HYDROSTATIC LEVEL TRANSMITTER TECHNICAL INFO & USER MANUAL

Hydrostatic Level Transmitter (Pressure Based Type)
TechHydro - LHTXXX Series.

APPLICATIONS:

1. LTH Series is a liquid measurement device which can be used in a variety of environments, including water agitation environments.

2. LTH Series can withstand high temperature liquid environment.

3. The Standard Flange Type, LTH Series can be used in liquid & gas pressure measurement environments (i.e., mildly corrosive environments).

4. LTH Series type is suitable for measurement of very deep water, such as measurement of reservoirs.

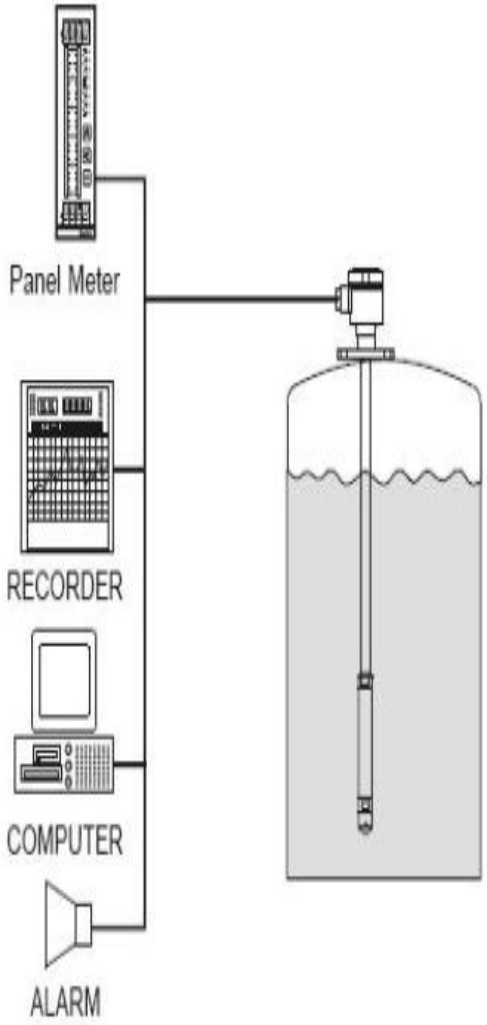
5. LTH Series is suitable for pressure measurement or control devices such as those found in hydraulic and pneumatic machines.

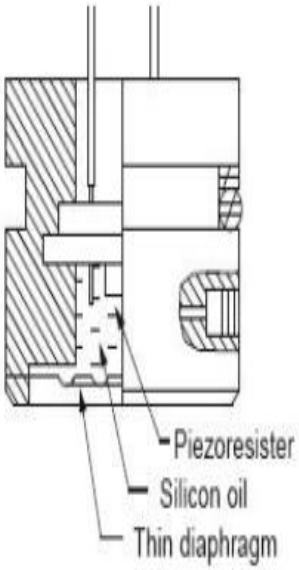
FEATURES:

1. There are various types of transducers, such as: transducer with extension cable/tube, Anti-corrosive type, flange type & pressure transducer.
2. Can be equipped with digital panel meter, recorder, PLC, signal controller.
3. The metal diaphragm is suitable in various environments such as weak acid and Alkaline liquid or sewage water treatment.
4. Our internal temperature compensation ensures long lasting reliability.
5. Available in varies flange/screw sizes.

THEORY:

A pressure sensor is made up of a piezoresistorWheatstone bridge. As shown in fig.2, the pressure is applied to the diaphragm and passes through the silicon oil onto the Wheatstone bridge. When the liquid pressure acts directly on the front face of diaphragm, the Wheatstone bridge will create a differential voltage. This voltage difference will then be amplified to obtain a current signal of 4-20mA. When this current output is connected to an analog meter, we can scale properly to read the level of the applied liquid in container or a vessel. The formula used here is: P= x H Where P is pressure, is pressure Constant and H is the level of liquid in a container.





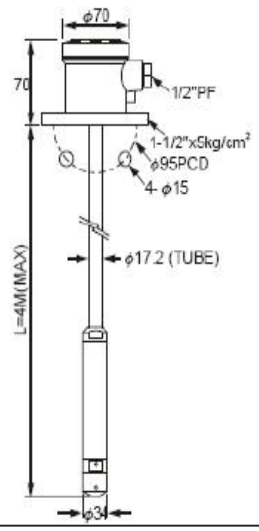
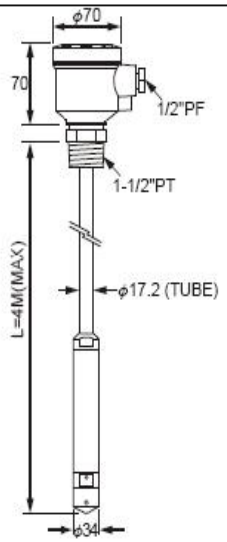
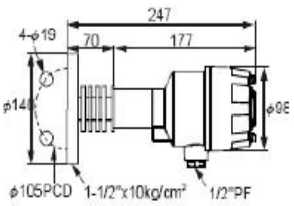
$P = \theta \times H$

P : Pressure

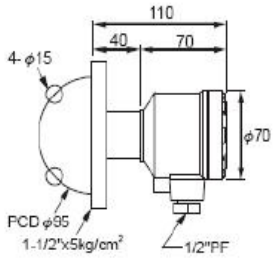
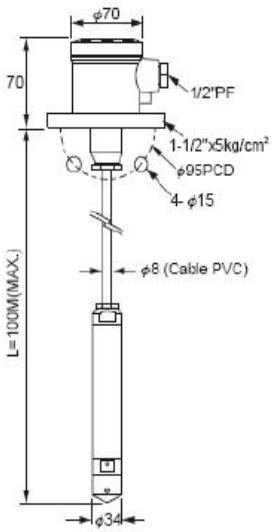
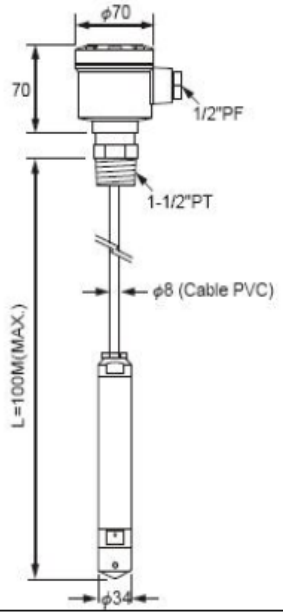
H: The level of liquid

θ : Pressure constant

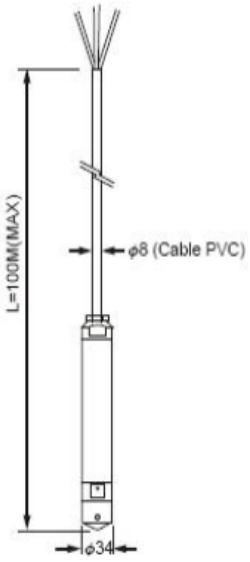
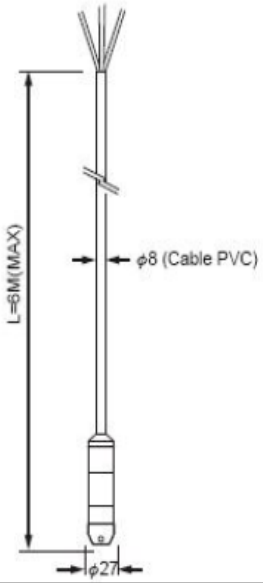
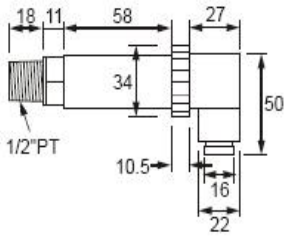
SPECIFICATIONS:

Dimensions (Unit:mm)			
Model No	LTH100(Extension Tube Flange Type)	LTH110(Extension Tube Screw Type)	LTH120(Hi-Temp.Flange Type)
Housing Material	Aluminum , IP65	Aluminum,IP65	Aluminum,IP65.
Pressure Range	0.1 , 0.2 , 0.4 bar	0.1 , 0.2 , 0.4 bar	0.1 , 0.2 , 0.5 , 1 , 2 , 5 , 10 bar
Measuring Range	0-1M , 0-2M , 0-4M (assumed with the water S.G : 1)	0-1M , 0-2M , 0-4M (assumed with the water S.G : 1)	0-1M , 0-2M , 0-4M (assumed with the water S.G : 1)
Linearity	0.3%FS.	0.3%FS.	0.3%FS.
Long Term Stability	<0.1%	<0.1%	<0.1%
Operating Temp	-10~80 C	-10~80 C	-10~150 C
Ambient Temp	60 C	60 C	60 C
Supply Voltage	13~36V DC	13~36V DC	13~36V DC
Output	4~20mA,Loop resistance should be less than 500W	4~20mA,Loop resistance should be less than 500W	4~20mA,Loop resistance should be less than 500W
Connection	1-1/2"x5kg/cm^2	1-1/2"PT	1-1/2"x10kg/cm^2
Wetted Material	SS304/316.	SS304/316.	SS304/316.
Weight	Approx.4.2kg(L=1M)	Approx.44kg(L=1M)	Approx.1.8kg(L=1M)

Special size flange and screws are available SPECIFICATIONS:

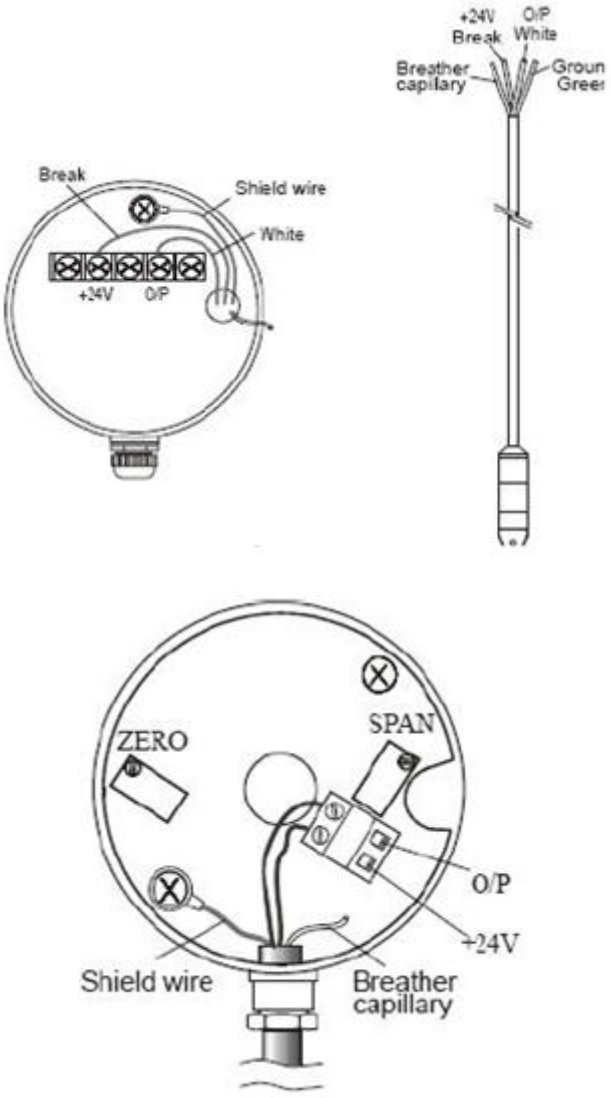
Dimensions (Unit:mm)			
Model No	LTH130(Flange Standard Type)	LTH140(Extension Cable Flange Type)	LTH150 (Extension Cable Screw Type)
Housing Material	Aluminum , IP65	Aluminum,IP65	Aluminum,IP65.
Pressure Range	0.1 , 0.2 , 0.4 bar	0.1 , 0.2 , 0.5 , 1 , 2 , 5 , 10 bar	0.1 , 0.2 , 0.4 , 1 , 2 , 5 , 10 bar
Measuring Range	0-1M , 0-2M , 0-4M (assumed with the water S.G : 1)	0-1M , 0-2M , 0-4M (assumed with the water S.G : 1)	0-1M , 0-2M , 0-4M (assumed with the water S.G : 1)
Linearity	0.3%FS.	0.3%FS.	0.3%FS.
Long Term Stability	<0.1%	<0.1%	<0.1%
Operating Temp	-10~80 C	-10~80 C	-10~150 C
Ambient Temp	60 C	60 C	60 C
Supply Voltage	13~36V DC	13~36V DC	13~36V DC
Output	4~20mA,Loop resistance should be less than 500Ù.	4~20mA,Loop resistance should be less than 500Ù.	4~20mA,Loop resistance should be less than 500Ù.
Connection	1-1/2"x5kg/cm^2	1-1/2"PT	1-1/2"x10kg/cm^2
Wetted Material	SS304/316.	SS304/316.	SS304/316.
Weight	Approx.4.2kg(L=1M)	Approx.44kg(L=1M)	Approx.1.8kg(L=1M)

SPECIFICATIONS:

Dimensions (Unit:mm)			
Model No	LTH160(Extension Cable Type)	LTH170(Extension Cable Type)	LTH180 (Pressure Transducer)
Pressure Range	0.1 , 0.2 , 0.5 , 1 , 2 , 5 , 10 bar	0.25 , 0.4 , 0.6 bar	0.1 , 0.2 , 0.4 , 1 , 2 , 5 , 10 bar
Measuring Range	0-1M , 0-2M , 0-5M , 0-10M , 0-20M , 0-50M , 0-100M (assumed with the water S.G : 1)	0-2.5M , 0-4M , 0-6M (assumed with the water S.G : 1)	
Linearity	0.3%FS.	0.3%FS.	0.3%FS.
Long Term Stability	<0.1%	<0.1%	<0.1%
Operating Temp	-10~80 C	-10~80 C	-10~80 C
Ambient Temp	60 C	60 C	60 C
Supply Voltage	13~36V DC	13~36V DC	13~36V DC
Output	4~20mA,Loop resistance should be less than 500Ù.	4~20mA,Loop resistance should be less than 500Ù.	4~20mA,Loop resistance should be less than 500Ù.
Connection			1/2" PT
Wetted Material	SS304/316.	SS304/316.	SS304/316.
Weight	Approx.0.8kg(L=1M)	Approx.0.8kg(L=1M)	Approx.250g

INTERNAL WIRING

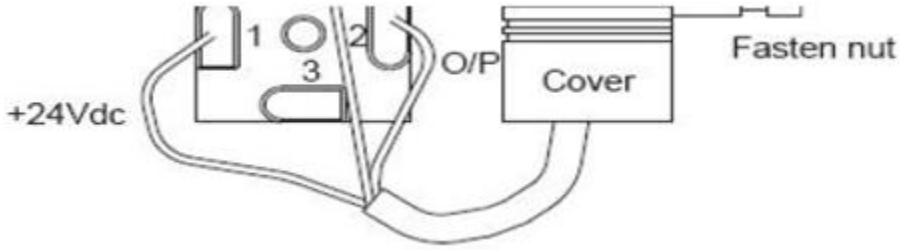
1. Make sure the power is turned off. Connect them as show in fig.3, 4 or 5 (depend on which model you purchased).
2. Make sure the outlet breather capillary is open for air to flow freely.
3. Please tighten cover and cable gland after wiring finished.



LTH120 & LTH130

LTH 180 Type:

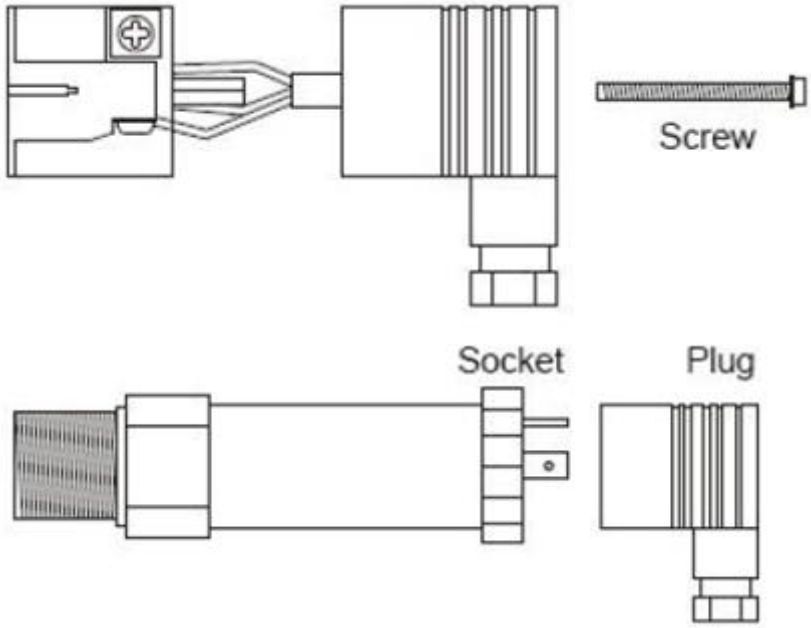
1. Remove the cover of plug and connect cable to the Terminal of Plug



Connection

2. When wiring is finished, assemble the plug with cover.

Plug **Cover**

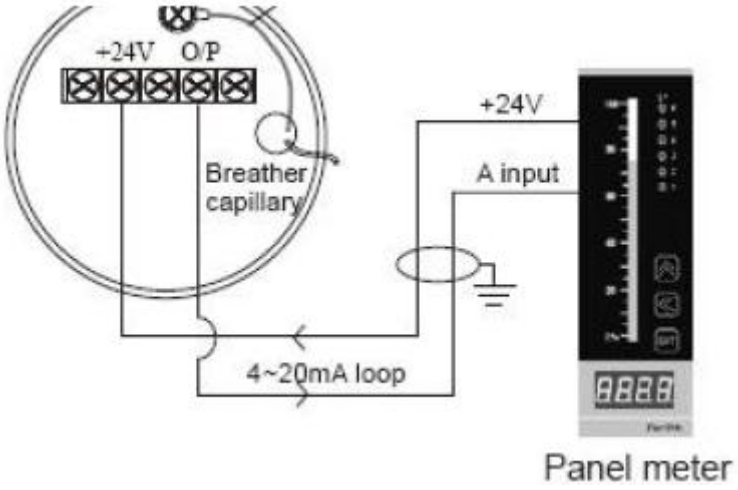


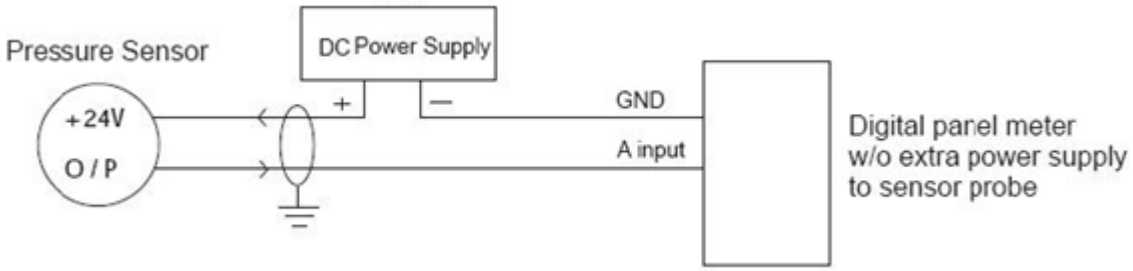
Wiring Diagram

EXTERNAL WIRING:

1. For this Panel Meter, please refer to the wiring diagram attached. As for other brands of panel meter, please refer to its respective operation manual for their wiring diagram.
2. Wiring connection should be kept away from high voltage cable,(e.g. Power Cable) to Prevent interference from high voltage.

3. Resistance in the circuit should be kept away from high voltage cable, (e.g. Power cable) to prevent interference from high voltage.
4. Wiring should be used in shielded insulated cable.
5. If the panel meter does not supply 24V DC power supply to the sensor, additional power supply





Power Supply

INSTALLATION:

1. The transducer with extension cable & types are equipped with an electrical housing standing vertically and with a screw-type of cap on top.

2. The flange type transducer is equipped with a side mounted electrical housing.

3. A special type of cable is used in the transducer with extension cable. Please note that this cable comes with 3 multi-thread copper wire and a breather capillary. Therefore, any bending of the cable is not recommended. Otherwise, the measurements will not be Accurate.

4. It is recommended that you use LTH120, when the pressure level measurement of solvent is implemented.

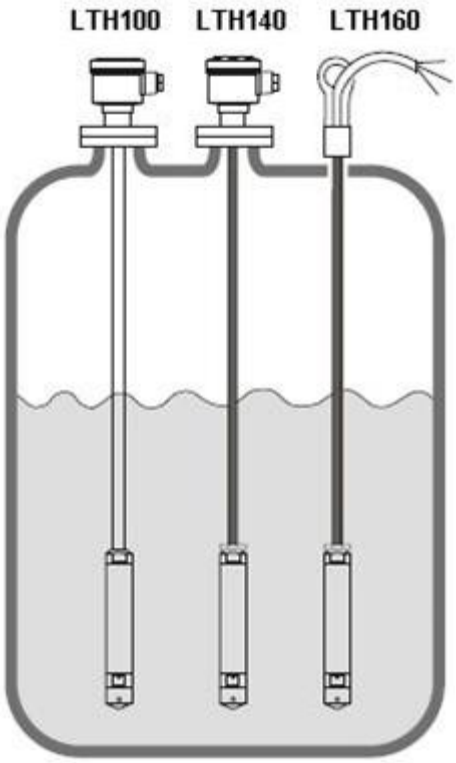
5. Do not use liquid that will crystallize or solidify in all of your pressure transducer.

6. All our pressure transducers are designed to perform in an environment with temperature equal to or less than 80BC (except EC1200). If the desired operation temperature is more than 80°C, please consult with our business representative.

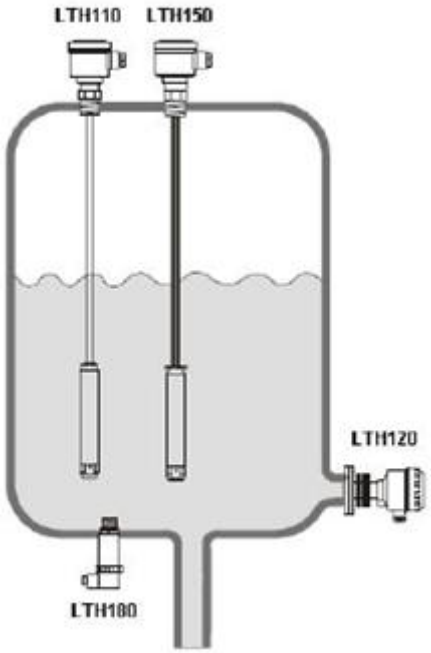
7. The tank or vessel should not be vacuum or where no pressure can be applied to the tank or vessel.

8. Handle the sensor probe with care. The sensor probe is extremely delicate, any extra vibration or shock will damage it.

9. Do not use high pressure jet of water to wash the sensing diaphragm.



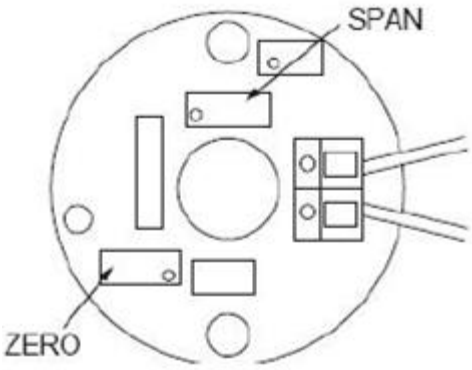
Top Mounting



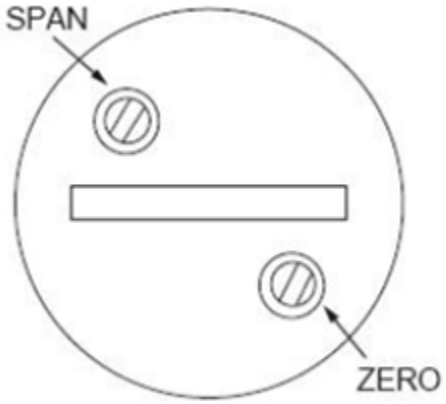
Bottom and Side Mounting

ADJUSTMENT (FOR ZERO-SPAN):

1. Adjust the trimmer "ZERO" while the tank is empty to make sure the current output was expected to reach 4mA.
2. Adjust the trimmer "SPAN" while the tank is full to make sure the current output was expected to reach 20mA.
3. Since Zero & Span adjustment were all done in the factory before shipment, do not perform the above adjustments unless it is really necessary.
4. Adjust range: (SPAN) 18~24mA, (ZERO) 3~5mA.
5. If the sensor output is not a standard 4~20mA signal while liquid level changes between empty and full, we recommend you to use with the PM series digital meter, because which equipped with a built-in programmable input (0~25.5mA) to allows the user to set his configuration. This special function will keep the reading of meter correspond to the any different input signal. More information please refer to Panel Meter Series catalog.



The Electrical Housing of a Transducer with flange



The Electrical Housing for Pressure Transducer

Technical Data

ORDERING INFORMATION

LTH Series – LTH1_ _ -

Model

LTH100	-Extension Tube Flange Type.
LTH110	- Extension Tube Screw Type.
LTH120	- Hi-Temp Flange Type.
LTH130	- Flange Standard Type
LTH140	- Extension Cable Flange Type
LTH150	- Extension Cable Screw Type
LTH160/170	- Extension Cable Type-

LTH180 - Pressure Transducer.

Wetted material

0 : SS304.
1 : SS316.
E : PTFE.

Connecting Type:

B : 1/2" (15A)
C : 3/4" (20A)
D : 1" (25A)
E : 1-1/2" (40A)
F : 2" (50A)
G : 2-1/2" (65A)
H : 3" (80A**)**
I : 4" (100A)
J : 5" (125A)
K : 6" (150A)
S : Others.
M : 5 kg/cm2
N : 10 kg/cm2
O : 150 Lbs
P : 300 Lbs
Q : PT
R : PF (G)
T : BSP
U : NPT
W : PN10 (10Bar)
X : PN16 (16Bar)
Y : PN25 (25Bar)
Z : PN40 (40Bar)
S : Others

Probe Length (Unit: mm):

0050 : below 0.5m
0100 : 1m
0150 : 1.5m 0.5m per Unit
0050 : below 0.5m

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