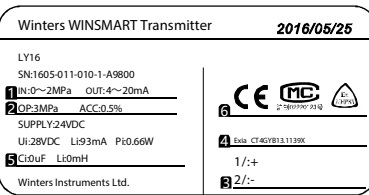


LXP Explosion Proof Transmitter Installation and Maintenance Instructions

Safety Precautions

- ⚠ Pressure sensor/ transmitter shall be installed by professional engineers, technicians and other qualified personnel, please read carefully the content and important information provided by this installation guide and label before installation.
- ⚠ Pressure sensor / transmitter is powered by an external power supply, the power supply should be in accordance with relevant standards stipulated by the energy limitation circuit, and pay attention to the high-voltage that may exist in the circuit.
- ⚠ The static pressure overload has been marked on the label, the maximum pressure value should be no more than the span of the sensor.
- ⚠ Using pressure sensor/transmitter in dangerous situations, product installation, using and maintenance should comply with this installation guide and relevant provisions of national standards.
- ⚠ Attention please! Disassemble the instrument under the condition of normal atmospheric pressure only.

Label



i Important information

- 1 Static pressure overload
- 2 Power supply
- 3 Signal outline type
- 4 Explosion proof mark
- 5 Intrinsic safety equipment parameters
- 6 Certificate

⚠ Please note! Exceeding static pressure overload will cause damage to the instruments, even lead to burst and casualties.

Product Usage

Pipe pressure management



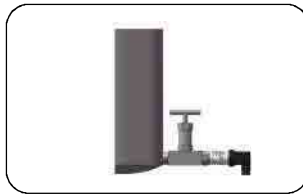
For high-temperature steam measuring, more than half-tube cooling water should be pre-injected in the condenser. After the steam pipes are stable, slowly open the shut-off valve to start measuring.

Tank pressure measurement



Can be used for gauge and absolute pressure measurement. After the pressure vessel is stable, slowly open the shut-off valve to start measuring.

Tank level measurement



Can be used for liquid level measurement in open container and mounted on a level position. It will help to improve the measurement accuracy. Media compatibility should be considered.

Differential pressure measurement system



Two pressure transmitters can be composed of DP measurement systems, commonly used in filter control or closed container level measurement.

Install pressure transmitter

Direct installation

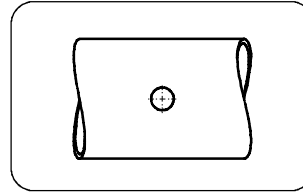


Light-weight pressure transmitter can be mounted directly on the pressure tube. Bracket is not needed. When using a wrench to screw hexagon bolt, the maximum torque force can not exceed 50Nm.

- ⚠ Do not install the instruments in a medium flow area or the position of pressure impact.
- Install the instruments in the downstream of the globe valve, easier for calibration and function test.
- The installation position of pressure transmitter may lead to measuring deviation. For example: the measured value does not show zero under the condition of normal atmospheric pressure. Please revise zero shift and refer to the chapter of "Zero point adjustment".

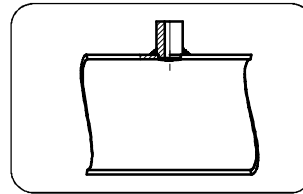
Process connection

Tapping



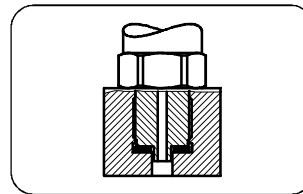
The tapping location is selected according to measuring media, situated at the top for gas, on the side or bottom for liquid and steam.

Base welding



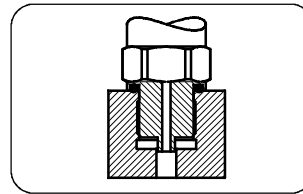
⚠ Avoid base welding with pressure transmitter and avoid base deformation caused by welding. And please pay attention to clean up waste residue to avoid scratching the measuring diaphragm.

Straight thread end seal



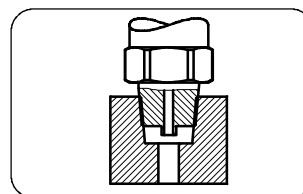
The thread length must be more than the base thread depth, to ensure the gasket seal is effective.

Straight thread root seal



The thread length must be less than the base thread depth, to ensure the gasket seal is effective.

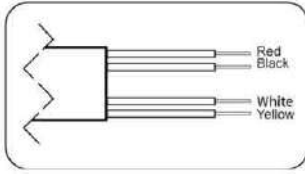
Taper thread seal



When using sealant material, or sealant sealing, when thread lock is tight, ensure there is a small part of space.

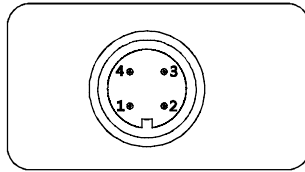
Electrical connection

Cable outlet



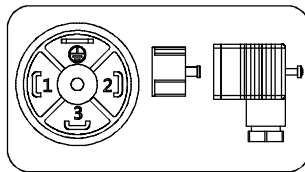
Label	4-20mA	4-20mA +HART	0.5-4.5 VDC	Modbus-RTU/RS485
Red	Power+	Power+	Power+	Power+
Black	Power-	Power-	Power-	Power-
White	Key-Z	Key-Z	Key-Z	A+
Yellow	-	-	Signal+	B-

Cable outlet



Label	Two wires	Three wires	Four wires	Modbus-RTU/RS485
1	Power +	Power +	Power +	Power +
2			Signal -	B-
3	Key-z	Signal +	Signal +	A+
4	Power-	Power-	Power-	Power-

DIN43650

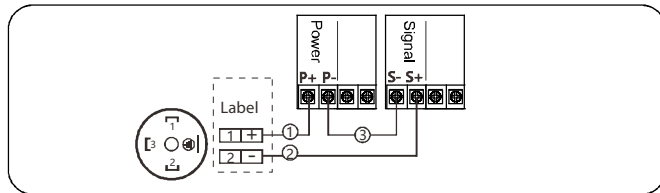


Label	Two wires	Three wires	Four wires	Modbus-RTU/RS485
1	Power +	Power +	Power +	Power +
2	Power-	Power-	Power-	Power-
3	Key-z	Signal +	Signal +	A+
4			Signal -	B-

⚠ The reference pressure is the current atmospheric pressure for gauge pressure transmitter. Please be careful to avoid the filter dropping off and keep it dry.

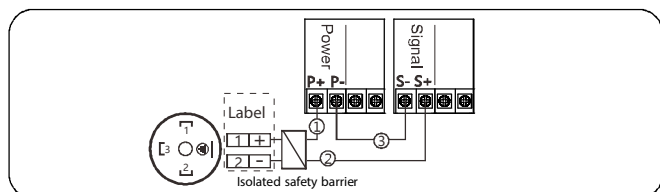
Signal connection

4-20mA two wire (DIN43650)



- 1 Connect the positive power supply (P+) to the terminals 1 of pressure transmitter;
- 2 Connect the positive signal module (S+) to the terminals 2 of pressure transmitter;
- 3 Connect the negative signal module (S-) to the negative power supply (P-).

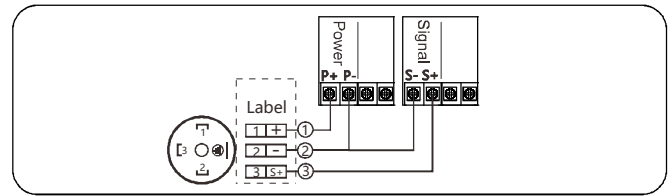
Intrinsic safety 4-20mA (DIN43650)



- 1 Connect the positive power supply (P+) to the terminals 1 of pressure transmitter;
- 2 Connect the positive signal module (S+) to the terminals 2 of pressure transmitter;
- 3 Connect the negative signal module (S-) to the negative power supply (P-).

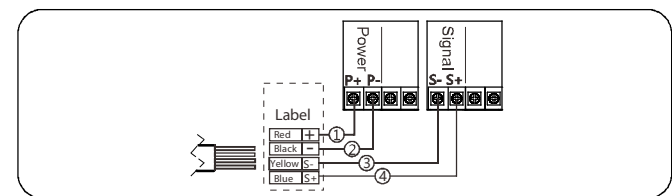
⚠ Please note! The signal connection of intrinsic safety instruments needs to refer to isolated safety barrier factory instructions.

Three wire current/voltage signal(DIN43650)



- 1 Connect the positive power supply (P+) to the terminals 1 of pressure transmitter;
- 2 Connect the negative power supply (P-) to the terminals 2 of pressure transmitter, and then connect the negative signal module (S-) to the negative power supply (P-);
- 3 Connect the positive signal module (S+) to the terminals 3 of pressure transmitter;

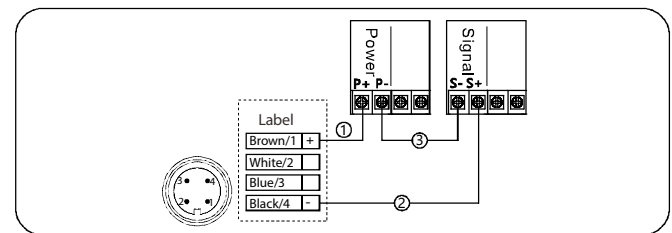
Four wire current/voltage/digital signal (Cable)



- 1 Connect the positive power supply (P+) to red wire of pressure transmitter;
- 2 Connect the negative power supply (P-) to black wire of pressure transmitter;
- 3 Connect the positive signal module (S+) to blue wire of pressure transmitter;
- 4 Connect the negative signal module (S-) to yellow wire of pressure transmitter;

⚠ For Modbus-RTU/RS485 output signal, positive and negative power supply is same. Connect A+ and transmitter blue electronic wire, connect B- and transmitter yellow electronic wire.

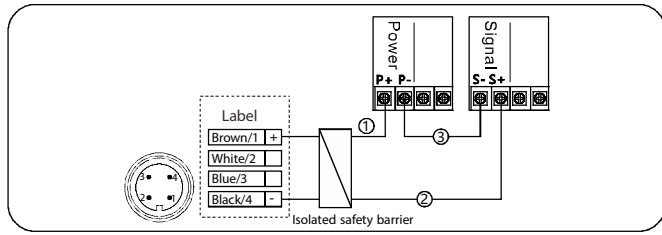
Two wires 4-20mA (Aviation plug with cable)



- 1 Connect the positive power supply (P+) to the terminal 1/brown wire of pressure transmitter;
- 2 Connect the positive power supply (P+) to the terminal 4/black wire of pressure transmitter;
- 3 Connect the negative signal module (S-) to the negative power supply (P-)

- 3 Connect the negative signal module (S-) to the negative power supply (P-)

Intrinsic safety 4-20mA (Aviation plug with cable)



- ① Connect the positive power supply (P+) to the terminal 1/brown wire of pressure transmitter;
- ② Connect the positive power supply (P+) to the terminal 4/black wire of pressure transmitter;
- ③ Connect the negative signal module (S-) to the negative power supply (P-)

⚠ The signal connection of intrinsic safety instruments needs to refer to isolated safety barrier factory instructions.

Power supply

Independent linear direct-current power supply is suggest 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 accord with normal operating requirements.

- Standard current signal output: 12-30VDC,
- HART current signal output: 16.5~55VDC,
- Intrinsic safety current signal output: 12~30VDC,
- Modbus-RTU/RS485 output: 5VDC/9-30VDC,
- 0.5~4.5VDC voltage output: 5VDC/6-15VDC.

Grounding

- Using cable with shielded twisted-pair signal has the best effect, to avoid ground loop, adopt shielded layer single-end grounded cable.
- Transient resistance built-in module only effect in the case of good grounding. Metal shell and internal grounding terminals are used to the nearest ground directly.

Cable protection system

Standard protection system



In order to avoid the liquid flowing along with the cable to flow into the terminal box or result in waterproof joint effusion, an U-shaped ring 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.

Flexible 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.

Intrinsic safety type

⚠ The signal connection of intrinsic safety instruments needs to refer to isolated safety barrier factory instructions.

Field adjustment

It is convenient for range adjustment with HART protocol software. For detailed operation, please refer to the instructions of display meter.

⚠ Please make adjustment with caution. Not all types of pressure transmitters have adjustment function.

Zero point adjustment

- Please make an adjustment after installation because the mounting position will affect zero setting.
- The vessel is absolutely empty (No pressure or medium on the measuring diaphragm, the vessel connect to the atmospheric air)
- Power connection. Please connect Key-z ("3"pin/blue wire) terminal/ its lead wire with power negative terminal/ its lead wire, and disconnect after 5 seconds.
- 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

Factory resets

- Restore the factory settings with Key-z terminal ("3"pin/ blue wire). Connect Key-z terminal/ its lead wire to power negative terminal/ its leadwire before power-on and disconnect after 10 seconds.

Maintenance

Requires no maintenance

External cleaning

Please notice the following when cleaning:

- Use washing agent which will not damage the instrument
- Prevent the process diaphragm from mechanical damage, eg: the mechanical damage caused by sharp objects.
- Mechanical cleaning of metal diaphragm(technical and reference) is prohibited.
- Do not point the nozzles to the diaphragm directly when doing internal cleaning by pressure washer.

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
- 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 conform to all the applicable standards.

Retransport


- Keep pressure transmitter clean. Stay away from any dangerous medium!
- Please use proper package to avoid damage in transportation.

Exception handling

- Measurement signal is abnormal resulting in the process pressure being abnormal, measuring system error or influence of installation environment or abnormality in the pressure transmitter, then analyze the reason and take corresponding measures.
- No signal output, process pressure changes but no measurement corresponding change, or change does not correspond, it may be a faulty pressure transmitter, check the power supply voltage, wiring, power consumption and load resistance whether they meet normal operating requirements. Also check if there are leaks and pressure impulse line blockages, shut-off valve not turned on, etc.
- Signal output error is too big or it exceeds the normal range, need to check the power supply voltage, power consumption and load resistance whether they meet normal operating requirements, the measuring range setting, if adjuster is correct. Also need to check if there are leaks and pressure impulse line blockage, shut-off valve not turned on, rapid temperature fluctuations, etc.

Repair

Please finish the following steps before the repair:

- Removal of all residue which would be harmful to human health, such as inflammable, poisonous, carcinogenic and radioactive substances.
-  Do not return the instruments if you can not ensure the dangerous residues are removed.

Disposal

- The instrument is not restrained of WEEE instruction 2002/96/EG and laws of relevant countries.
- Please pass the instrument to specialized recycling companies other than local recycling points.