

TECHNOLOGY

HOLYKELL®

HPT604BL
LEVEL
• DATASHEET •

1. Pressure Measurement **2. Level Measurement** 3. Temperature Measurement
4. Flow Measurement 5. Display & Control Instruments
6. Wireless Monitoring System 7. Velocity Measurement

HPT 604BL

Submersible Analog & Digital Pressure Fuel Level Transducers & Transmitters

Applications

- Level measurement in Bio-Fuels
- Monitoring of Gasoline & diesel fuel tanks
- Level Measurement in Ballast tanks
- Level Measurement in ground water level
- Monitoring of irrigation equipment
- Control of pumping stations

Features

- Imported GE pressure cell, 0.25% F.S.,
- Survives harsh environments
- EMI/RFI protection
- Custom level ranges from 50cm to 200m
- Optional PT100 temperature measurement
- IP68 full sealed plastic waterproof design
- CE, RoHS and ATEX approved
- Custom PU, PE or FEP cable length

Profiles

The HPT604BL series digital pressure level transducer offers high stability and reliability, featuring U.S.A GE pressure chips and a precision circuit board housed in a robust stainless steel casing. Its integrated design and standard output signal make installation and local operation simple and convenient. The specially designed cable allows long-term immersion in the measured media.

The HPT604BL combines monolithic computing technology with sensor digital conversion. Its core component, a 24-bit AD MCU microprocessor, ensures high performance through strong functionality and fast operation.

The transducer is engineered to meet the demanding requirements of modern industrial environments, offering reliability, stability, and high accuracy. It provides robust functionality without the need for manual operation, ensuring smooth interaction. Advanced digital signal processing ensures strong immunity to interference, while features such as automatic zero-point tracking and temperature compensation further enhance accuracy.

Holykell provides cost-effective level monitoring solutions for a wide range of applications. Inquiries are welcome.



Measuring range

| | |
|-----------|----------------------|
| bar | 0 to 0.1 ... 0 to 2 |
| inWC | 0 to 20 ... 0 to 800 |
| psi | 0 to 1 ... 0 to 30 |
| mH2O/Fuel | 0 to 1 ... 0 to 20 |

When ordering a sensor for gasoline/petrol, please choosing FEP cable.

The given measuring ranges are also available in mbar, KPa and MPa.

Materials

| Wetted Parts | Standard | Optional |
|--------------------------|----------------------|----------------|
| Sensor | Stainless steel 316L | Titanium Alloy |
| Housing & Protection cap | SUS304 | 316L/SUS304 |
| Cable | PUR | FEP |

Mounting position

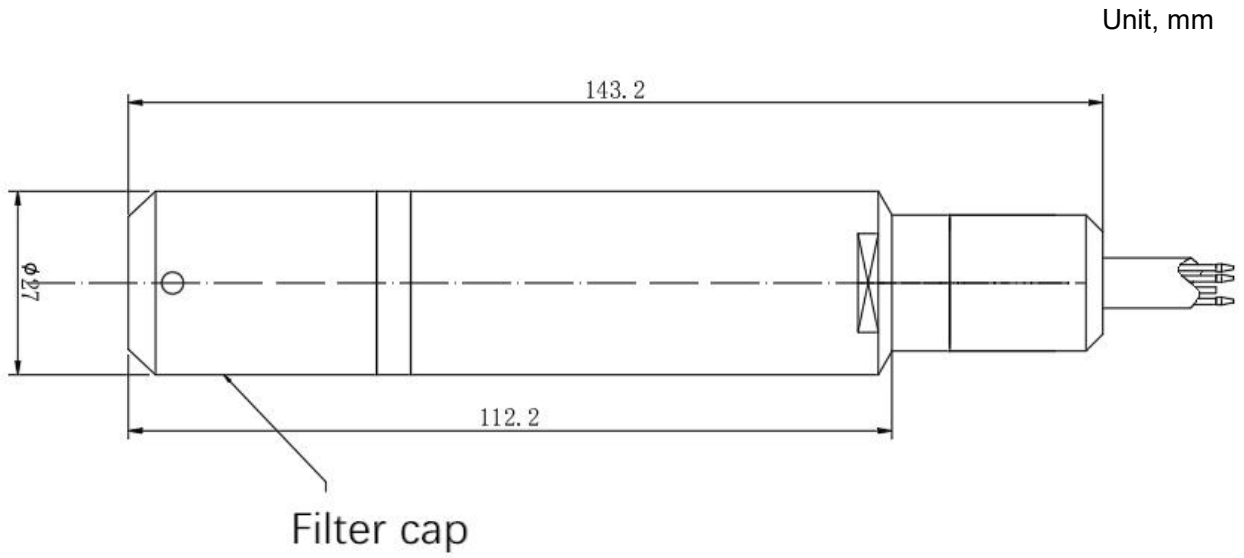
Calibrated in vertical mounting position with pressure connection facing downwards.

Specifications

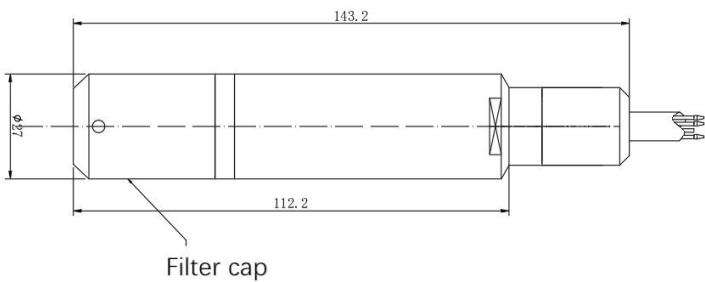
Ambient Temperature: 25°C (unless specified)

| Parameter | HPT604BL | | | | | | | |
|---|---|-------------|---|------------------|---------|--------------|------------------------|--|
| Pressure Range | 0-0.1Bar.....2 bar / 0-1m...20m fuel level Optional (See P1 page description) * 80m max for SDI-12 signal | | | | | | | |
| Overload | 150% F.S. | | | | | | | |
| Burst Pressure | 500% F.S. | | | | | | | |
| Accuracy | Better than $\pm 0.25\%$ F.S @25°C | | | | | | | |
| (Linearity Hysteresis | Including non-lin., rep. and hys. | | | | | | | |
| Repeatability) | | | | | | | | |
| Long-term Stability | $\leq \pm 0.1\%$ of span/year | | | | | | | |
| Working Temp. | -30 °C to +80°C (non-corrosive medium) | | | | | | | |
| Storage Temp. | -40 °C to +80°C | | | | | | | |
| Temperature Compensation | -10 °C to +80°C | | | | | | | |
| Medium Compatible | Compatible with 304 Stainless Steel | | | | | | | |
| Electrical Wire | 2 Wires | | 3 Wires | | | 4 wires | | |
| Output | 4-20 mA | 1-5 V;0-5 V | 0-10 V | 0.5-4.5 V | SDI-12 | Dual 4-20 mA | RS485 Modbus RTU | |
| Power Supply | 7-30 V DC | 8-30 V DC | 13-30 V DC | 5 V DC $\pm 5\%$ | 12 V DC | 12-30 V DC | 3.6-5 V DC / 8-30 V DC | |
| Polarity Protection | Yes | | Power wires-Yes; Signal Wires-Yes, Power&Signal Wires-No! | | | | | |
| Insulation Resistance | > 100M Ω @100V | | | | | | | |
| Zero-point Temp. Drift | 0.01%FS/°C | | | | | | | |
| Full scale Temp. Drift | 0.005%FS/°C | | | | | | | |
| Electrical connection | Fixed cable and water proof IP68 | | | | | | | |
| Response Time | ≤ 20 ms(Current and voltage signals); ≤ 100 ms (digital signals) | | | | | | | |
| Pressure Type | Gauge pressure and absolute optional. | | | | | | | |
| Certificate | Exia IICT6, TUV RoHS and CE Certificate | | | | | | | |
| EMC Standard | EN 61326-1:2013; EN 61326-2-3:2013 EN 61000-6-2:2005; EN61000-6-4:2007+A1 | | | | | | | |
| Surge & Lightning Protection (Optional) | Surge ± 1000 V, Air discharge ± 8000 V; contact discharge ± 6000 V | | | | | | | |
| Cable Optional | Cable materials are optional according request, we offer 3 type special cables as follow: PE Cable (Water Proof); PUR Cable (Oil/Fuel Proof); FEP Cable (Anti-Corrosive) | | | | | | | |

Dimensions and Drawing



Electrical Connections



| | | Cable-out | |
|--|-----------------------|-----------|---------------------------------------|
| | Current | Red | U+ |
| | | Green | Iout(U-) |
| | | Yellow | ⊥ Connect to earth ground |
| | Current(4-20mA P/L+T) | Red | U+ |
| | | Green | Iout(U-) |
| | | Yellow | ⊥ Connect to earth ground |
| | | Blue | T |
| | Voltage/SDI-12 | Red | U+ |
| | | Green | Vout(for voltage) Signal(for SDI-12) |
| | | Yellow | ⊥ Connect to earth ground |
| | | Black | U- |
| | RS485 RTU Modbus | Red | U+ |
| | | Black | U- |
| | | Green | RS485A |
| | | Blue | RS485B |
| | | Yellow | ⊥ Connect to earth ground |

How to Order

1. Range Selection Table:

| | | | | | | | | | | | | | | | | | |
|----|-------|----|-------|----|---------------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|
| 00 | 0~0.5 | 01 | 0~1.0 | 02 | 0~1.1 | 03 | 0~1.2 | 04 | 0~1.3 | 05 | 0~1.4 | 06 | 0~1.5 | 07 | 0~1.6 | 08 | 0~1.7 |
| 09 | 0~1.8 | 10 | 0~1.9 | 11 | 0~2 | 12 | 0~2.1 | 13 | 0~2.2 | 14 | 0~2.3 | 15 | 0~2.4 | 16 | 0~2.5 | 17 | 0~3 |
| 18 | 0~4 | 19 | 0~5 | 20 | 0~6 | 21 | 0~7 | 22 | 0~8 | 23 | 0~10 | 24 | 0~12 | 25 | 0~15 | 26 | 0~16 |
| 27 | 0~20 | | | X | By customized | | | | | | | | | | | | |

Kindly according to your application select suitable range code , Example: code 19 = 5 .
 Unit of measure select on the Part Number Selection Table . Example: Code F=m Fuel , that's 5m Fuel


2. Part Number Selection Table:

| | | | | | | | | | | |
|------------------------------|---|-----------|--------------------------------|----------|----------------|--------------------------------|------------------|------------|----------|------------|
| 604 Selection Type | BL (Type BL) | 11 | F | G | E5 | S11 | D3 | SSC | 1 | 003 |
| Range | Range reference to range selection table code | | | | | | | | | |
| Pressure & Level Unit | F=m Fuel (Min: 0.5 m Fuel; Max:20 m Fuel) B=bar (Min: 0.1 bar Max: 2bar) P=Psi (Min:1Psi; Max:30Psi) K= kPa (Min:5 KPa; Max:200 KPa) I= inWC (Min: 20 inWC; Max:800 inWC) MB= mbar (Min: 50 mbar Max: 200 mbar) | | | | | | | | | |
| Pressure Type | G=Gauge/Relative pressure type (universal) A=Absolute pressure (customized) | | | | | | | | | |
| Signal Output | E5=4-20 mA(2 wires) E6=0-5 V(3 wires) E7=0-10 V(3 wires) E21=0.5-4.5 V non-ratiometric (default, 3 wires) E8=0.5-4.5 V ratiometric (by customized, 3 wires) E11=RS485(MODBUS) E16=SDI-12 E22=Dual 4-20 mA(P/L+T) (3 wires) E0=1-5 V (3 wires) X= By Customized | | | | | | | | | |
| Power Supply | S6=5 V DC | | S5=12 V DC | | S10=12-30 V DC | | | | | |
| | S11=7-30 V DC | | S12=8-30 V DC | | S62=3.6-5 V DC | | | | | |
| | S43=13-30 V DC | | X= By Customized | | | | | | | |
| Measuring Medium | CW=Water | | D1=0.84g/cm3 density diesel | | | D2=0.83g/cm3 density diesel | | | | |
| | | | D3=0.85g/cm3 density diesel | | | D4=0.86g/cm3 density diesel | | | | |
| | | | G2=0.725g/cm3 density gasoline | | | G5=0.737g/cm3 density gasoline | | | | |
| | X=Other Liquid and Density By Customized | | | | | | | | | |
| Others Function (Optional) | T=With Temperature Sensor/Output FC=FEP Cable (gasoline application) SSC=Stainless steel filter cap | | | | | | | | | |
| Accuracy | 1=0.5%F.S | | 2=0.25%F.S optional | | | 3=0.1%F.S (By customized) | | | | |
| Cable Length | 001= Cable 1m | | 002= Cable 2m | | 003= Cable 3m | | X= By customized | | | |

Example of a complete PN: 604BL11FGE5S11D3SSC1003
 (Model: HPT604BL, fuel level range 0-2m, gauge type, 4-20mA, 7-30 V DC, 0.85g/cm3 density diesel, S/S cap, 0.5%F.S accuracy with 3 meters cable)

Accessories

(Notes: Purchased separately. For the price of accessories, please contact our sales.)

| | Description | Order number |
|---|---|--------------|
|  | <p>Liquid level display control device With all kinds of liquid level sensor, measurement according to liquid level, and according to the setting of the container structure and size and the density of liquid, calculation, display liquid volume or quality.</p> | 0008 |
|  | <p>Locking flange For locking cables, made of aluminum alloy</p> | 0029 |
|  | <p>IP68 rated deep water level cable extender Mainly used to extend the cable of deep water level transmitter. Users can rewire it locally. It can work continuously for more than 10 years 500 meters underwater, and the safe tensile strength of the cables at both ends can reach 200N</p> | 0028 |
|  | <p>Desiccant drying cartridge Desiccant Pack installed on Vented Transducer cable. The cartridge will have to be field replaced as site environment requires.</p> | 0010 |
|  | <p>Terminal box The terminal box, with IP67 ingress protection and watertight ventilation element, provides a moisture-free electrical termination for the submersible pressure transmitter. It should be mounted in dry environment or directly in the switch cabinet.</p> | 0003 |
|  | <p>Adapter Converter It is able to convert RS-232 signal to RS-485 balanced differential signal and extend the communication distance to 1.2km. It uses a particular pump to gain power from RS-232 signal (RTS, DTR, TXD) without initializing the RS-232 series interface. This interface converter does this without requiring any AC or DC power.</p> | 0005 |
|  | <p>Surge electrostatic protector Anti-surge $\pm 2000V/\pm 4000V$, anti-static 18KV, suitable for protecting 4-20ma and RS485 circuits.</p> | 0014 |

Ordering information

Model / Measuring range / Output signal / Temperature measurement / Cable material / Cable length / Case / Lightning protection / Accessories