

## MPM416W/WK/WRK Submersible Level Transmitter

### Features

- Separate construction; full sealed stainless steel construction for submersible/inserted sensor; aluminum-alloy electric connection box; easy for installation, wiring and calibration;
- MPM416WK has stainless steel tube protection, flange installation, local display and calibration;
- MPM416WRK is full welded, stainless steel flexible tube armoured;
- Explosion-proof version product conforms to Exia CT6 of Standard GB3836.4; Explosion-proof Certificate is issued
- Ship-use product conforms to CCS Rules of Classification of Sea-going Steel Ships ( 2006 ) ; Ship-use Product Certificate is issued;
- CE Certificate



MPM416W Submersible  
Level Transmitter



MPM416WK Submersible  
Level Transmitter

### Introduction

MPM416W/MPM416WK/MPM416WRK Submersible Level Transmitters use high performance piezoresistive pressure sensor as sensing elements. It measures liquid static pressure accurately which is positive proportional to liquid depth, transmitting pressure signal into standard current/voltage output signal by amplifier circuit board. The product has high accuracy, compact size and easy operation characteristics, for it can be submersible into the liquid to measure level from transmitter bottom to liquid surface. For the liquid measure and control of both petroleum, chemi-industry, power station, city water supply and drainage and hydrology, it is widely used.



MPM416WRK Flexible  
Armoured Level Transmitter

<http://www.microsensor.cn>

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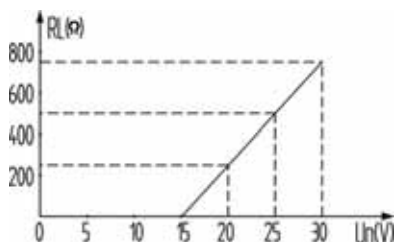
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## Specifications

Pressure range	MPM416W	1	2	5	10	20	50	100	200mH <sub>2</sub> O	
	MPM416WK	1	2	3	4mH <sub>2</sub> O					
	MPM416WRK	1	2	5	10	20mH <sub>2</sub> O				
Overpressure	1.5times FS									
Accuracy	±0.25%FS ( typ. )			±0.5%FS ( max. )						
Stability error	±0.1%FS ( typ. )			±0.2%FS ( max. )			pressure range > 20mH <sub>2</sub> O			
	±10mmH <sub>2</sub> O ( typ. )			±20mmH <sub>2</sub> O ( max. )			pressure range ≤ 20mH <sub>2</sub> O			
	±20mmH <sub>2</sub> O ( typ. )			±30mmH <sub>2</sub> O ( max. )			only for MPM416WRK			
Temp. drift		Zero drift, ± %FS/						Sensitivity drift, ± %FS/		
	Rang > 10mH <sub>2</sub> O	0.005 ( typ. )			0.01 ( max. )			0.02 ( max. )		
	Range ≤ 10mH <sub>2</sub> O	0.01 ( typ. )			0.02 ( max. )			0.02 ( max. )		
	Range ≤ 5mH <sub>2</sub> O	0.015 ( typ. )			0.03 ( max. )			0.02 ( max. )		
	Range ≤ 2mH <sub>2</sub> O	0.025 ( typ. )			0.05 ( max. )			0.02 ( max. )		
Transmitting	2-wire				3-wire			3-wire		
Power supply	15 ~ 30VDC ( Intrinsic safe version is supplied through safe barrier )				15 ~ 28VDC			15 ~ 28VDC		
Output signal	4 ~ 20mADC				0 ~ 10/20mADC			0/1 ~ 5/10VDC		
Load ( Ω )	< ( U-15 ) /0.02A				< ( U-15 ) /0.02A			> 5k		
Material contacting with media	MPM416W	Housing: stainless steel 1Cr18Ni9Ti					O-ring: Viton			
		Diaphragm: stainless steel 316L					Rubber casing: NBR			
		Cable: Φ7.2mm PVC/Polyurethane cable with vented tube								
	MPM416WK	Stainless steel 1Cr18Ni9Ti, red copper, Viton O-ring								
MPM416WRK	Stainless steel 1Cr18Ni9Ti									
Operation temp.	-10 ~ 80 ;				Intrinsic safe version: -10 ~ 70					
Storage temp.	-40 ~ 100									
Protection	IP68 ( sensor part ) , IP65 ( wiring part )									
Ex-proof class	Exia CT6									

## Load Characteristic



2-wire  
4 ~ 20mADC output  
15 ~ 30VDC power supply

$$R_L = \frac{U_n - 15V}{20mA} \times 10^3 (\Omega)$$

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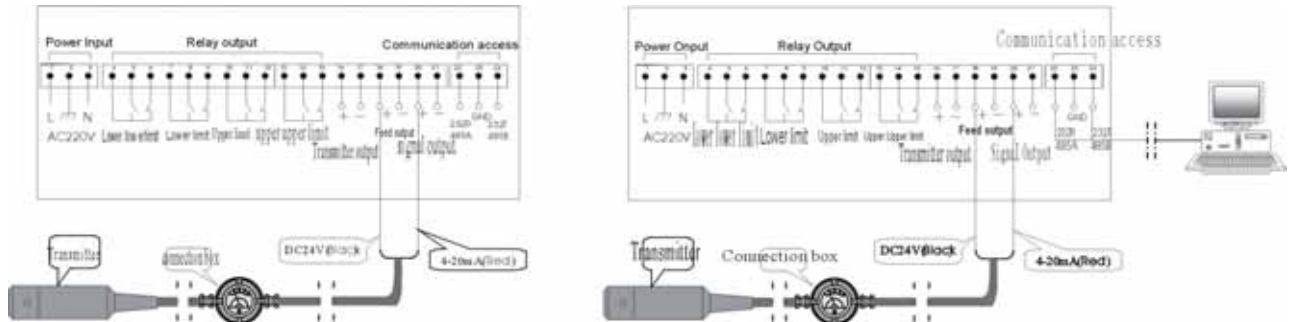
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**Outline Construction and Electric Connection**

Unit : mm	Outline dimension	Outline and Installation Dimension of Electric Housing	Terminal connection in Electric Housing
MPM416W			
MPM416W K			
MPM416W RK			

**Application Example**

MPM416W/WRK

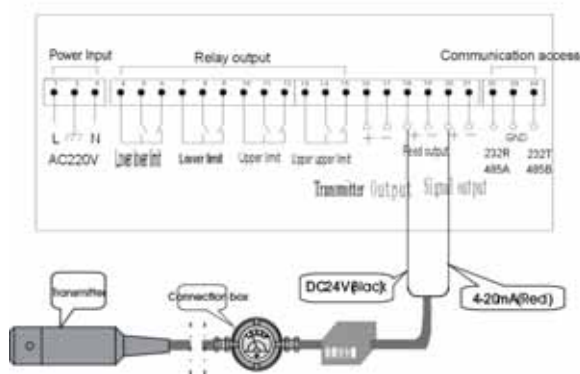


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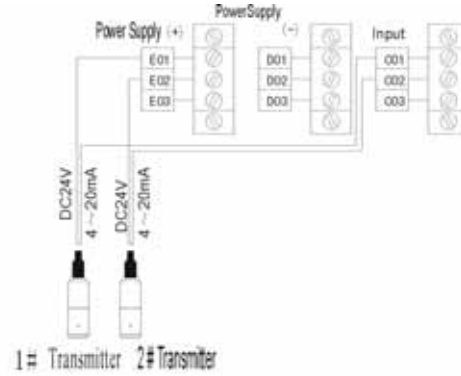
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Connecting level transmitter with measure displayer to build up one measure and control system.

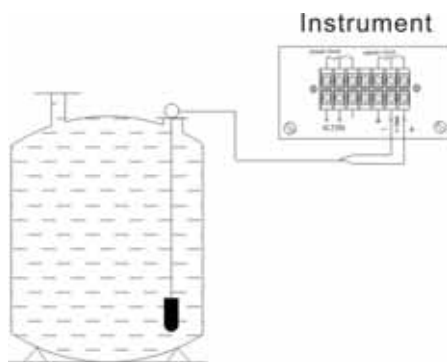


Connecting Ex-proof version transmitter with safe barrier and measure displayer to build up one measure and control system;

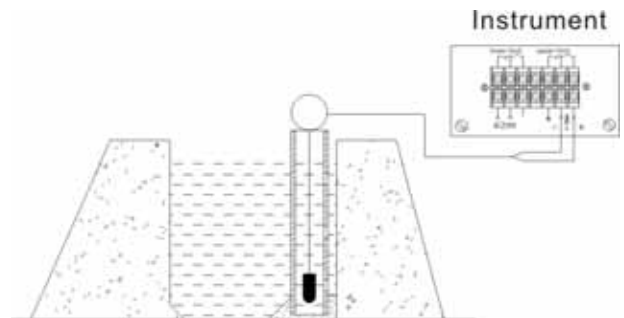
Connecting with MSB9418 measure displayer to build up one liquid measure and control system with upper and lower limits alarming. Meanwhile, the displayer could output RS232 or analog signal 1~5VDC, 0~5VDC, 4~20mADC.



Connecting the most two level transmitter with MSB9438 measure displayer to build up one level difference system with multi-channel display. It can also output 4~20mADC analog output and provide upper



When measure static level in open tank, put level transmitter into tank bottom, and fix transmitter cable and connection box at the open tank entrance.



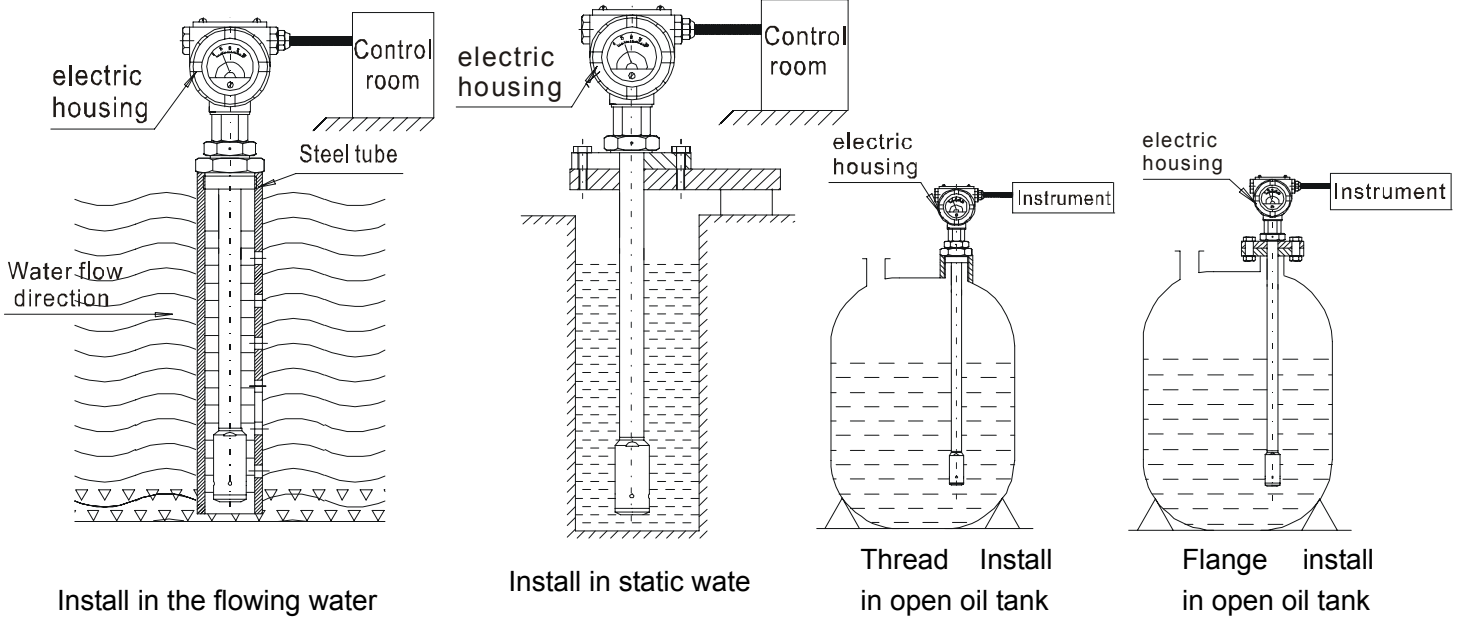
When measuring flow water, insert one steel tube  $\Phi 45$  which has little holes  $\Phi 5$  at different heights. Make holes opposite to water flowing direction, and let water go into the tube and fix cable

MPM416WK

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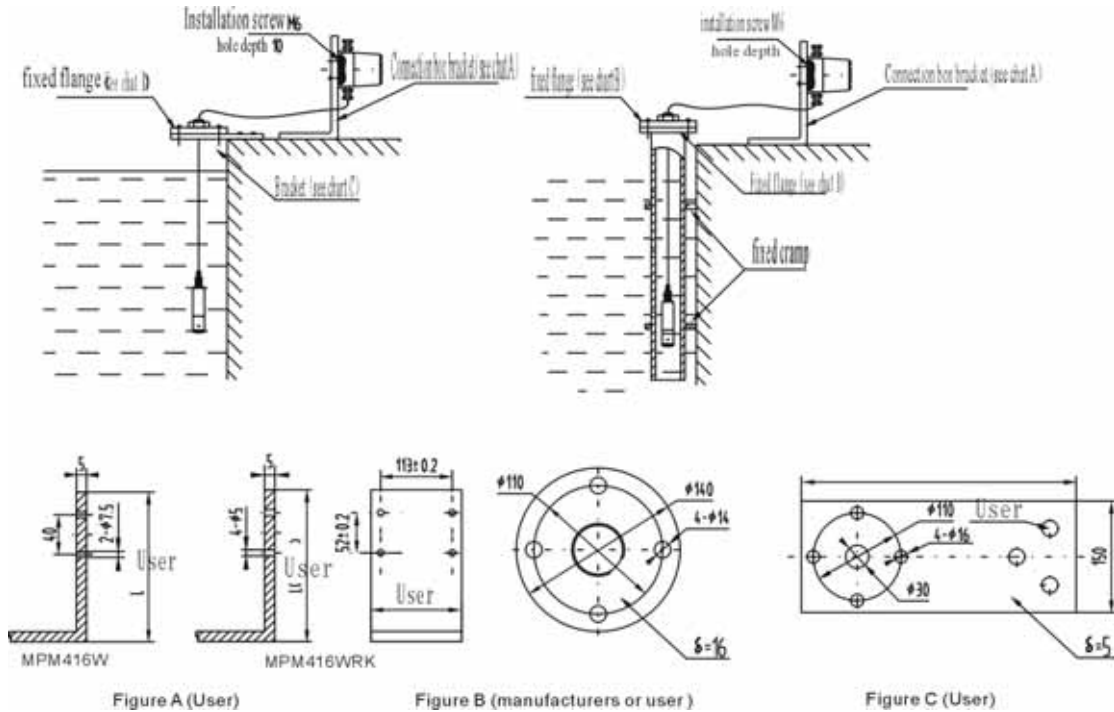
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**Installation at Local Place**

( Unit: mm )

MPM416W/WRK:

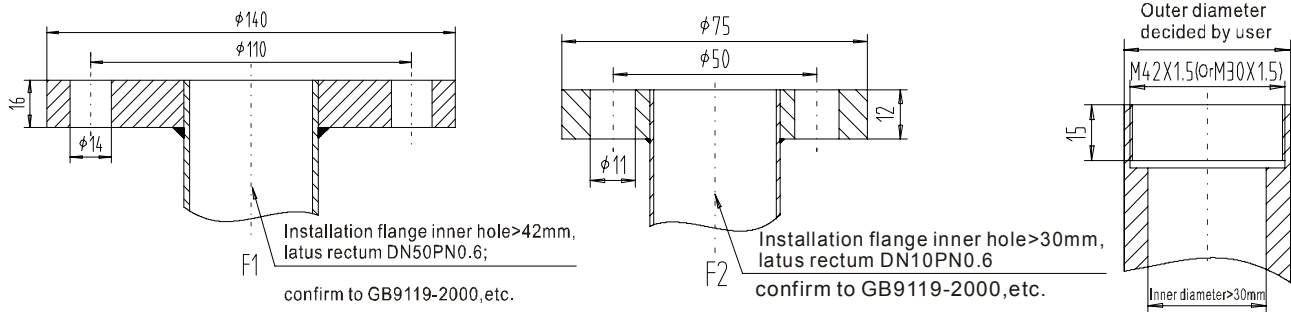


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MPM416WK ( The user needs to prepare flange and thread at local installation place )



### Order Guide

MPM416W	Submersible Level Transmitter				
MPM416WK	Armoured Level Transmitter				
MPM416WRK	Flexible Armoured Level Transmitter				
	range ( mH <sub>2</sub> O )	[0 ~ X mH <sub>2</sub> O]L	L: cable length, suggested: L-X= ( 1 ~ 2 ) m	MPM416W	
			L: armoured tube length	MPM416WK	
			L: flexible armoured tube length	MPM416WRK	
		Code	Output signal		
		E	4 ~ 20mADC		
		F	1 ~ 5VDC		
		J	0 ~ 5VDC		
		Q	0 ~ 10mADC		
		U	0 ~ 20mADC		
		V	0 ~ 10VDC		
		Code	Construction material		
			diaphragm	Pressure port	Housing
			22	SS 316L	SS
		25	Tantalum	SS	SS
		Code	Others		
	M <sub>1</sub>		0 ~ 100% hand pointer indicator ( MPM416WRK has no this option )		
	i		Intrinsic safe version Exia CT6		
	C <sub>1</sub>		M20×1.5 male, face type seal	MPM416W	
	C <sub>3</sub>		G1/2 male		
	C <sub>5</sub>		M20×1.5 male, waterline seal		
	T		Ship-use		
	F <sub>1</sub>		Fixed flange ( MPM416WK has no this option )		
	1F1	Stainless steel flange 1 DN50	MPM416WK		

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				1M1	Stainless steel male M42×1.5	
				1F2	Stainless steel flange 2 DN10	
				1M2	Stainless steel male M30×1.5	
				2F1	Carbon steel plating zinc flange 1 DN50	
				2M1	Carbon steel plating zinc male M42×1.5	
				2F2	Carbon steel plating zinc flange 2 DN10	
				2M2	Carbon steel plating zinc male M30×1.5	
MPM416W	[0 ~ 3mH <sub>2</sub> O]5	E	22	YiC <sub>1</sub>	the whole spec	

### Order Note

1. Please pay attention if the media is compatible with contacting material, especially pay attention to media density at measuring situation (except water);
2. We provide the user with PVC or polyurethane cable; polyurethane cable is more flexible and wearable. If the user has no special requirements, the default would be PVC cable;
3. If the product is installed in lightning and thunder area, please note "lightning Protection" in the order; we suggest to use lightning protection device to make sure power is grounding safely;
4. When MPM416WK transmitter's armoured tube more than 2m, we would provide the user with divided steel tube to help delivery. Please install tubes in local place;
5. When MPM416WRK transmitter is working, please do not pull flexible steel tube to protect it;
6. If the user has special requirement, please feel free to contact with our company.