MJK 1100 / 2100 / 3100
Submersible Hydrostatic Level Transmitters

M275US0205

As our products are developed continuously we reserve the right to make any change in the dimensions and the specifications.

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General

Model 1100

Nominal pressure range 0 - 10 ft, 0 - 30 ft, 0 - 100 ft. Other ranges available; see data sheet.

Model 2100

Nominal pressure range 0 - 10 ft, 0 - 30 ft, 0 - 100 ft. Other ranges available; see data sheet.

Model 3100

Nominal pressure range 0 - 1 ft, 0 - 3 ft, 0 - 10 ft. Other ranges available; see data sheet.

Level measuring with a pressure transmitter is done by immersing a transmitter in the liquid. The transmitter measures the hydrostatic pressure and generates a current signal that is proportional with the hydrostatic pressure and thus proportional with the liquid level.

The MJK Submersible Hydrostatic Level Transmitters are all designed to generate a 2-wire (passive) 4 - 20 mA signal with a 10 - 30 V DC supply.

Safety instructions

1: Read this manual carefully.

2: Be aware of the environment on the installation site. Wear neseccary protective equipment and follow all current safety regulations.

3: MJK Pressure Transmitters must not be used in explosion hazarduous areas.

4: MJK Pressure Transmitters must not be submerged into flammable liquids.

Product identification and pressure ranges

It is very important for the overall measuring accuracy that the pressure transmitter has the correct pressure range.
Check that the item(s) delivered corresponds to the ordered item(s) by means of the information on the label on the packing:

Shown below is the label for a model 1100 pressure transmitter, range 0-10 ft:

The same information plus cable length is printed on a similar label tagged onto the transmitter cable.

On the model 1100 transmitter, all the standard pressure ranges together with the corresponding order numbers are printed on a label on the transmitter housing. The pressure range can be determined by comparing the order number impressed in the steel housing (together with the serial number) with the numbers on the label.

On model 2100 and 3100 transmitters, the actual pressure range is ticked off on the label on the housing.

For all verstions the pressure range can be determined through the serial number.

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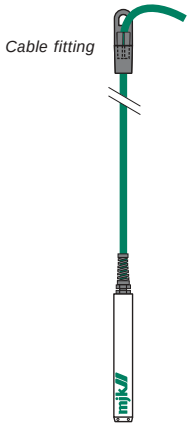
Mechanical mounting, Model 1100

1: Mount a suitable hook over the desired measuring location. Note the weight of the cable.

2: Remove the inner conical sleeve from the cable fitting and pull the cable through the outer part. Open the inner sleeve and fit it around the cable at the desired fixation point and press the inner sleeve into place in the outer part. Secure the cable fitting by pulling the cable downwards.

3: Lower the pressure transmitter into the wellpipe. *Take care not to hit the bottom hard since it may damage the transmitter!*



Model 1100

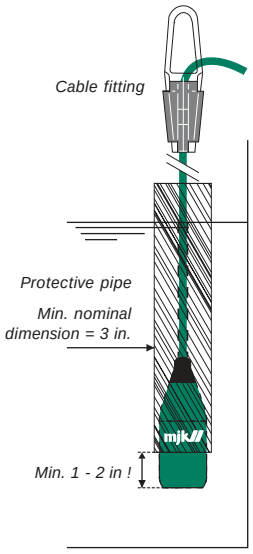
Model 2100

1: Mount a suitable hook over the desired measuring location. Note the weight of the cable.

2: Mount the cable fitting onto the cable. Open the fitting by sliding the two plastic jaws upwards, place the cable between the jaws and slide the jaws downwards until the cable locks. Secure the cable fitting by pulling the cable downwards.

3: Lower the pressure transmitter into the liquid. *Take care not to hit the bottom hard since it may damage the transmitter!*

4: If the transmitter is to be used in a wetwell or other locations with turbulence or other disturbance, it is advisable to install a pipe (min. nominal diameter = 3 in) to protect the transmitter from bumping into the wall or other components. *It is very important that minimum 1 in of the pressure transmitter is not being covered by the pipe!*

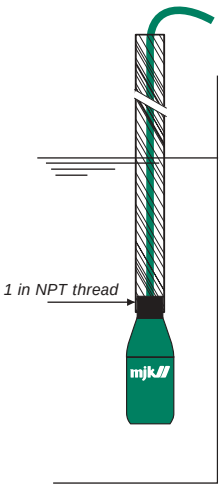


Model 2100

Model 3100

1: Mount the pressure transmitter onto a 1 in pipe (1" NPT thread) and mount the pipe firmly at the desired measuring location.

2: Lower the pressure transmitter into the liquid. *Take care not to hit the bottom hard since it may damage the transmitter!*



Model 3100

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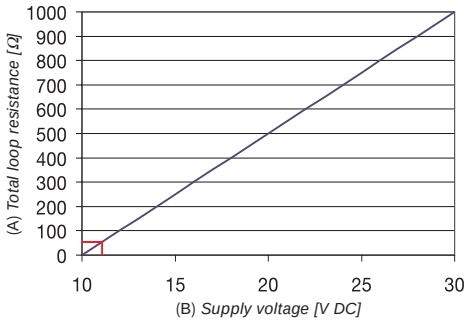
Electrical mounting

The pressure transmitters are delivered with 39 ft of cable as standard (except 209940 and 209960: 120 ft).
The cable can be lengthened with any type of cable using connection box 202922.
Although the measuring signal is not sensitive to electrical noise, we recommend the use of a screened cable.
Ensure that no moisture can enter the pressure compensation tube inside the cable.
The length of the cable is only limited by the total resistance (A) of the cable wires + the input impedance of the analog input on the MJK 704, MJK 713, PLC etc. (typically 10 to 100 Ω) and the available supply voltage (B) (typically 24 V DC).
Example:
The nominal resistance for 1 wire in a transmitter cable is 0.011 Ω/ft. A standard 39 ft cable will therefore add 2 x 0.011 x 39 = 0.86 Ω to the loop resistance. If the analog input has an impedance of 50 Ω, the total resistance will be approx. 51 Ω.
According to the diagram below, approx. 12 V DC will be sufficient.

Necessary supply voltage in relation to the total loop resistance.

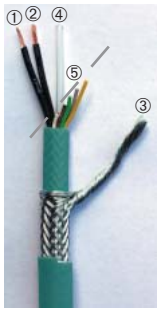


Designation of wires, cutting & stripping the cable

The factory delivered cable has the wires marked with the numbers 1 - 2 - 3 as to the table to the right. If the cable needs to be cutted and stripped, the shield should be connected as the no. 3 wire.
Do NOT connect any of the colored programming wires as it may damage the transmitter. The programming wires should be cut off in different lengths to prevent them from short circuit. *Take care not to block or squeeze the air pressure compensation tube ④.*

Wire designation:
1: Positive (+) wire
2: Negative (-) wire
3: Shield (NOT signal ground!)
4: Air pressure compensation tube
5: Programming wires

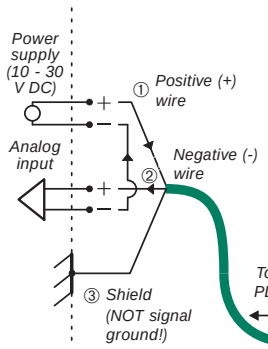
Factory delivery.



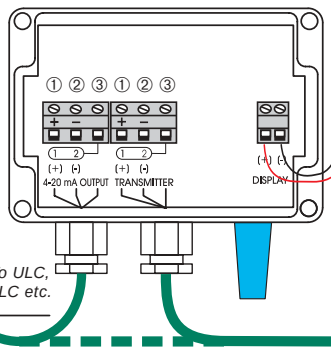
Cutted and stripped.

Cable connection

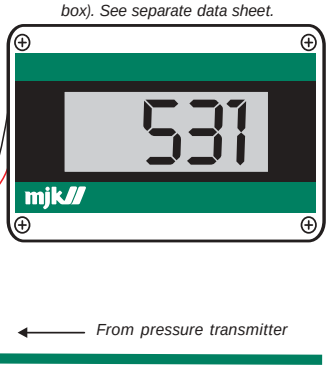
Analog input on 704, PLC etc.



MJK Connection Box (NEMA 4X) with vent plug, order no. 202922.



MJK type 531 Field Indicator, order no. 200126 (option, replaces lid for connection box). See separate data sheet.



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