

HPT604-FW LEVEL • DATASHEET•



HPT604-FW Submersible Water Detector and Fuel Level Transducer



Features:

- ➤ Accuracy: <±0.25%F.S.
- ➤ Wide working temperature scope
- ➤ Advanced digital temperature compensation.
- Excellent resistance against impact, overload, Shock and erosion.
- > Detect water exist under the fuel
- > Impact resistance and disturbance
- 2 times range standard overload
- CE approved

Applications:

- ➤ Fuel Tank Level Monitor Systems
- ➤ Water Detect Under The Diesel
- ➤ Water Under Oil and Fuel Level Monitor
- ➤ Oil And Water Separation Location Detection
- ➤ Position Detector Of Silt Layer
- ➤ Water Level Position Detector
- ➤ And so on

Profiles

HPT604-FW is full sealed and potting waterproof submersible water detect and fuel level transducers. It is made by high stable and reliable piezo-resistive pressure sensor with water detect sensors and high accurate circuit board into the stainless steel housing. Integrated conductivity sensor and standard signal provide the user easy and convenient application in the local working place. The special cable connects with housing, can be immersed into the media for a long time.

HPT604-FW Fuel tank water and fuel level transducer has compact size, light weight and good stability; it can be used for water alarm under the diesel tank, water position under fuel tanks detect and others hierarchy liquids level and position monitor.



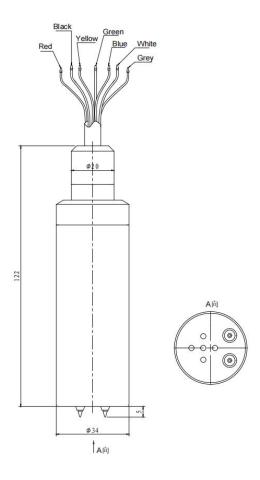
Specifications

Ambient Temperature: 25°C (unless otherwise specified)

PARAMETERS Level range 0m [∞] 0.5m20m Optional Pressure Type Gauge/Relative pressure type(Typical); Absolute pressure Optional Overload 150%F.S Rated 100 ohm signal output or PNP signal optional. Water Exist alarm Output Ohm signal: Blank load & Fuel exist: Non-signal, water detected output 100 ohm ±10hm PNP signal: Blank load & Fuel exist: normally open, water detected output PNP closed. Fuel Level Output 4°20mA 0°5V 0°10V RS485 Modbus RTU optional Electronic Wire 2 wires Loop 3 wires 3 wires 4 wires Power Supply DC 730V DC 830V DC 1330V DC 730V Polarity protection Yes Power supply+&- only Power supply+&-; Signal A&B only Accuracy 0.5 0.25 0.1 %FS By Customized Long-term Stability 0.15%FS/var Verestable of the control of the co							
Pressure Type Gauge/Relative pressure type(Typical); Absolute pressure Optional Overload 150%F.S Rated Water Exist alarm Output Ohm signal output or PNP signal optional. Water Exist alarm Output Ohm signal: Blank load & Fuel exist: Non-signal, water detected output 100 ohm ±10hm PNP signal: Blank load & Fuel exist: normally open, water detected output PNP closed. Fuel Level Output 4~20mA 0~5V 0~10V RS485 Modbus RTU optional Electronic Wire 2 wires Loop 3 wires 3 wires 4 wires Power Supply DC 730V DC 830V DC 1330V DC 730V Polarity protection Yes Power supply+&- only Power supply+&-; Signal A&B only Accuracy 0.5 0.25 0.1 %FS By Customized Long-term Stability 0.15%FS/year Sept. Sept. Sept. By Customized Temperature Compensation 0~50°C(Typical); -10~60°C(by customized) Full provided RS485 MODBUS RTU) 10mA Medium Temp. -3070 degree C Current: (U-12)/0.02(□ RS485 MODBUS RTU) 10mA Max work current (4-20mA) 21.8mA (0-5/10V) 5mA	PARAMETERS						
Overload 150%F.S Rated 100 ohm signal output or PNP signal optional. Water Exist alarm Output Ohm signal: Blank load & Fuel exist: Non-signal, water detected output 100 ohm ± 10hm PNP signal: Blank load & Fuel exist: normally open, water detected output PNP closed. Fuel Level Output 4 ~20mA 0~5V 0~10V RS485 Modbus RTU optional Electronic Wire 2 wires Loop 3 wires 3 wires 4 wires Power Supply DC 730V DC 830V DC 1330V DC 730V Power Supply DC 730V DC 830V DC 1330V DC 730V Power Supply Power supply+&-, Signal A&B only Accuracy 0.5 0.25 0.1 %FS By Customized Long-term Stability 0.15%FS/year Verestignal Verestignal By Customized Long-term Stability 0.15%FS/year Verestignal Verestignal Verestignal RFS By Customized Sensitivity temp. drift ± 0.02%FS/°C Verestignal Verestignal Restignal Restignal Restignal	Level range	0m~0.5m20m Optional					
100 ohm signal output or PNP signal optional.	Pressure Type	Gauge/Relative pressure type(Typical); Absolute pressure Optional					
Water Exist alarm Output Ohm signal: Blank load & Fuel exist: Non-signal, water detected output 100 ohm ± 10hm PNP signal: Blank load & Fuel exist: normally open, water detected output PNP closed. Fuel Level Output 4~20mA 0~5V 0~10V RS485 Modbus RTU optional Electronic Wire 2 wires Loop 3 wires 3 wires 4 wires Power Supply DC 730V DC 830V DC 1330V DC 730V Polarity protection Yes Power supply+&- only Power supply+&-; Signal A&B only Accuracy 0.5 0.25 0.1 %FS By Customized Long-term Stability 0.15%FS/year Sensitivity temp. drift ± 0.02%FS/°C Sensitivity temp. drift (FS485 MODBUS RTU) 10mA Medium Temp. -3070 degree C Sensitivity temp. drift (RS485 MODBUS RTU) 10mA Medium Temp. Medium Temp. (Po 5/10V) 5mA (RS485 MODBUS RTU) 10mA Medium Temp. Medium Temp. Medium Temp. 2000m 1000m 1000m 1000m Medium Temp. Medium Temp. Medium Temp.	Overload	150%F.S Rated					
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Fuel Level Output 4~20mA 0~5V 0~10V RS485 Modbus RTU optional Electronic Wire 2 wires Loop 3 wires 3 wires 4 wires Power Supply DC 730V DC 830V DC 1330V DC 730V Polarity protection Yes Power supply+&- only Power supply+&-; Signal A&B only Accuracy 0.5 0.25 0.1 %FS By Customized Long-term Stability ±0.02%FS/°C 5 0.2 0.1 %FS By Customized Sensitivity temp. drift ±0.02%FS/°C 5 5 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 7 7 7 7 7 7 7 7 7 7 8 7 8 7 8 7 8 7 8 7 8 9 9 9 9 9 9 9 9 9	Water Exist alarm Output	Ohm signal: Blank load & Fuel exist: Non-signal, water detected output 100 ohm \pm 10hm					
Electronic Wire 2 wires Loop 3 wires 3 wires 4 wires Power Supply DC 730V DC 830V DC 1330V DC 730V Polarity protection Yes Power supply+&- only Power supply+&-; Signal A&B only Accuracy 0.5 0.25 0.1 %FS By Customized Long-term Stability 0.15%FS/year Seritivity Seritivity temp. drift ±0.02%FS/°C Seritivity temp. drift £0.02%FS/°C Evaluation £0.02%FS/°C Evaluation £0.02%FS/°C		PNP signal: Blank load & Fuel exist: normally open, water detected output PNP closed.					
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Polarity protectionYesPower supply+&- onlyPower supply+&-; Signal A&B onlyAccuracy0.50.250.1%FSBy CustomizedLong-term Stability0.15%FS/yearZero temp. drift±0.02%FS/°CSensitivity temp. drift±0.02%FS/°CTemperature Compensation0°50°C (Typical); -10°60°C (by customized)Medium Temp3070 degree CLoad ResistanceCurrent: (U-12)/0.02(Ω)Max work current(4-20mA) 21.8mA(0-5/10V) 5mA(RS485 MODBUS RTU) 10mAMax signal transfer distance1000m200m1000mLighting&Surge protectionSurge: ±2000V Air conduction more than 8000V; external sensor more than 4000 Voltage protection.EMC StandardEN61326-1:2013; EN61326-2-3:2013 EN61000-6-2:2005; EN61000-6-4:2007+A1Intrinsic safety CertificateExia IICT6	Electronic Wire	2 wires Loop	3 wires	3 wires	4 wires		
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Long-term Stability0.15%FS/yearZero temp. drift $\pm 0.02\%FS/^{\circ}C$ Sensitivity temp. drift $\pm 0.02\%FS/^{\circ}C$ Temperature Compensation0~50°C (Typical); -10~60°C (by customized)Medium Temp3070 degree CLoad ResistanceCurrent: (U-12)/0.02(Ω)Max work current(4-20mA) 21.8mA(0-5/10V) 5mA(RS485 MODBUS RTU) 10mAMax signal transfer distance1000m200m1000mLighting&Surge protectionSurge: $\pm 2000V$ Air conduction more than 8000V; external sensor more than 4000 Voltage protection.EMC StandardEN61326-1:2013;EN61326-2-3:2013 EN61000-6-2:2005;EN61000-6-4:2007+A1Intrinsic safety CertificateExia IICT6	Polarity protection	Yes Power supply+&- only Power supply+&-; Signal A&B or				t-; Signal A&B only	
Zero temp. drift $\pm 0.02\%FS/^{\circ}C$ Sensitivity temp. drift $\pm 0.02\%FS/^{\circ}C$ Temperature Compensation $0^{\sim}50^{\circ}C(Typical); -10^{\sim}60^{\circ}C(by customized)$ Medium Temp. $-3070 \ degree \ C$ Load Resistance $Current: (U-12)/0.02(\Omega)$ Max work current $(4-20\text{mA}) \ 21.8\text{mA} \ (0-5/10\text{V}) \ 5\text{mA} \ (RS485 \ MODBUS \ RTU) \ 10\text{mA}$ Max signal transfer distance $1000\text{m} \ 200\text{m} \ 1000\text{m}$ Lighting&Surge protection $200\text{m} \ 1000\text{m}$ EMC Standard $200\text{m} \ 1000\text{m}$ EN61326-1:2013;EN61326-2-3:2013 EN61000-6-2:2005;EN61000-6-4:2007+A1	Accuracy	0.5	0.25	0.1	%FS	By Customized	
Sensitivity temp. drift $\pm 0.02\%$ FS/°C Temperature Compensation $0^{\circ}50^{\circ}C$ (Typical); $-10^{\circ}60^{\circ}C$ (by customized) Medium Temp. -3070 degree C Load Resistance Current: $(U-12)/0.02(\Omega)$ Max work current $(4-20\text{mA}) 21.8\text{mA}$ $(0-5/10\text{V}) 5\text{mA}$ (RS485 MODBUS RTU) 10mA Max signal transfer distance 1000m 200m 1000m Lighting&Surge protection 200m 200m 200m 200m 200m 200m EMC Standard 200m	Long-term Stability	0.15%FS/year					
Temperature Compensation 0~50 °C (Typical); -10~60 °C (by customized) Medium Temp3070 degree C Load Resistance Current: (U-12)/0.02(Ω) Max work current (4-20mA) 21.8mA (0-5/10V) 5mA (RS485 MODBUS RTU) 10mA Max signal transfer distance 1000m 200m 1000m Lighting&Surge protection Surge: ±2000V Air conduction more than 8000V; external sensor more than 4000 Voltage protection. EMC Standard EN61326-1:2013;EN61326-2-3:2013 EN61000-6-2:2005;EN61000-6-4:2007+A1 Intrinsic safety Certificate Exia IICT6	Zero temp. drift	\pm 0.02%FS/ $^{\circ}$ C					
Medium Temp3070 degree CLoad ResistanceCurrent: (U-12)/0.02(Ω)Max work current $(4-20\text{mA})$ 21.8mA $(0-5/10\text{V})$ 5mA(RS485 MODBUS RTU) 10mAMax signal transfer distance 1000m 200m 1000m Lighting&Surge protectionSurge: $\pm 2000\text{V}$ Air conduction more than 8000V; external sensor more than 4000 Voltage protection.EMC StandardEN61326-1:2013; EN61326-2-3:2013 EN61000-6-2:2005; EN61000-6-4:2007+A1Intrinsic safety CertificateExia IICT6	Sensitivity temp. drift	\pm 0.02%FS/ $^{\circ}$ C					
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Max signal transfer distance1000m200m1000mLighting&Surge protectionSurge: ± 2000V Air conduction more than 8000V; external sensor more than 4000 Voltage protection.EMC StandardEN61326-1:2013; EN61326-2-3:2013 EN61000-6-2:2005; EN61000-6-4:2007+A1Intrinsic safety CertificateExia IICT6	Load Resistance	Current: (U-12)/0.0	02(Ω)				
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Air conduction more than 8000V; external sensor more than 4000 Voltage protection. EMC Standard EN61326-1:2013;EN61326-2-3:2013 EN61000-6-2:2005;EN61000-6-4:2007+A1 Intrinsic safety Certificate Exia IICT6	Max signal transfer distance	1000m	200m		1000n	n	
Air conduction more than 8000V; external sensor more than 4000 Voltage protection. EMC Standard EN61326-1:2013;EN61326-2-3:2013 EN61000-6-2:2005;EN61000-6-4:2007+A1 Intrinsic safety Certificate Exia IICT6	Lighting&Surge protection	Surge: ±2000V					
EN61000-6-2:2005;EN61000-6-4:2007+A1 Intrinsic safety Certificate Exia IICT6		Air conduction more than 8000V; external sensor more than 4000 Voltage protection.					
Intrinsic safety Certificate Exia IICT6	EMC Standard	EN61326-1:2013;EN61326-2-3:2013					
		EN61000-6-2:2005;EN61000-6-4:2007+A1					
Water Proof Grade IP68	Intrinsic safety Certificate	Exia IICT6					
	Water Proof Grade	IP68					



Dimensions and Drawing



Electronic Connections

	Signal output Wire color	4-20mA+100Ω	RS485+100Ω	0-5V/0-10V+100Ω
	Red	V _{CC} +	V _{CC} +	V _{CC} +
Ohm signal	Black	GND	GND	GND
	Green	S _i +	RS485A	V _{out}
	Blue	R	RS485B	R
	Yellow	R	R	R
	Grey	Shield/Earth	Shield/Earth	Shield/Earth
	White		R	

PNP signal	Signal output Wire color	4-20mA+PNP	RS485+PNP	0-5V/0-10V+PNP
	Red	V _{CC} +	V _{CC} +	V _{CC} +
	Black	GND	GND	GND
	Green	S _i +	RS485A	V _{out}
	Blue	PNP+	RS485B	PNP+
	Yellow	Shield/Earth	Shield/Earth	Shield/Earth
	White		PNP+	



How to Order

Use the **bold** characters from the chart below to construct a product code 604FW 11 S11 E5E50 D1 003 G 1 Model: Cable Length 604FW 003 3 meters Х By Customized Pressure & Level Units Accuracy В bar(Min: 0.05bar Max: 2bar) ≤±0.5%F.S (Typical) Ρ Psi(Min:0.73Psi; Max:29Psi) 1 ≤±0.25%F.S F m Fuel(Min:0.5m; Max:20m) ≤±0.1%F.S(by customized) Other Function (Optional) Pressure type Ν Standard with water detection function G Gage/Relative pressure type (universal) Α Absolute pressure (customized) Pressure Range · 0...0.5 0...4.0 00 18 01 0...1.0 19 0...5.0 Measuring Medium 03 0...1.2 21 0...7.0 D1 0.84g/cm3 density diesel 06 0...1.5 24 0...10 **D2** 0.83g/cm3 density diesel 09 0...1.8 25 0...12 0.85g/cm3 density diesel **D**3 0...2.0 0...15 11 26 **D4** 0.86g/cm3 density diesel 13 0...2.2 27 0...16 X By Customized 16 0...2.5 28 0...20 17 0...3.0 By Customized Signal Output

Power supply:

S11 7-30 Vdc
 S12 8-30 Vdc
 S43 13-30 Vdc
 X By Customized

Fuel/oil level signal

E5 4-20 mA (2 wires) **E6** 0-5 V (3 wires)

E7 0-10 V (3 wires)

E11 RS485 MODBUS RTU (4 wires)

XO By Customized

Water detection signal

E50 Ohm **E51** PNP

X1 By Customized