

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
mH <sub>2</sub> O/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.

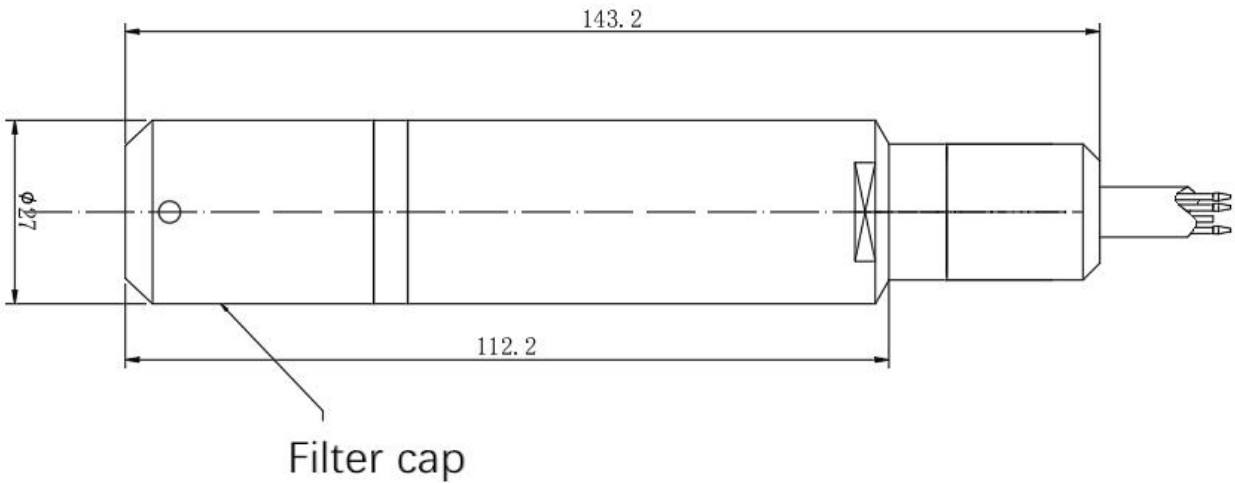
### Specifications

Ambient Temperature: 25°C (unless specified)

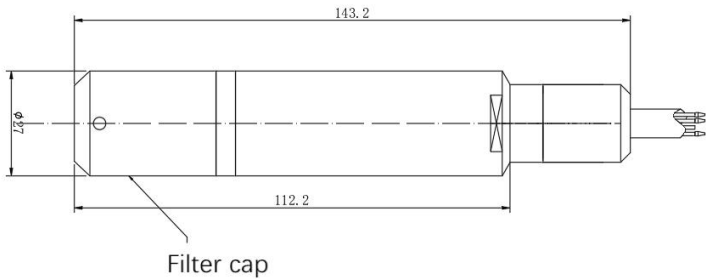
Parameter	HPT604BL
Pressure Range	0-0.1Bar.....2 bar / 0-1m...20m fuel level Optional (See P1 page description) * 80m max for SDI-12 signal
Overload	200% F.S.
Burst Pressure	500% F.S.
Accuracy	Better than $\pm 0.25\%$ F.S @25°C
(Linearity Hysteresis Repeatability)	Including non-lin., rep. and hys.
Long-term Stability	$\leq \pm 0.1\%$ of span/year
Working Temp.	-30-80°C (non-corrosive medium)
Storage Temp.	-40°C~80°C
Temperature Compensation	-10~80°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 3.5-36 V DC
Polarity Protection	Yes Power wires-Yes; Signal Wires-Yes, Power&Signal Wires-No!
Insulate Resistance	>100M $\Omega$ @50V
Zero Temp. Drift	0.2%FS/°C( $\leq 35$ kPa); 0.1%FS/°C( $\geq 35$ kPa)
FS Temp. Drift	0.02%FS/°C( $\leq 35$ kPa); 0.01%FS/°C( $\geq 35$ kPa)
Electrical connection	Fixed cable and water proof IP68
Response time	$\leq 4$ ms (digital signal $\leq 200$ ms)
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
Lightning Protection (optional functions)	Surge $\pm 2000$ V, Air conduction $\pm 8000$ V; contact discharge $\pm 4000$ V protection.
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

Unit, mm



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:



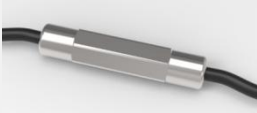




604 Selection Type	BL (Type BL)	11	F	G	E5	S11	D3	SSC	1	003
Range	Range reference to range selection table code									
Pressure & Level Units	F=m Fuel (Min: 0.5 m Fuel; Max:20 m Fuel ) B=bar (Min: 0.1 bar Max: 2bar) P=Psi (Min:1Psi; Max:30Psi) K= kPa (Min:5 KPa; Max:200 KPa) I= inWC (Min: 20 inWC; Max:800 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    S42=3.5-36 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 supply, 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
	<b>Liquid level display control device</b> 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.	0008
	<b>Locking flange</b> For locking cables, made of aluminum alloy	0029
	<b>IP68 rated deep water level cable extender</b> 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	0028
	<b>Desiccant drying cartridge</b> Desiccant Pack installed on Vented Transducer cable.The cartridge will have to be field replaced as site environment requires.	0010
	<b>Terminal box</b> 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.	0003
	<b>Adapter Converter</b> 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.	0005
	<b>Surge electrostatic protector</b> Anti-surge $\pm 2000V/\pm 4000V$ , anti-static 18KV, suitable for protecting 4-20ma and RS485 circuits.	0014

Ordering information

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