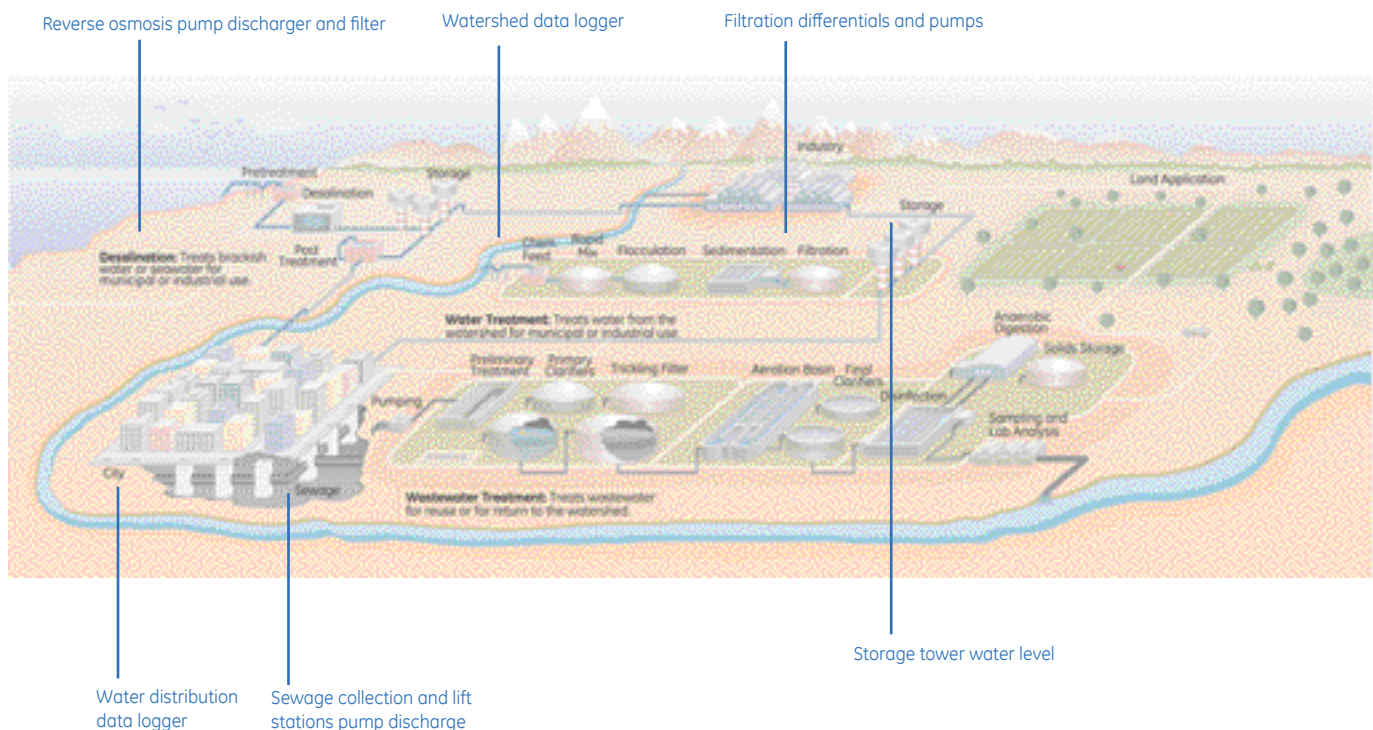
**PTX 1290 (US Only)**  
Wastewater submersible pressure transmitter/transducer

- Ranges from 1.75 to 15 mH<sub>2</sub>O (2.5 to 22.5 psi)
- Current output
- Accuracy ±0.25% FS
- Body diameter 30 mm (1.2 in)
- All-welded titanium construction
- Polytetrafluoroethylene-coated elastometric flush diaphragm
- Hazardous area approvals (US only)
- Five-year anti-corrosion warranty



**PDCR/PTX 1840**  
High specification robust submersible pressure sensor

- Ranges from 0.7 to 600 mH<sub>2</sub>O (1 to 900 psi)
- Millivolt or milliamp output
- Accuracy to ±0.06% FS
- Body diameter 17.5 mm (0.69 in)
- All-welded titanium construction
- Chemically resistant cable with Kevlar® anti-stretch construction
- Hazardous area approvals
- Lightning protection
- Five-year anti-corrosion warranty



## Tank level, marine and pipe pressure

A choice of metal and cable materials make it possible to select a sensor capable of withstanding most aggressive media. This allows simple installation into the tank by direct immersion.

Features such as IP68 cable connections and snubbers enable the correct sensor to be selected from GE's standard industrial transmitters to enable robust stable and reliable measurement of pump and pipeline pressures. DNV certifications are available for products designed for applications on board ship.



### UNIK 5000

*Robust OEM industrial level transmitter*

- Ranges from 70 mbar to 700 bar (1 to 10,000 psi)
- Millivolt, milliamp, voltage output
- Accuracy to  $\pm 0.04\%$  FS
- Body diameter 25 mm (1 in)
- All-welded 316L stainless steel with Hastelloy C276 diaphragm
- Vented polyurethane or Hytrel® cable with Kevlar® anti-stretch construction
- Selection of high IP rated electrical connections



### PDCR/PTX 1840

*High specification, robust submersible pressure sensor*

- Ranges from 0.7 to 600 mH<sub>2</sub>O (1 to 900 psi)
- Millivolt or milliamp output
- Accuracy to  $\pm 0.06\%$  FS
- Body diameter 17.5 mm (0.69 in)
- All-welded titanium construction
- Chemically resistant cable with Kevlar® anti-stretch construction
- Hazardous area approvals
- Lightning protection
- Five-year anti-corrosion warranty



### UNIK 5600/5700

*DNV marine certified pressure transmitter*

- Ranges from 70 mbar to 700 bar (1 to 10,000 psi)
- Milliamp output
- Accuracy to  $\pm 0.04\%$  FS
- Body diameter 25 mm (1in)
- All-welded 316L stainless steel or titanium construction
- Hazardous area approvals
- DIN 43650 or fully submersible electrical connectors



### PTX 1730

*Low cost submersible pressure sensor*

- Ranges from 2 to 900 psi
- Milliamp output
- Accuracy  $\pm 0.25\%$
- Body diameter 17.5 mm (0.69 in)
- All welded 316L stainless steel construction
- Vented polyurethane cable with Kevlar® anti-stretch construction



### RTX 1000

*Process pressure transmitter*

- Ranges from 1.5 to 20,000 psi
- HART® compatible
- Milliamp output
- Accuracy to  $\pm 0.075\%$  FS
- 316L stainless steel, Hastelloy®, Inconel® wetted parts
- Conduit connections
- Hazardous area approvals



### SLP

*Robust OEM level transducer*

- Ranges from 2.5 to 100 psi
- Millivolt output
- Accuracy  $\pm 0.5\%$  FS
- Polymer construction
- Hazardous area approvals

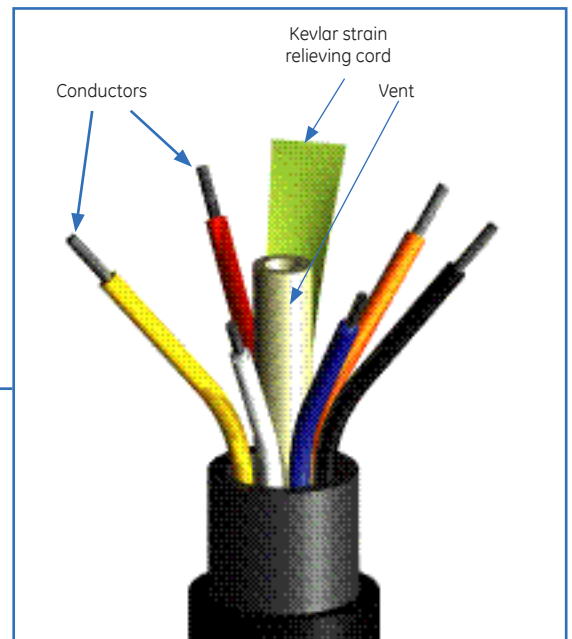
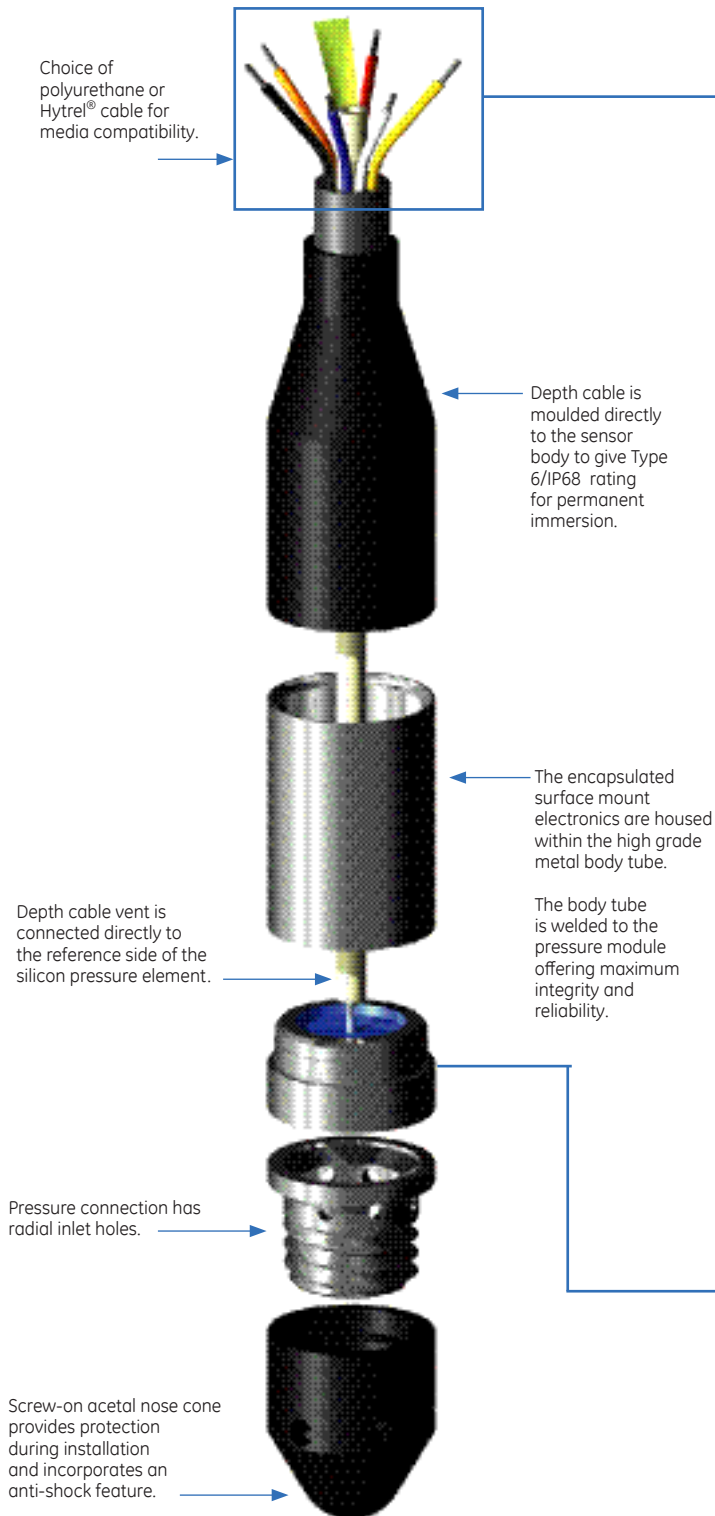
## The Latest Technology for Submersible Sensors

GE offers the latest generation of fully submersible sensors that incorporate the most recent technological advances in depth and level measurement.

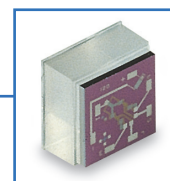
At the heart of these sensors is a high stability pressure element manufactured from micro-machined silicon developed within GE's own processing facility. The silicon sensing element is fully isolated from the media by an isolation diaphragm.

Surface mount electronics within the body tube minimize sensor size and improve reliability. The purpose-designed vented electrical cable results in level sensors with the highest integrity and the lowest cost of ownership.

With a choice of millivolt, voltage or current outputs, small physical size and wide range of pressures, the sensors can be used in a variety of applications from the smallest diameter bore holes to canals, rivers and reservoirs. They are ideally suited for depth/level application in the oceanographic and remediation industries.



Depth cable



Pressure module assembly

## Accessories

A full range of accessories is available to enhance installation, operation and maintenance of the Druck submersible pressure sensors:



*STE Moisture-Proof Sensor Termination Enclosure*



*STE Desiccant Silica Gel Can*



*Cable Clamp Assembly*



*Short Sink Weight*



*Slim Line Sink Weight*



*Economical Direct Calibration Adaptor*

## Related Products

GE manufactures a wide range of pressure transducers, transmitters, associated digital indicators, barometers and a complete range of precision process calibrators and controllers for the field, workshop and laboratory. A selection of these is shown below:



**RPT 410**  
*Low cost, high accuracy surface mount barometer*

- 600 to 1100 mbar absolute
- High accuracy
- High stability 100 ppm
- Voltage or frequency outputs



**Druck DPI 620 Series**  
*Portable pressure/temperature/electrical/multi-function, battery-powered calibrators*

- Available in standard or intrinsically safe formats
- Compact, rugged, ergonomically-designed universal tools
- Digital interface



**UPS III**  
*Rugged, compact/pocket size loop calibrator*

- Measure and source 0 to 24 mA
- Accuracy 0.01% of reading
- Dual mA and % readout, linear or flow
- Step, span check, value check, ramp
- 60 Vdc measurement and continuity



**TransPort® PT878**  
*Portable flowmeter*

- Portable verification of installation
- Retrofit permanent meter
- No routine maintenance



**DF868**  
*Fixed-installation ultrasonic liquid flowmeter*

- Low installation cost
- Wide variation in pipe size or material
- Low ownership cost
- Industry certification



**PACE Series**  
*Pneumatic pressure controllers*

- High accuracy
- High speed pressure control
- Flexible modular construction
- Intuitive icon task driven menu structure



**PACE Series**  
*Precision pressure indicator*

- Up to 3 pressures displayed simultaneously
- Datalogging as standard
- RS232, IEEE connectivity, Ethernet and USB as standard
- Selectable graphical display



**RPS 8000**  
*Ultra high accuracy sensors*

- 0.01% Precision
- 0.01% Stability
- Pressure ranges to 70 bar
- Barometric options

## Level Sensor Accessories

For many years, GE Measurement & Control has supplied high quality submersible sensors for applications in the worldwide water industry. GE has a range of special accessories to complement both past and present submersible sensors. The accessories provide a complete system solution, easing problems in installation and maintenance. These new accessories are compatible with the following submersible sensors.

### Submersible Level Sensors

Model	Sensor Type
PTX 1290	- 30 mm titanium sensor
PDCR 1830	- 17.5 mm titanium sensor
PTX 1730	- 17.5 mm stainless steel sensor
PTX 1830	- 17.5 mm titanium sensor
UNIK 5000	- 25 mm stainless steel sensor

### STE Sensor Termination Enclosure



This sealed 'junction box' receives the special 'vented' type sensor cable from a GE sensor and connects to a less expensive, non-vented, proprietary sourced instrument cable. It allows barometric reference pressure to enter the enclosure while providing

a block to water/humidity entering and condensing in the assembly. A desiccant pack is included which keeps the 'junction box' dry.

### Cable Clamp



In many surface and ground water applications there has been no easy or cost-effective way to hold a sensor cable at the water exit point, until now. This clamp secures a sensor cable and prevents the vent tube in the sensor cable from becoming constricted. The slide mechanism of the cable clamp makes installation an easy task.

### Calibration Adaptors

A regular calibration check is essential to meet local or national quality practices. This requires a level sensor to have a known pressure applied and the output measured. In the field, a portable calibrator can be used with one of the new calibration adaptors to carry out a calibration check.



### Sink Weights



Many submerged sensor applications require additional weight to prevent incorrect datum reference due to 'cable snake'. The old solution of strapping lead weights to the cable boot can damage the sensor cable.

GE's solution attaches sink weights directly to the sensor. These sink weights match the diameter of the sensor and screw into the front of the sensor. Radial holes around the sensing diaphragm area provide accurate measurement with continuous water circulation, maintaining cleanliness.

### Parts List

When ordering, please refer to this Accessories Parts List, and specify the part number required.

Part Number	Description
202-034-03	STE Sensor Termination Enclosure
600-914	STE Desiccant Silica Gel pack
410-A001 (US only)	STE Desiccant Silica Gel pack
DA2608-1-01	Slimline Sink Weight 17.5 mm - 1830/UNIK 5000 (*PJ)
222-116-01	Slimline Sink Weight 17.5 mm - 1730/UNIK 5000 (*PA, PW)
DA4068-1-01	Short Sink Weight 25.4 mm - 1830/UNIK 5000 (*PJ)
222-117-01	Short Sink Weight 25.4 mm - 1730/UNIK 5000 (*PA, PW)
192-373-01	Cable Clamp System
DA2537-1-01	Economical G1/8 Pressure adaptor- 1830 to DPI620
DA2536-1-01	Economical G1/8 Pressure adaptor- 1730 to DPI620
222-127-01	1830 Nose Cone
222-112-01	1730 Nose Cone

\*Compatible UNIK 5000 Pressure connector options (PA, PJ, PW)



[www.ge-mcs.com](http://www.ge-mcs.com)

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