

## LT10SR-2416W/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;
- LT10SR-2416WK has stainless steel tube protection, flange installation, local display and calibration;
- LT10SR-2416WRK 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



LT10SR-2416W Submersible Level Transmitter



LT10SR-2416WK Submersible Level Transmitter

### Introduction

LT10SR-2416W/LT10SR-2416WK/LT10SR-2416WRK 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.

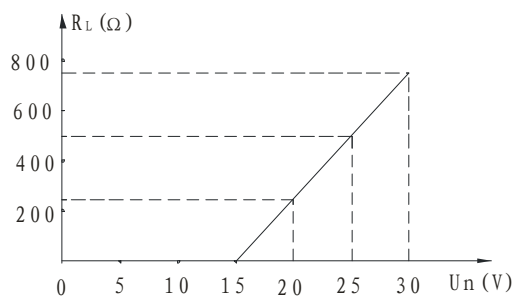


LT10SR-2416WRK Flexible Armoured Level Transmitter

## Specifications

|                                |  |   |                      |                              |                    |                     |                                      |             |                      |
|--------------------------------|--|---|----------------------|------------------------------|--------------------|---------------------|--------------------------------------|-------------|----------------------|
| Pressure range                 | LT10SR-2416W   | 1   | 2                    | 5                            | 10                 | 20                  | 50                                   | 100         | 200mH <sub>2</sub> O |
|                                | LT10SR-2416WK  | 1   | 2                    | 3                            | 4mH <sub>2</sub> O |                     |                                      |             |                      |
|                                | LT10SR-2416WRK   | 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 > 10mH <sub>2</sub> O |             |                      |
|                                | ±10mmH <sub>2</sub> O (typ.)                                       |   |                      | ±20mmH <sub>2</sub> O (max.) |                    |                     | pressure range ≤ 10mH <sub>2</sub> O |             |                      |
|                                | ±20mmH <sub>2</sub> O (typ.)                                       |   |                      | ±30mmH <sub>2</sub> O (max.) |                    |                     | only for MPM416WRK                   |             |                      |
| Temp. drift                    |  |   | Zero drift, ± %FS/°C |                              |                    |                     | Sensitivity drift, ± %FS/°C          |             |                      |
|                                | 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                   | 15~28VDC (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 | LT10SR-2416W   | Housing: stainless steel 1Cr18Ni9Ti                   |                      |                              |                    | O-ring: Viton       |                                      |             |                      |
|                                |  | Diaphragm: stainless steel 316L                       |                      |                              |                    | Rubber casing: NBR  |                                      |             |                      |
|                                |  | Cable: Φ7.2mm PVC/Polyurethane cable with vented tube |                      |                              |                    |                     |                                      |             |                      |
|                                | LT10SR-2416WK  | Stainless steel 1Cr18Ni9Ti, red copper, Viton O-ring  |                      |                              |                    |                     |                                      |             |                      |
| LT10SR-2416WRK                 | 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

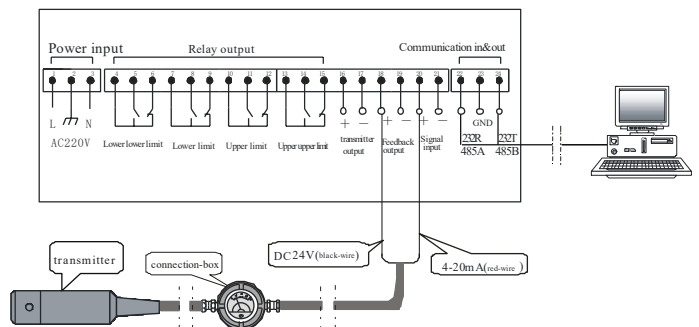
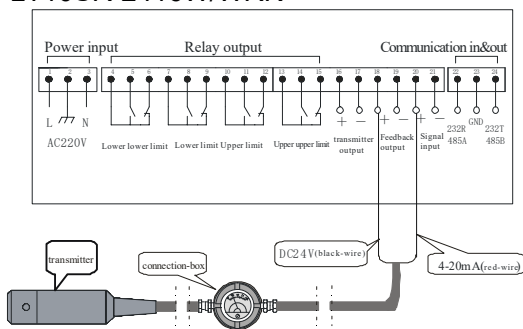
$$R_L \leq \frac{U_n - 15V}{20mA} \times 10^3 (\Omega)$$

### Outline Construction and Electric Connection

| Unit: mm          | Outline dimension           | Outline and Installation Dimension of Electric Housing | Terminal connection in Electric Housing  |                   |                             |           |           |             |             |        |    |     |    |     |    |     |    |     |     |  |  |  |     |
|-------------------|-----------------------------|--|--|-------------------|-----------------------------|-----------|-----------|-------------|-------------|--------|----|-----|----|-----|----|-----|----|-----|-----|--|--|--|-----|
| LT10SR-2416W      |                             |  |  |                   |                             |           |           |             |             |        |    |     |    |     |    |     |    |     |     |  |  |  |     |
| LT10SR-2416WK     |                             |  | <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 |
| 电流型               |                             | 电压型  |  |                   |                             |           |           |             |             |        |    |     |    |     |    |     |    |     |     |  |  |  |     |
| 端子                | 定义                          | 端子   | 定义   |                   |                             |           |           |             |             |        |    |     |    |     |    |     |    |     |     |  |  |  |     |
| +/A               | V+                          | +/A  | V+   |                   |                             |           |           |             |             |        |    |     |    |     |    |     |    |     |     |  |  |  |     |
| -/B               | IO                          | -/B  | OUT  |                   |                             |           |           |             |             |        |    |     |    |     |    |     |    |     |     |  |  |  |     |
|                   |                             |  | GND  |                   |                             |           |           |             |             |        |    |     |    |     |    |     |    |     |     |  |  |  |     |
| LT10SR-2416WRK    |                             |  | <p>Transmitter output</p> <table border="1"> <thead> <tr> <th>1/2/3-wire output</th> <th>4/5-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-wire output termination | 1--out(+) | 4--Out(+) | 2--power(+) | 5--Power(+) | 3--GND |    |     |    |     |    |     |    |     |     |  |  |  |     |
| 1/2/3-wire output | 4/5-wire output termination |  |  |                   |                             |           |           |             |             |        |    |     |    |     |    |     |    |     |     |  |  |  |     |
| 1--out(+)         | 4--Out(+)                   |  |  |                   |                             |           |           |             |             |        |    |     |    |     |    |     |    |     |     |  |  |  |     |
| 2--power(+)       | 5--Power(+)                 |  |  |                   |                             |           |           |             |             |        |    |     |    |     |    |     |    |     |     |  |  |  |     |
| 3--GND            |                             |  |  |                   |                             |           |           |             |             |        |    |     |    |     |    |     |    |     |     |  |  |  |     |

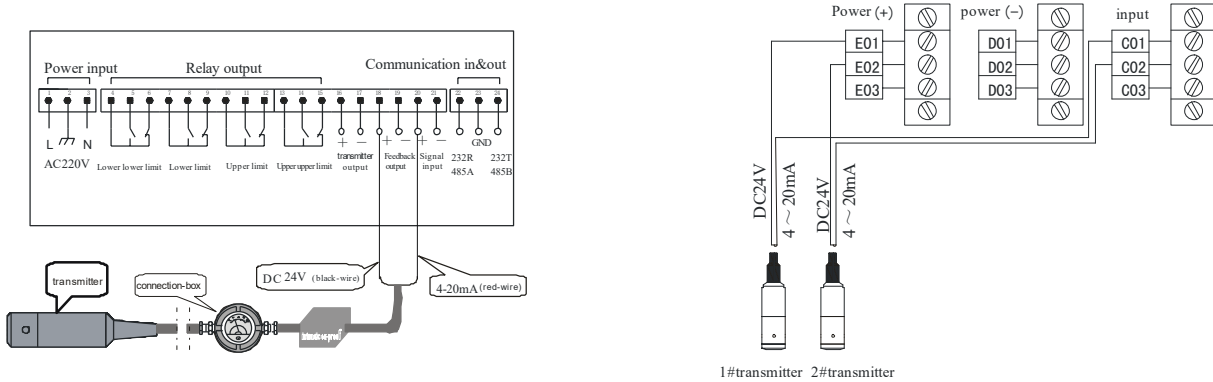
### Application Example

#### LT10SR-2416W/WRK



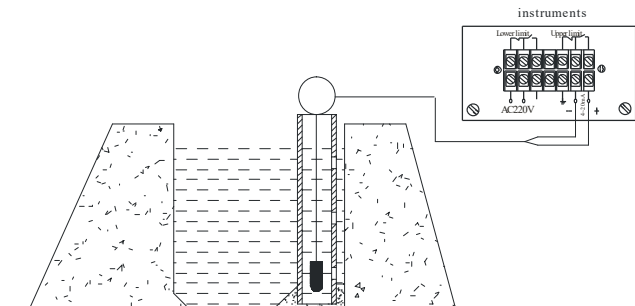
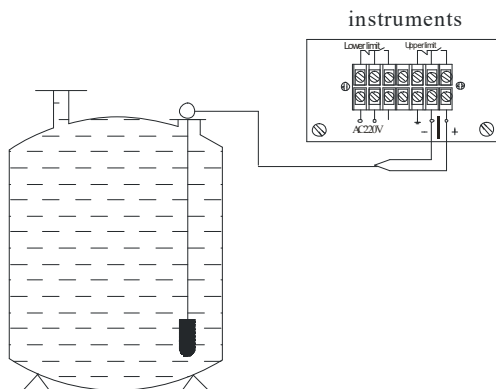
Connecting with MSB9418 measure displayer to build up one liquid measure and control system with upper and lower limits alarming. Meanwhile, the displayer could output RS232 or analog signal 1V~5VDC, 0V~5VDC, 4mA~20mADC.

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;

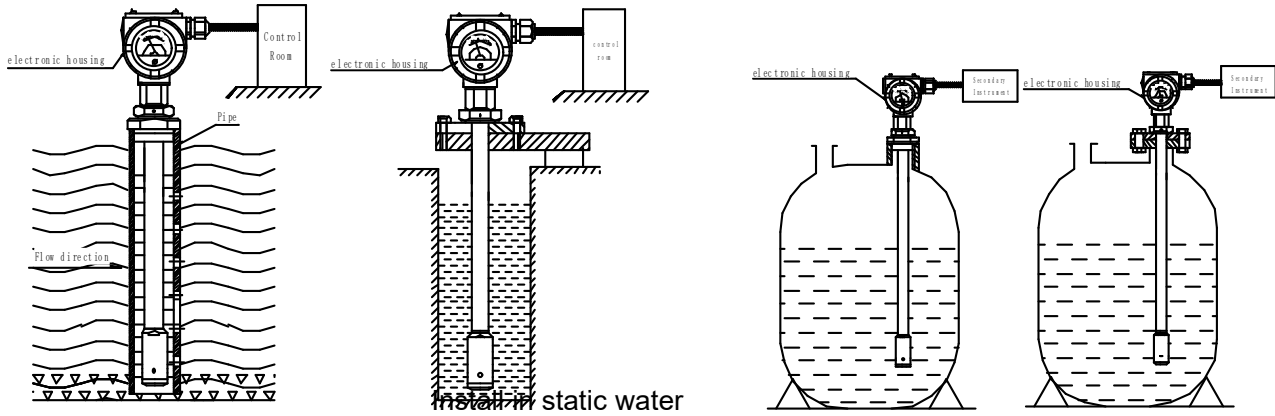
Connecting the most two level transmitter with MSB9438 measure displayer to build up one level difference system with multi-channel display. It can also output 4mA~20mADC analog output and provide upper and lower limit alarming and control.



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.

LT10SR-2416WK



Installation at Local Place (Unit: mm)

LT10SR-2416W/WRK:

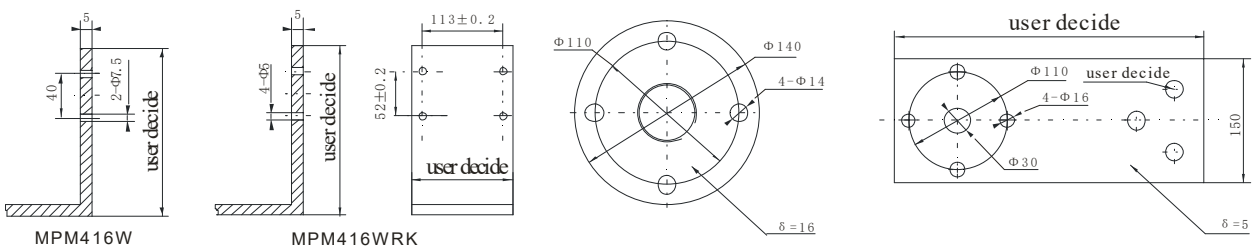
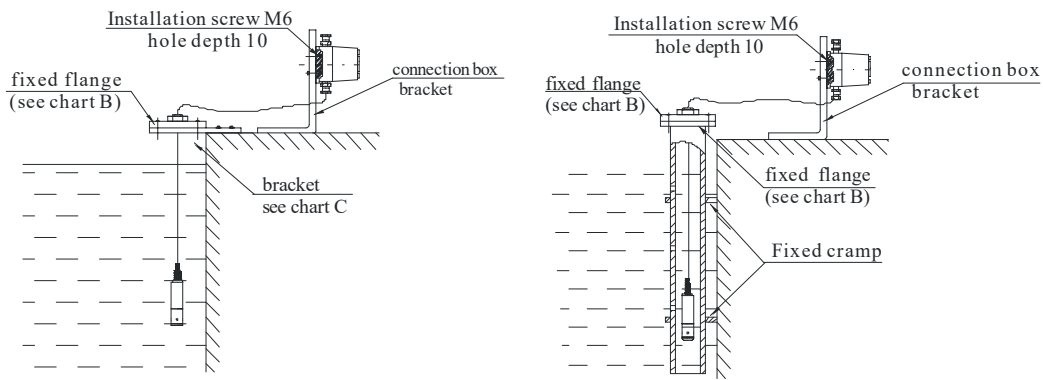
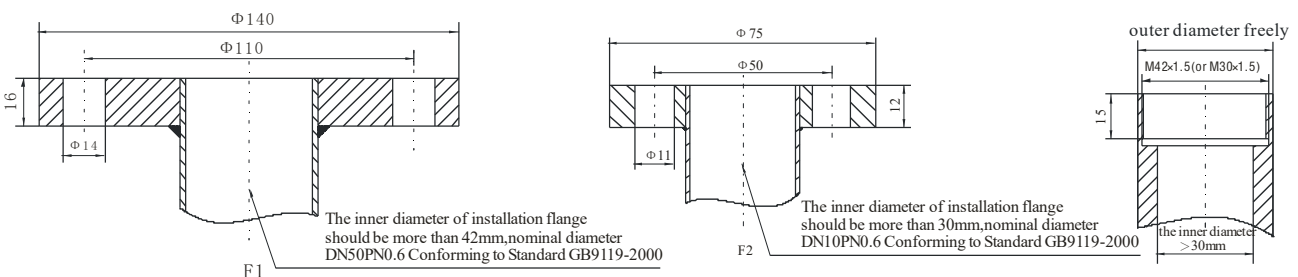


Chart A (user decide)

Chart B (enclosed by factory or user decide)

Chart C (user decide)

LT10SR-2416WK (The user needs to prepare flange and thread at local installation place)



## Order Guide

|                              |  |  |                      |
|------------------------------|--|--|----------------------|
| LT10SR-2416W                 | Submersible Level Transmitter                                |  |                      |
| LT10SR-2416W                 | Armoured Level Transmitter                                   |  |                      |
| LT10SR-2416W                 | Flexible Armoured Level Transmitter                          |  |                      |
| Range<br>(mH <sub>2</sub> O) | [0~X<br>mH <sub>2</sub> O]L                                  | L: cable length, suggested: L-X= (1~2) m | LT10SR-2416W         |
|                              |  | L: armoured tube length                  | LT10SR-2416WK        |
|                              |  | L: flexible armoured tube length         | LT10SR-2416WR<br>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 <sub>1</sub>               | 0~100% hand pointer indicator (MPM416WRK has no this option) |  |                      |
| i                            | Intrinsic safe version Exia II 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                                 |                      |
| 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                       |  |                      |

|              |                         |   |    |                 |                |
|--------------|-------------------------|---|----|-----------------|----------------|
| LT10SR-2416W | [0~3mH <sub>2</sub> O]5 | E | 22 | iC <sub>1</sub> | 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.