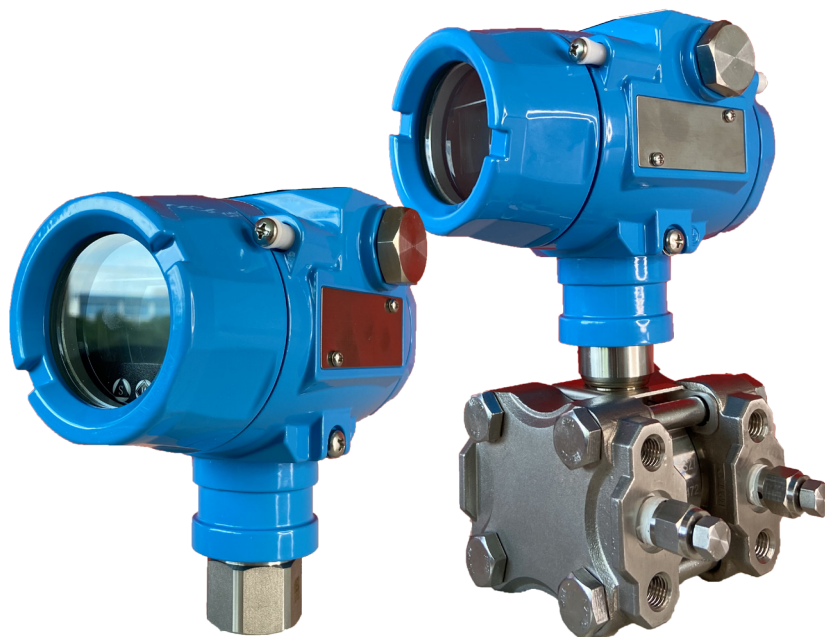




Excellence Since 1953



WinSMART™ LY16 and LY36 Series
Installation and Maintenance Manual

WinSMART™ LY16 and LY36 Series Installation and Maintenance Manual

Safety Precautions

-  Pressure/differential pressure transmitter should be installed by professional engineers or qualified technical personnel. Product specifications and important information should be carefully read before installation and operation.
-  Pressure/differential pressure transmitter is powered by an external power supply, the power supply circuit should comply with local standards.
-  The maximum static pressure overload is stated on the product nameplate. The process maximum pressure should not be exceeded.
-  When using pressure/differential pressure transmitter in hazardous areas, installation and maintenance should comply with national standards.
-  Attention! Disassemble the instruments under the condition of normal atmospheric pressure only.

PRODUCT USAGE

Pipeline pressure measurement - pressure transmitter



For high-temperature steam measuring, more than half a tube of cooling water should be added in the syphon. After the steam pipes are stable, slowly open the shut-off valve to start measuring.

Pipeline pressure measurement - differential pressure transmitter



For high-temperature steam measuring, cooling water should be added into the guided pipe. After the steam pipes are stable, slowly open the shut-off valve to start measuring.

Differential pressure measurement



Differential pressure transmitter is used for differential pressure measuring, especially suitable for low-pressure measurement of hydrostatic pressure such as filter and equipment leakage tests.

Steam flow measurement



Guiding pressure tube uptilt 45°, the installation location should be lower than the process pipeline. Isolation tank and multiple shut-off valves should be added into the guiding pressure tube. Open the drain/vent valve periodically and clear the residual gas and liquid in the guiding pressure tube to ensure accuracy.

Liquid flow measurement



Guiding pressure tube tilt down 45°, the installation location should be lower than the process pipeline. Isolation tank and multiple shut-off valves should be included. Open the drain/vent valve periodically, clear the residual gas and liquid in the guiding pressure tube to ensure accuracy.

Air flow measurement



Guiding pressure tube uptilt 45°, the installation location should be lower than the process pipeline. Isolation tank and multiple shut-off valves should be included. Open the drain/vent valve periodically, clear the residual gas and liquid in the guiding pressure tube to ensure accuracy.

Sealed container level measurement



For sealed container level measurement, isolation tank and multiple shut-off valves should be included. Open the drain/vent valve periodically, clear the residual gas and liquid in the guiding pressure tube to ensure accuracy.

Open container level measurement - single flange level transmitter



For open container level measurement, media compatibility should be considered. Install in location where the liquid level and temperature changes are stable to improve accuracy.

Sealed container level measurement - single flange level transmitter



Single flange diaphragm system used for sealed container level measurement. Isolation tank and multiple shut-off valves should be included. Open the drain/vent valve periodically, clear the residual gas and liquid in the guiding pressure tube to ensure accuracy.

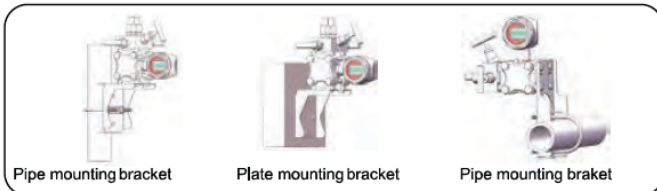
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INSTALL PRESSURE TRANSMITTER

Pressure transmitter - installation



Differential pressure transmitter - bracket installation



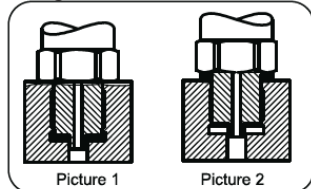
PROCESS CONNECTION

Taper thread connection



Sealing with teflon tape or sealant glue. When thread lock is hard, there is a small part space.

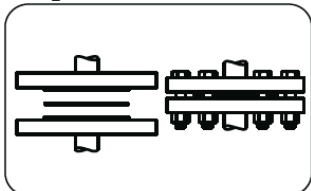
Straight thread connection



Picture 1: The length of pressure transmitter thread should be longer than the depth of the thread to ensure the seal of the head face gasket is effective.

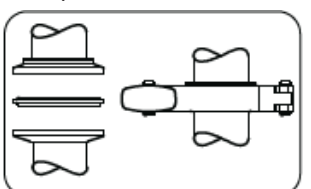
Picture 2: The length of pressure transmitter thread should be shorter than the depth of the thread to ensure the seal of root gasket is effective.

Flange connection



Choose gasket according to medium features and temperature range. Pay attention to the bolt pattern.

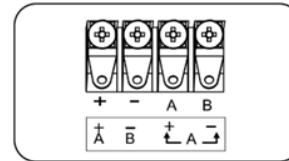
Clamp connection



Choose gaskets which meet the health standards, to avoid excessive locking clamp and squeeze gasket and diaphragm.

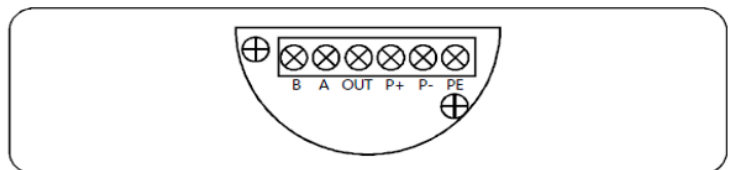
ELECTRICAL CONNECTION

Module terminals - four terminals



Label	Two Wires	Three Wires	Four Wires
+	Power+	Power+	Power+
-	Power-	Power-	Power-
A		Signal+	Signal+
B			Signal-

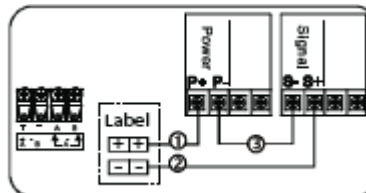
Module terminals-six terminals
(Only for Modbus-RTU/RS485)



Label	P+	P-	A	B	Out	PE
Modbus-RTU/RS485	Power+	Power-	A+	B-		Housing
Five wires	Power+	Power-	A+	B-	Signal+	Housing ground

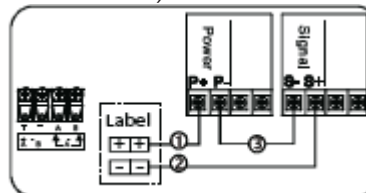
PROCESS CONNECTION

4-20 mA two wires (module terminals - four terminals)



- 1.) Power supply is connected with transmitter terminals
- 2.) Signal is connected with transmitter terminals
- 3.) Signal is connected power supply

4-20 mA two wires, intrinsic safety (module terminals - four terminals)



- 1.) Power supply is connected with transmitter terminals
- 2.) Signal is connected with transmitter terminals
- 3.) Signal is connected with power supply

! Please note that the wiring should refer to the installation information provided by the safety barrier manufacturer

POWER SUPPLY

Independent linear direct current power supply is suggested to be adopted for the power supply of pressure transmitter, over large resistive load will result in a large pressure drop, so it requires to calculate the all-in resistance of signal cable, display meter and other record and display equipment, to ensure the voltage provided to the pressure transmitter is in accordance with normal operating requirements.

- 4/20 mA, 2-wire / V = 10.5-55 Vdc
- 4/20 mA + HART 5, 2-wire / V = 16.5-55 Vdc or 12.55-55 Vdc (low power)
- 1/5 Vdc, 3-wire / V = 10.5-55 Vdc
- Modbus, 4-wire / V = 9-30 Vdc

GROUNDING

- Use shielded cable with twisted-pair wiring for the best effect
- Transient resistance built-in module is effective only in the case of good grounding. Metal housing and internal grounding terminals are used for grounding

CABLE PROTECTION SYSTEM

Standard protection system



In order to avoid the liquid flowing along the cable to flow into the terminal box or result in waterproof joint effusion, an U-shaped installation needs to be configured between pull box and pressure transmitter as the picture shows, and please ensure the U-shaped bottom is under the pressure transmitter. Enough cable length needs to be considered for maintenance or replacement.

Explosion-proof tube protection system



⚠ Using explosion-proof pressure transmitters in dangerous situations, metal explosion-proof tubing should be used to connect the cable into the threading box, and lead to safe zone.

INTRINSICALLY SAFETY TYPE

⚠ When choosing intrinsic safety pressure transmitter, as the power, signal connection, grounding and transient solutions are provided by the intrinsic safety and isolated safety barrier suppliers. Pay attention to the connection signal line.

FIELD ADJUSTMENT



For detailed operation of LCD display, please refer to instructions of display, HART® protocol and so on

ZERO POINT ADJUSTMENT

- Please make an adjustment after installation because the mounting position will affect zero setting
- The system is absolutely empty (no pressure or media in the measuring diaphragm or in the process connection)
- Power connection please refer to “keys operation manual-keyboard shortcuts-PV=0”
- Please set PV=0 after three weeks of installation to ensure the best accuracy
- Set PV=0 each year

⚠ Zero point adjustment is only available for gauge pressure transmitter

FULL SPAN ADJUSTMENT

- Fill the vessel with media (to required level)
- The static pressure value should be within the minimum and maximum pressure range
- Power connection please refer to “keys operation manual-keyboard shortcuts-full span” document

FACTORY RESETS

- Please refer to the LCD instruction manual

MAINTENANCE

- Requires no maintenance

TRANSPORTATION/STORAGE

- Do not store outside
- Keep dry and dust-free
- Do not expose to corrosive medium
- Avoid solar radiation
- Avoid mechanical shock and vibration
- Storage temperature -40-85°C (-40-185°F)
- Maximum relative humidity: 95%

EMC STATEMENT

- EMC equipment instructions 2014/30/EU
- CE mark suggests the instruments are in line with EU standards
- Users need to ensure the whole equipment conforms to all applicable local standards

RETRANSPORT

- Keep the pressure transmitter away from any dangerous media
- Ensure proper packaging to avoid damage during transportation

POWER SUPPLY

Item	Operating conditions
Standard/flame proof	10.5-55VDC
HART protocol	16.5-55VDC, Communication load resistance 250Ω
Load resistance	0-2119 Ω for working condition, 250-600Ω for HART protocol
Transmission distance	<1000m
Power consumption	≤500mW@24VDC, 20.8mA

TROUBLESHOOTING

When device malfunction is suspected despite the absence of any diagnostic messages, inspect the following:

- If measurement signal appears irregular, check whether the process pressure is within the working range, or the abnormality lies in the measuring system, installation environment or pressure transmitter. Once diagnosed take corresponding measures
- If no signal output or unchanged output signal on corresponding process pressure changes is observed, then check the power supply polarity, open or short circuit. Check the parameters like voltage, power and load resistance meet the normal working requirements. Also, ensure there is no leakage or line blockage
- If the output signal is large or outside the normal range, check whether the supply voltage, power consumption, and load resistance meet the normal working requirements of pressure transmitters. Verify measuring range settings and adjust the device calibration. Also, ensure there is no leakage, line blockage

REPAIR

- Complete the following steps before sending the unit for repair, remove all residues which would be harmful to human health. Such as flammable, poisonous carcinogenic and radioactive substances



Do not return the instrument if you cannot ensure the dangerous residue is removed. Dangerous residue can permeate into cracks or spread into the plastic

DISCARD/DISPOSAL

- The instrument does not comply with the WEEE 2002/96/EG
- Please pass the instrument to specialized recycling companies