

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 LT)

Submersible Fuel Level Pressure Transducer & Transmitter



Applications

- Level Measurement in Bio-Fuels
- Monitoring of Gasoline & Diesel Fuel Tanks
- Level Measurement in Ballast Tanks
- Level Measurement in Oil Tanks
- Monitoring of Contain Coolant for Diesel Engines
- Level Measurement in Adblue Tanks
- Level Measurement in Kerosene

Features

- Imported GE pressure cells, 0.5%F.S.
- Survives Harsh Environments
- EMI/RFI Protection
- Custom level ranges from 1m to 50m
- Unique impurities filter mesh design
- IP68 full sealed plastic water proof design
- CE, RoHS and ATEX Approved
- Custom PU or FEP cable length
- Resolution up to 0.1mm (range less than 6m)



Profiles

HPT604-LT is a high performance submersible pressure level transducer, which is suitable for level and temperature measurement of different types of fuels, besides, it solves the problem of measurement of the oil level in irregular tanks, which might challenge other similar sensors. It can not only measure liquid level but also volume and percentage. The problems that influence by temperature drift received and poor accuracy in the whole temperature span are also solved.

It consists of the U.S.A imported GE piezoresistive sensing element encased in full SUS304 housing. The device comes equipped with a 270-pound tensile strength shielded and vented cable. Vented tube in the cable automatically compensates for changes in atmospheric pressure above the tank. The vent is protected with a maintenance free filter eliminating particulate or water droplets from entering the transducer.

HPT604-LT incorporates lightning and surge protection utilizing dual arrestor technology to assure under the input and output short-circuit conditions to protect prevent reverse connection.

Holykell can provide a cost effective solution for level monitoring for a variety of applications. Welcome your inquiry.

Measuring range

bar	0 to 0.05 ... 0 to 2
inWC	0 to 20 ... 0 to 800
psi	0 to 1.0 ... 0 to 30
m fuel	0 to 0.5 ... 0 to 20

When choosing the FEP cable, only measuring ranges up to 0 ... 2 bar, 0 ... 30 psi and 0 ... 20 m fuel are available. The given measuring ranges are also available in mbar, kPa and MPa

Materials

Wetted Parts	Standard	Optional
Case and sensor	Stainless steel 304	Ceramic
Protection cap	Stainless steel 304	PP
Cable	PUR	FEP

Mounting position

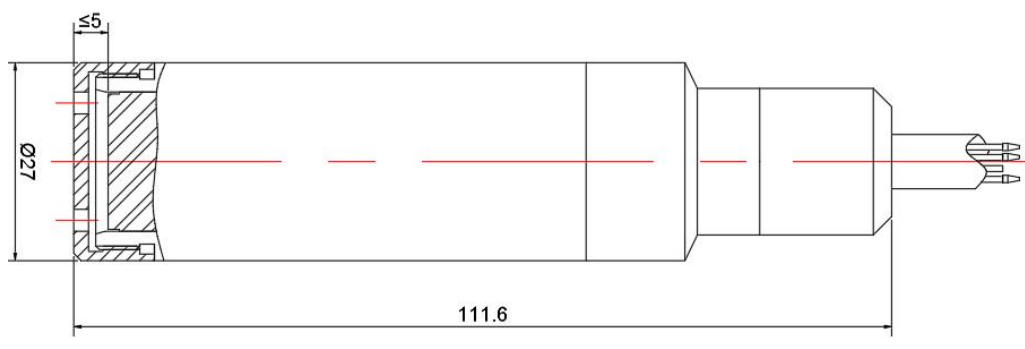
Calibrated in vertical mounting position with pressure connection facing downwards.

Specifications

Ambient Temperature: 25°C (unless specified)

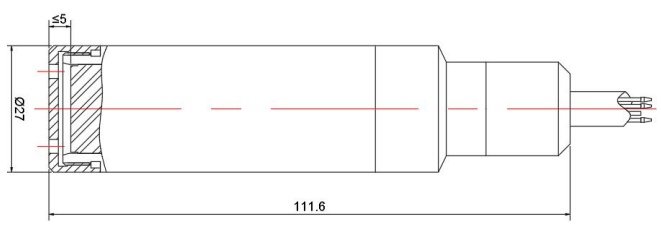
Parameter	HPT604 (Type LT)
Pressure Range	0-0.1bar.....2bar / 0-1m.....20m fuel level Optional (See P1 page description)
Overload	200% F.S.
Burst Pressure	500% F.S.
Accuracy	≤ ±0.5%F.S (≥2m level range and between 0-50 degree C); ≤ ±1.0%F.S (0.5m≤Level Range<2m level range and between 0-50 degree C)
(Linearity Hysteresis Repeatability)	Including non-lin., rep. and hys. Optional
Long-term Stability	≤ ±0.1 % of span/year
Temperature Range	-30 to +70 degree C
Temperature Accuracy	±1%F.S. (± 1 °C)
Working Temp.	-40-80°C (non-corrosive medium)
Storage Temp.	-40°C~80°C (Nitrile rubber sealing ring); -20°C~80°C (fluororubber rubber sealing ring)
Temperature Compensation	0-80°C
Medium compatible	Compatible with SUS304 Stainless Steel
Electrical Wire	4 wires
Output	RS485 Modbus RTU
Power Supply	3.5-36Vdc
Polarity protection	Available for signal wires or Power wires each other reverse, unavailable signal and power wire reverse!
Insulate resistance	> 100M Ω@100V
Zero Temp. Drift	0.2%FS/°C (≤100kPa) ; 0.1%FS/°C (>100kPa)
FS Temp. Drift	0.02%FS/°C (≤100kPa) ; 0.01%FS/°C (>100kPa)
Electrical connection	Fixed cable with vented tube, IP68 rated
Response time	≤200ms
Data overtime interval	≥50ms
Blind Zone of Probe	5 mm
Pressure Type	Gauge pressure
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 ±2000V, Air conduction ±8000V; contact discharge ±4000V protection.
Cable optional	Cable materials are optional according request, we offer 3 type special cable as follow: PE Cable (Water Proof) ; PU Cable (Diesel Proof) ; FEP Cable (Anti-Corrosive for gasoline)

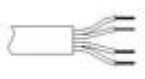
Dimensions and Drawing



Unit: mm

Electrical Connections



Direct cable outlet		
 RS485 RTU Modbus	Red	U+
	Black	U-
	Green	RS485A
	Blue	RS485B
	Yellow	⏏ Connect to earth ground

How to Order

1. Range Selection Table:

		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	LT	11	F	G	E11	S42	D1	N	1	003
Selection Type	(Type LT)									
Range	Range reference to range selection table code									
Pressure & Level Units	F=m Fuel (Min: 1 m; Max:20 m) B=bar (Min: 0.1bar Max: 2bar) P=Psi (Min:1Psi; Max:30Psi) K= kPa (Min:10 kPa; Max:200 kPa)									
Pressure type	G=Gauge/Relative pressure type A=Absolute pressure (customize)									
Signal Output	E11=RS485(MODBUS)									
Power Supply	S42=3.5-36Vdc S11=7-30Vdc									
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=Others Liquid and Density By Customized									
Others Function (Optional)	N=5 mm blind zone type FC= Anti-corrosion FEP cable (gasoline application) PPC=PP material cap/filter cover TF=Additional Terminal box and Flange mounting 10=1/2"NPT male Electronic connector mounting									
Accuracy	0=1.0%F.S@0~50 degree C (Min 0-2mH2O), 1.5%F.S@0~50 degree C (Min 0-1mH2O); 1=0.5%F.S@0~50 degree C (Min 0-2mH2O), 1.0%F.S@0~50 degree C (Min 0-1mH2O); 2=0.25%F.S@0~50 degree C (Min 0-2mH2O), 0.5%F.S@0~50 degree C (Min 0-1mH2O); (Code 0 is typical, Code 1 is full temp span high accuracy type, Code 3 is high price customize type)									
Cable length	001= Cable 1M 002= Cable 2M 003= Cable 3M X= By customized									

Example of a complete PN: 604LT11FGE11S42D1N1003
 (Model: HPT604-LT, fuel level range 0-2m, gauge type, RS485, 3.5-36Vdc supply, 0.84g/cm3 density diesel, 5mm blind area 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>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 Protection Box 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 / Pressure type / Output signal / Power supply / medium / others option / Accuracy / Cable length / Accessories