

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 II 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>

Add: No.18,Yingda Road Baoji,P.R.China, 721006

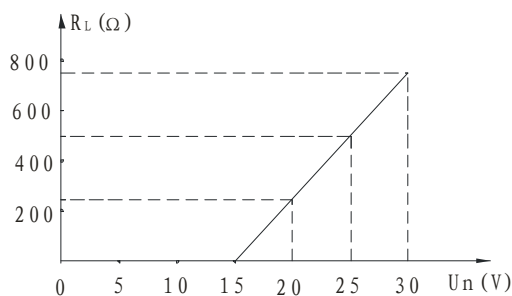
Tel: +86 917 3600739/3600909 Fax: 3609977

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Specifications

Pressure range	MPM416W	1	2	5	10	20	50	100	200mH ₂ O
	MPM416WK	1	2	3	4mH ₂ O				
	MPM416WRK	1	2	5	10	20mH ₂ 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 > 10mH ₂ O		
	±10mmH ₂ O (typ.)			±20mmH ₂ O (max.)			pressure range ≤ 10mH ₂ O		
	±20mmH ₂ O (typ.)			±30mmH ₂ O (max.)			only for MPM416WRK		
Temp. drift			Zero drift, ± %FS/°C				Sensitivity drift, ± %FS/°C		
	Rang > 10mH ₂ O		0.005 (typ.)		0.01 (max.)		0.02 (max.)		
	Range ≤ 10mH ₂ O		0.01 (typ.)		0.02 (max.)		0.02 (max.)		
	Range ≤ 5mH ₂ O		0.015 (typ.)		0.03 (max.)		0.02 (max.)		
	Range ≤ 2mH ₂ O		0.025 (typ.)		0.05 (max.)		0.02 (max.)		
Transmitting	2-wire				3-wire			3-wire	
Power supply	15~28VDC (Intrinsic safe version is supplied through safe barrier)								
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.	-30°C~80°C		-10°C~70°C (MPM416W)			-10°C~60°C (本案型)			
Storage temp.	-40°C~120°C		-20°C~85°C (MPM416W)						
Protection	IP68 (sensor part), IP65 (wiring part)								
Ex-proof class	Exia II CT6								

Load Characteristic



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

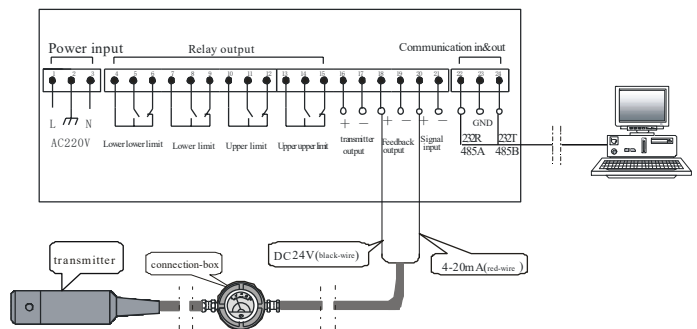
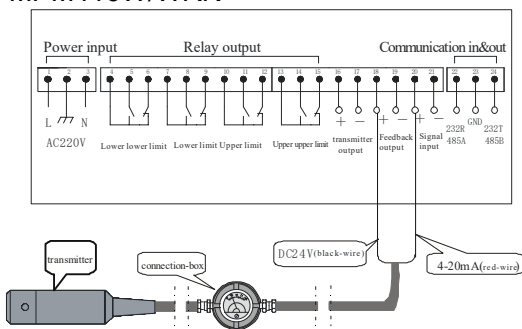
$$R_L \leq \frac{U_n - 15V}{20mA} \times 10^3 (\Omega)$$

Outline Construction and Electric Connection

Unit: mm	Outline dimension	Outline and Installation Dimension of Electric Housing	Terminal connection in Electric Housing																				
MPM416W																							
MPM416W K			<table border="1"> <thead> <tr> <th colspan="2">电流型</th> <th colspan="2">电压型</th> </tr> <tr> <th>端子</th> <th>定义</th> <th>端子</th> <th>定义</th> </tr> </thead> <tbody> <tr> <td>+/A</td> <td>V+</td> <td>+/A</td> <td>V+</td> </tr> <tr> <td>-/B</td> <td>IO</td> <td>-/B</td> <td>OUT</td> </tr> <tr> <td></td> <td></td> <td></td> <td>GND</td> </tr> </tbody> </table>	电流型		电压型		端子	定义	端子	定义	+/A	V+	+/A	V+	-/B	IO	-/B	OUT				GND
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MPM416W RK			<p>Transmitter output</p> <table border="1"> <thead> <tr> <th>1/2/3-wire output</th> <th>4/5-2-wire output termination</th> </tr> </thead> <tbody> <tr> <td>1--out(+)</td> <td>4--Out(+)</td> </tr> <tr> <td>2--power(+)</td> <td>5--Power(+)</td> </tr> <tr> <td>3--GND</td> <td></td> </tr> </tbody> </table>	1/2/3-wire output	4/5-2-wire output termination	1--out(+)	4--Out(+)	2--power(+)	5--Power(+)	3--GND													
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Application Example

MPM416W/WRK



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 1V~5VDC, 0V~5VDC, 4mA~20mADC.

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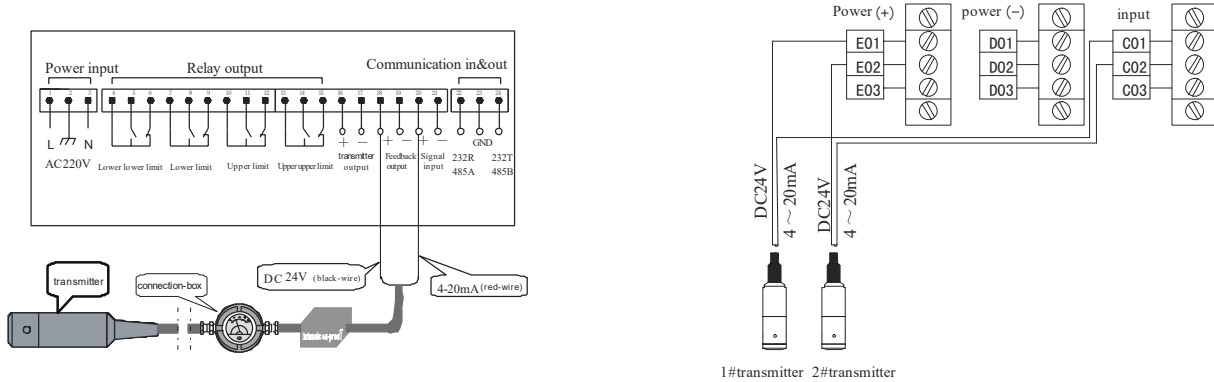
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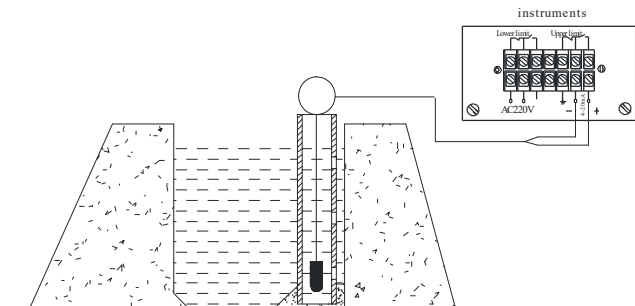
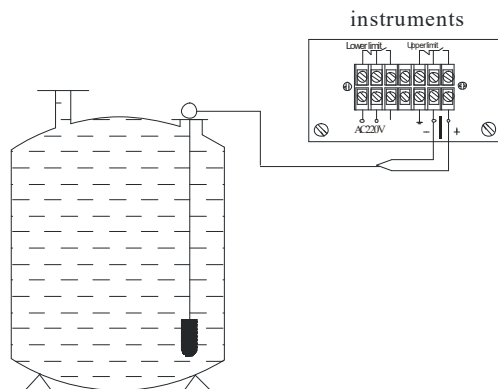
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Connecting level transmitter with measure displayer to build up one measure and control system.



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

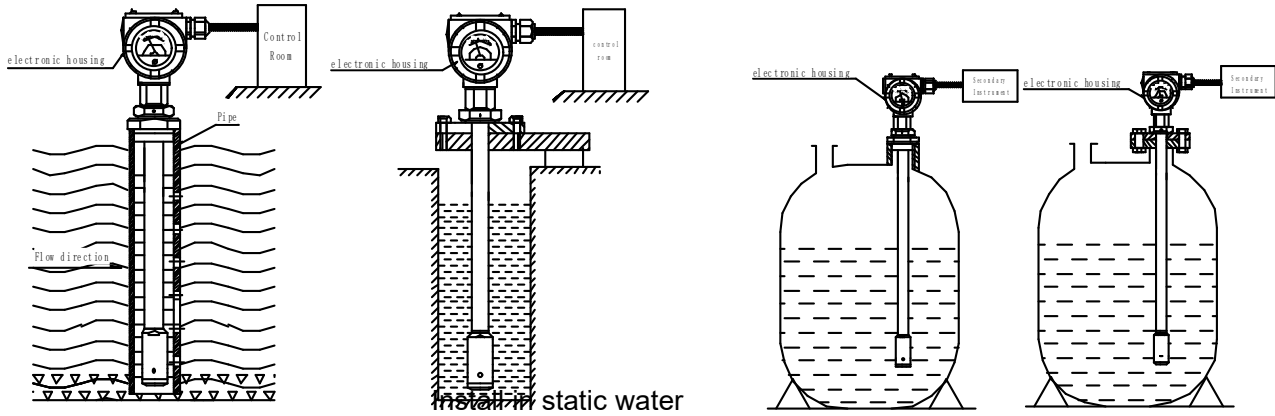
Connecting the most two level transmitter with MSB9438 measure displayer to build up one level difference system with multi-channel display. It can also output 4mA~20mADC analog output and provide upper and lower limit alarming and control.



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 and connection box at the entrance of tube.

MPM416WK



Installation at Local Place (Unit: mm)

MPM416W/WRK:

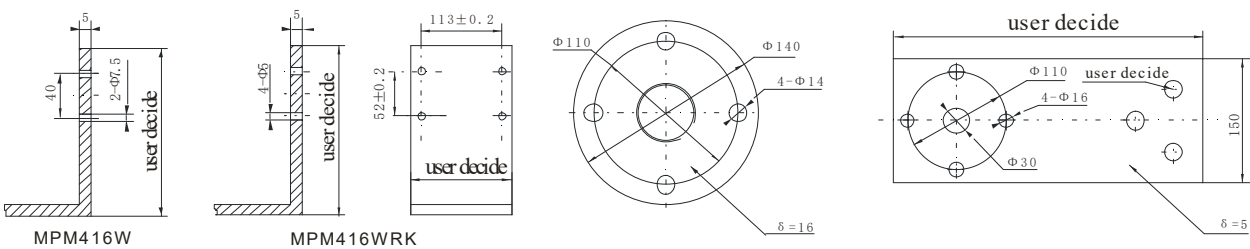
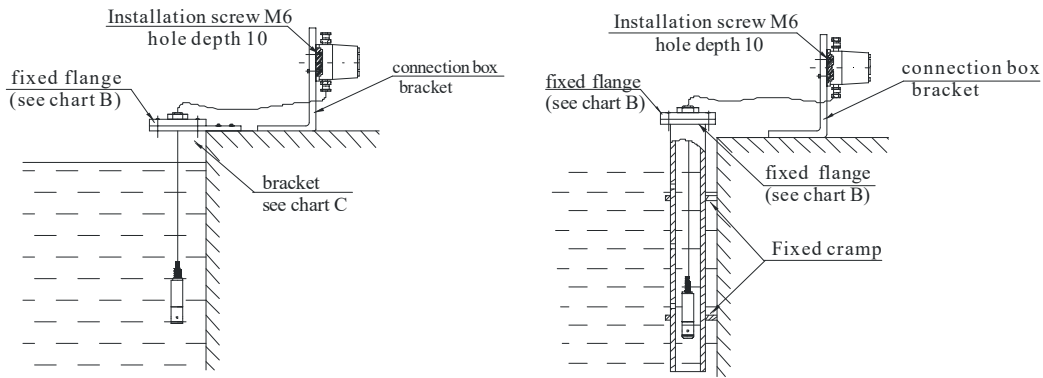
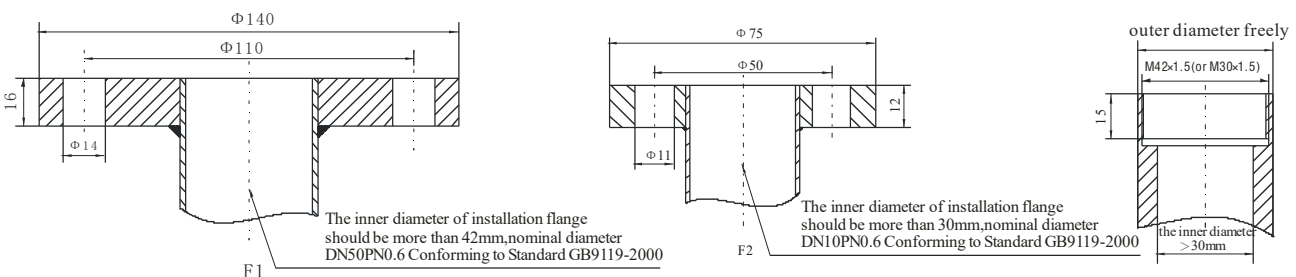


Chart A (user decide)

Chart B (enclosed by factory or user decide)

Chart C (user decide)

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



The inner diameter of installation flange should be more than 42mm, nominal diameter DN50PN0.6 Conforming to Standard GB9119-2000

The inner diameter of installation flange should be more than 30mm, nominal diameter DN10PN0.6 Conforming to Standard GB9119-2000

the inner diameter >30mm

Order Guide

MPM416W	Submersible Level Transmitter			
MPM416WK	Armoured Level Transmitter			
MPM416WRK	Flexible Armoured Level Transmitter			
Range (mH ₂ O)	[0~X mH ₂ O]L	L: cable length, suggested: L-X= (1~2) m	MPM416W	
		L: armoured tube length	MPM416WK	
		L: flexible armoured tube length	MPM416WRK K 型	
	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	SS
	25	Tantalum	SS	SS
	Code	Others		
	M ₁	0~100% hand pointer indicator (MPM416WRK has no this option)		
	i	Intrinsic safe version Exia II CT6		
	C ₁	M20×1.5 male, face type seal	MPM416W	
	C ₃	G1/2 male		
	C ₅	M20×1.5 male, waterline seal		
	T	Ship-use		
	F ₁	Fixed flange (MPM416WK has no this option)		
	1F1	Stainless steel flange 1 DN50		
	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		
			MPM416WK	

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MPM416W [0~3mH₂O]5 E 22 iC₁ the whole spec

Notes

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.