

TECHNOLOGY

**HOLYKELL®**

**HPT604**  
**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 604 (Type BS)

Submersible Fuel Level Pressure Transmitter  
With Magnetic Suction End Cap

## Applications

- Level Measurement in bio-fuels
- Monitoring of diesel fuel tanks
- Level Measurement in ballast tanks
- Level Measurement in oil tanks
- Process control Level
- Level Measurement in water tanks

## Features

- Imported pressure chip, 0.25% F.S
- Survives in harsh environments
- EMI/RFI Protection
- Custom level ranges from 0.5m to 50m
- Unique impurities filter mesh design
- IP68 full sealed plastic waterproof design
- CE, ROHS and ATEX approved
- Custom PUR or FEP cable lengths

## Profiles

HPT604BS type is a submersible fuel level transducer suitable for fuel level and depth measurement. It consists of an Germany imported FS piezoresistive sensing element encased in 304SS housing. It's all stainless steel, the hermetically sealed housing makes it suitable for immersion in most industrial liquids and oils.

This submersible level transducer is designed with a magnetic suction end cap to fix the sensor at the bottom of the tanks or vessels and prevent the sensor shaking in the liquid. Two designs are provided for static and moving fuel tanks separately. This design will eliminate the negative effect of shaking on measurement accuracy.

The HPT604BS incorporates lightning and surge protection and it utilizes dual arrestor technology, and assures normal work under the input and output short-circuit conditions to prevent reverse connection. And it eliminates both power supply surges and lightning ground strike transients.

Holykell provides cost-effective solutions for level monitoring for a variety of applications. Welcome to your inquiry.



Measuring range	
bar	0 to 0.05 ... 0 to 2
psi	0 to 1.0 ... 0 to 29
mH2O/Fuel	0 to 0.5 ... 0 to 20

When order sensor for gasoline/petrol, please choosing the FEP cable. The given measuring ranges are also available in mbar, KPa and MPa

Materials		
Wetted Parts	Standard	Optional
Sensor	Stainless steel 316L	NA
Housing & Protection cap	Stainless steel 304	316L/PVDF/Nylon
Cable	PUR	FEP

## Mounting position

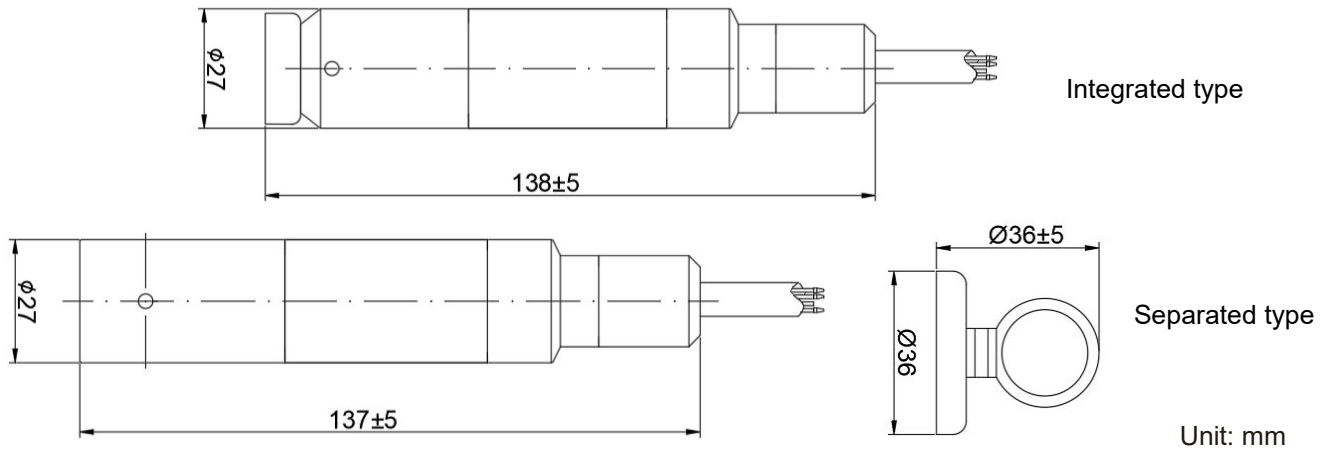
Calibrated in vertical mounting position with pressure connection facing downwards.

### Specifications

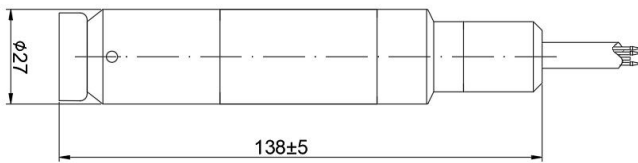
Ambient Temperature: 25°C (unless specified)

Parameter	HPT604(Type BS)				
Pressure Range	0-0.05 Bar.....2 Bar / 0-0.5m.....20m fuel level optional (See P1 page description)				
Overload	150% F.S				
Burst Pressure	500% F.S				
Accuracy(Linearity, Hysteresis, Repeatability)	≤ ±0.5%F.S(Typical); ≤ ±0.25%F.S (optional), 0.1%F.S (by customized) @25°C including non-lin., rep. and hys. optional				
Long-term Stability	≤ ±0.2%F.S/ year				
Working Temp.	-40 °C to +85°C				
Medium Temp.	-20°C to +85°C				
Storage Temp.	-40°C to +85°C				
Temp.Compensation	0°C to 50°C; -10°C to 70°C (Range > 200 kPa / 20 mH <sub>2</sub> O)				
Medium compatible	Compatible with 304 Stainless Steel				
Electrical Wire	2 Wires	3 Wires			4 wires
Signal Output	4-20 mA	1-5 V;0-5 V	0-10 V	0.5-4.5 V	RS485 Modbus RTU
Power Supply	7-30 V DC	8-30 V DC	13-30 V DC	5 V DC±5%	3.6-5 V DC / 8-30 V DC
Polarity Protection	The power lines feature reverse polarity protection; however, the signal lines do not have reverse polarity protection against the positive power supply and must not be cross-connected.				
Insulation Resistance	> 100M Ω@100V				
Zero-point Temp. Drift	0.01%FS/°C				
Full scale Temp. Drift	0.005%FS/°C				
Power Consumption	24V: 2.8mA; 12V: 5.1mA; 5V: 10.1mA				
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.				
Pressure Type	Gauge pressure; Sealed gauge and absolute optional				
Certificate	ATEX (II 1G Ex ia IIC T5 Ga), TUV, RoHS and CE				
Surge & Lightning Protection	Surge ±2000V (digital); Air discharge ±8000V; contact discharge ±6000V				
Blind area	20.5mm				
Cable optional	Cable materials are optional according request, we offer 3 type special cable as follow: PE Cable(Water Proof); PUR Cable(Oil/Fuel Proof); FEP Cable(Anti-Corrosive)				
Magnetic attraction force	About 15-20Kg				

**Dimensions and Drawing**



**Electrical Connections**



		Cable-out	
	Current	Red	U+
		Green	Iout(U-)
		Yellow	⊥ Connect to earth ground
	Voltage	Red	U+
		Green	Vout
		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:







<b>604</b> Selection Type	<b>BS</b> (Type BS)	<b>11</b>	<b>F</b>	<b>G</b>	<b>E5</b>	<b>S11</b>	<b>D3</b>	<b>2</b>	<b>1</b>	<b>003</b>
Range	Range reference to range selection table code									
Pressure & Level Unit	F=m Fuel (Min: 1 m Fuel; Max:20 m Fuel ) B=bar (Min: 0.1bar Max: 2 bar) P=Psi (Min:1Psi; Max:29 Psi) K= kPa (Min:10 kPa; Max:200 kPa)									
Pressure Type	G=Gauge/Relative pressure type (universal) A=Absolute pressure (customized)									
Signal Output	E5=4-20mA      E6=0-5V      E7=0-10V E21=0.5-4.5V non-ratiometric (default) E8=0.5-4.5V ratiometric (by customized) E0=1-5V      E11=RS485(MODBUS) X= By Customized									
Power Supply	S6=5 V DC      S11=7-30 V DC      S12=8-30 V DC S62=3.6-5 V DC      S17=10-30 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 G0=0.72g/cm3 density gasoline      G2=0.725g/cm3 density gasoline G5=0.737g/cm3 density gasoline      X=Others Liquid and Density By Customized									
Others Function (Optional)	1=Integrated magnetic end cap(dedicated for static tanks) 2=Split magnetic end cap(dedicated for moving tanks) FC=FEP Cable									
Accuracy	1=0.5%F.S      2=0.25%F.S      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: 604BS11FGE5S11D321003

(Model: HPT604-BS, fuel level range 0-2m, gauge type, 4-20mA, 7-30 V DC, 0.85g/cm3 density diesel, split type, 0.5%F.S accuracy with 3 meters cable)

### Accessories

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

	Description	Order number
	<p><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.</p>	0008
	<p><b>Locking flange</b>                      For locking cables, made of aluminum alloy</p>	0029
	<p><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</p>	0028
	<p><b>Desiccant drying cartridge</b>                      Desiccant Pack installed on Vented Transducer cable. The cartridge will have to be field replaced as site environment requires.</p>	0010
	<p><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.</p>	0003
	<p><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.</p>	0005
	<p><b>Surge electrostatic protector</b>                      Anti-surge <math>\pm 2000V/\pm 4000V</math>, 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