

# MPM416W

## Submersible Level Transmitter



### Features

- Remote construction, fully sealed stainless steel sensor, cast aluminum electronics housing and easy calibration and wiring
- Explosion-proof, certified Exia II CT6Ga, compliant with GB3836.4
- CCS certified, in accordance with “Rules for Classification of Sea-Going Steel Ships” (2006)

### Introduction

MPM416W Submersible Level Transmitter uses a high-performance silicon piezoresistive pressure sensor to measure liquid static pressure, proportional to the liquid level. The signal is processed and converted into a standard output (current or voltage), providing a linear relationship between the output and liquid level. With high accuracy and compact size, the transmitter can be directly immersed to measure the distance from the sensor tip to the liquid surface. It is widely used for level measurement and control in oil & gas, chemical, power, water supply, and hydrological industries.

### Specifications

Range	
Overpressure	Refer to Measuring Range & Accuracy
Accuracy	
Long-term stability	±20mmH <sub>2</sub> O
Storage temperature	-20°C ~ 85°C
Ambient temperature	-10°C ~ 70°C ; -10°C ~ 60°C (Intrinsically safe)
Vibration	10g, 55Hz ~ 2000Hz
Shock	100g, 11ms
IP rating	IP68 (sensor); IP65 (junction box)

## Measuring Range & Accuracy

Unit	Measuring Range	Overpressure	Code	Accuracy
mHzO	0 - 1	4	H001	±1%FS
	0 - 2	4	H002	±0.5%FS
	0 - 3	7	H003	
	0 - 4	14	H004	
	0 - 5	20	H005	
	0 - 6	20	H006	
	0 - 7	20	H007	
	0 - 8	20	H008	
	0 - 9	20	H009	
	0 - 10	20	H010	

Test standard: GB/T 17614.1-2015/IEC60770-1:2010

Ambient temperature: 20°C ± 5°C

Relative humidity: 45%~75%

## Thermal error

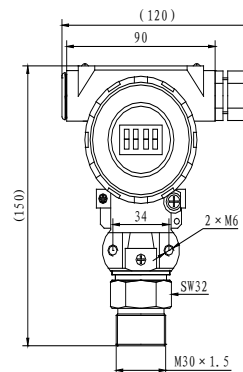
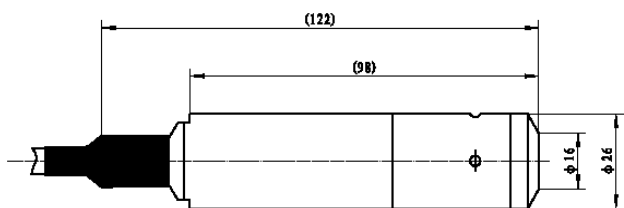
Zero thermal error	5mHzO < Range ≤ 10mHzO	≤ ±0.02% FS/°C
	2mHzO < Range ≤ 5mHzO	≤ ±0.03% FS/°C
	Range ≤ 2mHzO	≤ ±0.05% FS/°C
Sensitivity error	≤ ±0.02% FS/°C	

## Output Signals

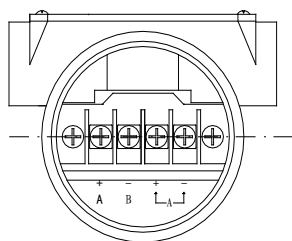
Output signal	Supply voltage	Output type	Load resistance
4mA~20mA DC(E)	15V~28V DC (Intrinsically safe powered by safety barrier)	2-wire	≤(U-15)/0.02 (Ω)
0V~5V DC(J)		3-wire	> 5 kΩ
1V~5V DC(F)			
0V~10V DC(V)			

### Outline Construction

Unit: mm Junction box dimensions

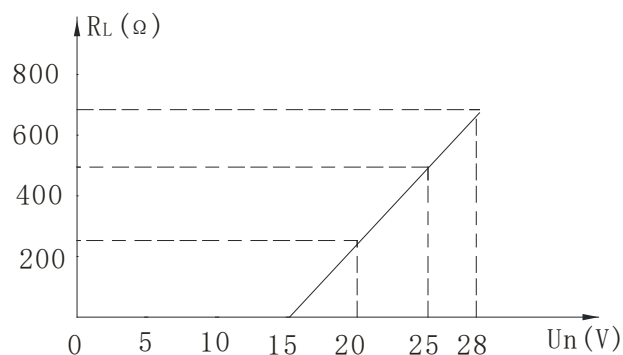


### Electrical Connectio



Current		Voltage	
Terminal	Definition	Terminal	Definition
+/A	V+	+/A	V+
-/B	IO	-/B	OUT
			GND

### Load Characteristics



## Order Guide

MPM416W	Submersible Level Transmitter										
	Range	Measuring range 0mH <sub>2</sub> O ~ 1mH <sub>2</sub> O...10mH <sub>2</sub> O									
	HXXX	Range-specific code									
	Code	Output signal									
	E	4mA ~ 20mA DC									
	F	1V ~ 5V DC									
	J	0V ~ 5V DC									
	V	0V ~ 10V DC									
	Code	Power supply									
	V13	15V ~ 28V DC									
	Code	Accuracy									
	A2	±5%FS									
	A3	±1%FS									
	Code	Construction Material									
		Isolated diaphragm	Pressure port	Housing							
	22	SS 316L	SS 304	SS 304							
	24	SS 316L	SS 316L	SS 316L							
	Code	Sensor sealing									
	00	FKM (standard)									
	01	EPDM (optional for special media based on compatibility)									
	Code	Cable material									
	P1	PE (standard)									
	P2	PUR (optional for special media based on compatibility)									
	P3	PVC (optional for special media based on compatibility)									
	Code	Cable length (unit: m)									
	L001	1									
	L1D5	1.5									
	L002	2									
	L003	3									
	L004	4									
	L005	5									
	L006	6									
	L007	7									
	L008	8									
	L009	9									
	L010	10									
	L015	15									
	L020	20									
	L025	25									
	L030	30									
	L035	35									
	L040	40									
	Code	Certification									
	N	None									
	i	Intrinsically safe explosion-proof Ex ia IIC T6 Ga DC									
	T	Ship-use									
	Code	Accessory									
	N	None									
	M3	3.5-digit LCD digital indicator	only optional for intrinsically safe explosion-proof								
	M6	M6 digital indicator	only optional for no certification requirement and 4mA ~ 20mA DC								
	M7	M7 digital indicator									
MPM416W	H001	E	V13	A2	22	00	P1	L002	N	M6	The complete spec.

## Notes

1. M6 or M7 indicators are only optional for transmitters with a 4mA~20mA output signal, with a power supply of  $\geq 16\text{V DC}$ .
2. The ambient temperature of transmitter should be  $-10^{\circ}\text{C}\sim 70^{\circ}\text{C}$  with M6 indicator, while  $-10^{\circ}\text{C}\sim 60^{\circ}\text{C}$  with M7 indicator.
3. The measured medium shall be compatible with the wetted parts materials, and the medium's density (excluding water) under measurement conditions must be specified.
4. In areas prone to thunderstorms, it is advisable to install lightning protection devices and ensure proper grounding of the product and power supply to minimize the risk of lightning damage to the transmitter.
5. For other special requirements, please consult with the MICROSENSOR and specify them in the order.