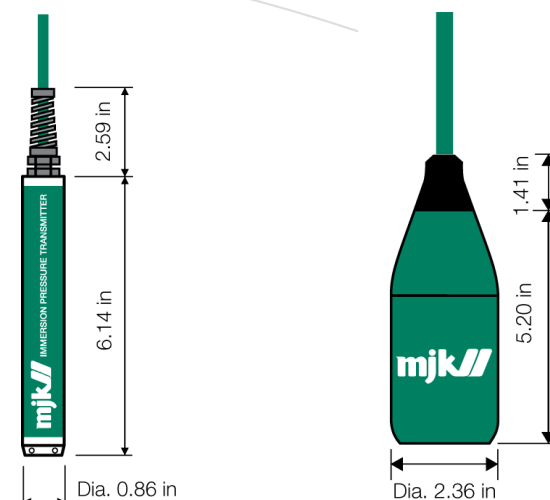


As standard, Expert™ Level Transmitters are delivered as follows:

Expert™ 1100, Piezoresistive, relative pressure, 4-20mA	
209950	Pressure Transmitter 1100, Range 0-10ft, 39ft Cable
209955	Pressure Transmitter 1100, Range 0-30ft, 39 ft Cable
209960	Pressure Transmitter 1100, Range 0-100ft, 105ft Cable
209960-150	Pressure Transmitter 1100, Range 0-100ft, 150ft Cable
209960-200	Pressure Transmitter 1100, Range 0-100ft, 200ft Cable
209960-250	Pressure Transmitter 1100, Range 0-100ft, 250ft Cable
209960-350	Pressure Transmitter 1100, Range 0-100ft, 350ft Cable
209960-500	Pressure Transmitter 1100, Range 0-100ft, 500ft Cable

Expert™ 2100, Piezoresistive, relative pressure, 4-20mA	
209930	Pressure Transmitter 2100, Range 0-10ft, 39ft Cable
209930-75	Pressure Transmitter 2100, Range 0-10ft, 75ft Cable
209932	Pressure Transmitter 2100, Range 0-15ft, 39 ft Cable
209935	Pressure Transmitter 2100, Range 0-30ft, 39ft Cable
209935-75	Pressure Transmitter 2100, Range 0-30ft, 75ft Cable
209935-100	Pressure Transmitter 2100, Range 0-30ft, 100ft Cable
209935-150	Pressure Transmitter 2100, Range 0-30ft, 150ft Cable
209940	Pressure Transmitter 2100, Range 0-100ft, 114ft Cable

Expert™ 1100 / Expert™ 2100 Submersible Hydrostatic Level Transmitters



CE Certificate of conformity

This product complies with the requirements concerning electromagnetic compatibility (EMC) stipulated in Council directive no. 89/336/EEC, 2004/108/EC, 1999/EC, on the approximation of the laws of the Member States relating to electromagnetic compatibility.

We declare that the product complies to the values stipulated in EN 61326-1, 61326-2-3, EN 55011, 61000-4-2, 61000-4-3, 61000-4-4, 61000-4-5, 61000-4-6, 61000-4-8, EN 61000-6-4 2007-02-19, EN 61000-6-2 2005-09-08.

Manufactured by MJK Automation ApS, Blokken 9, DK-3460 Birkerød, Denmark

Connect, Mµ Connect, Chatter, MagFlux, Oxix, pHix compact, Shuttle and SuSix are registered trademarks of MJK Automation ApS.

As our products are developed continuously, we reserve the right to make any alterations without prior notice

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Blokken 9
DK-3460 Birkerød
Denmark

Tel +45 45 56 06 56
www.mjk.com

Introduction

Thank you for choosing an Expert™ Level Transmitter.

We have done everything possible to make an Expert™ Level Transmitter that can fulfil all your demands.

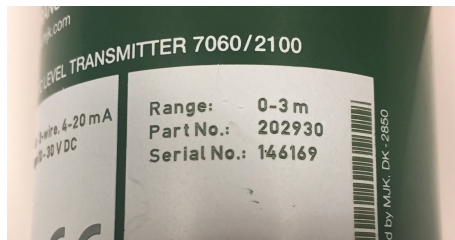
Expert™ Level Transmitters are suitable for all kinds of level measurements. It can control and supervise levels in wells and tanks - including aggressive and polluted media.

The Expert™ Level Transmitter is both easy to install and put into service, but read this manual first - then you will benefit the most from the Expert™ Level Transmitter right from the beginning.

You can always contact your representative or the MJK Service Hotline for advice and guidance. Also, take a look at <http://www.mjk.com>.

Expert™ Level Transmitter is a registered trademark of MJK.

On the Expert™ Level Transmitter model 2100, the pressure ranges together with the corresponding part numbers are laser engraved on the transmitter housing.



Expert™ 2100 Level Transmitter

On the Expert™ Level Transmitter 1100, the pressure ranges together with the corresponding part numbers are laser engraved on the transmitter housing.



Expert™ 1100 Level Transmitter

Safety instructions

- 1: Read this manual carefully.
- 2: Be aware of the environment on the installation site. Wear necessary protective equipment and follow all current safety regulations.
- 3: Do not operate the equipment outside the specified electrical, thermal and mechanical parameters (see datasheet). Install the device only in media for which the wetted materials have sufficient durability. (See datasheet for housing material.)
Max. supply voltage is 30 VDC.

Function

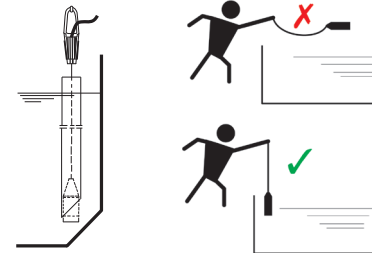
Level measurement with Expert™ Level Transmitters are based on the following principle: An Expert™ Level Transmitter is immersed into liquid and measures the hydrostatic pressure. The Expert™ Level Transmitter produces a current signal that is proportional to the level. The Expert™ Level Transmitter is designed for the 2-wire principle where the two wires are supplied with a voltage between 10 and 30 V DC. The Expert™ Level Transmitter produces a level-proportional 4-20 mA output signal and has a built-in programmable signal amplifier.

Expert™ Level Transmitters 1100 and 2100

These Expert™ Level Transmitters have a pressure equalizing tube in the cable for air pressure compensation so the 4-20mA signal is directly level proportional. When mounting the Expert™ Level Transmitter with an equalizing tube, assure that no moisture or condensation water gets in the tube.

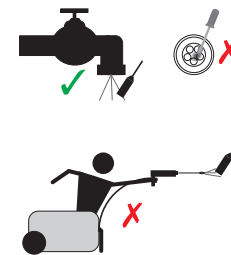
Mechanical mounting

Immerse the Expert™ Level Transmitter into the liquid. In case of turbulence, it can be immersed in a pipe. The Expert™ Level Transmitter is fastened either with the enclosed cable bracket or fitted on a tube with 1" NTP thread (if the Expert™ Level Transmitter is delivered with threaded connection). Removal, cleaning and immersion will be easier if the Expert™ Level Transmitter is fitted in a pipe. Example of mounting in a pipe: (Min. Ø 3in)



Maintenance

When the Expert™ Level Transmitter is constantly immersed, no further maintenance is required. In installations with very dirty water with a tendency to sedimentation or drying out, cleaning may be necessary. Be careful with the fragile diaphragms - they cannot stand cleaning with sharp or pointed objects, only use a soft brush.



Electrical mounting

The Expert™ Level Transmitters are delivered standard with 39ft cable. If the cable needs to be lengthened, normal installation cable can be used. At the connection, ensure that the joint is absolutely waterproof (by potting). When assembling cables to relative Expert™ Level Transmitters, ensure that no moisture or water gets into the equalizing tube. We recommend the use of connection box type 202922.

The cable can be lengthened to:
 $R_L = [U_F - (U_B + 15)]/20$

where:

R_L is the resistance in KΩ of the wires in the cable which is lengthened (do not forget the resistance in both wires!)

U_F is the supply voltage which is approx. 24 V DC in most PLCs.

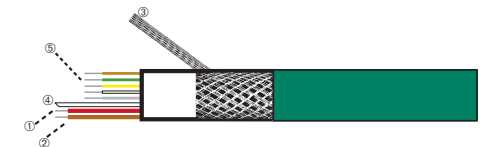
U_B is the voltage drop at the input of a PLC.

Example: An MJK Pump Controller has a voltage supply to the Expert™ Level Transmitter U_F of approx. 24 V DC. If a loop supplied indicator like MJK type 531 with a voltage drop of approx. 3.5V is connected to the circuit, 5.5V will still be available in order to compensate for voltage drop in the cable. After calculation, this gives approx. 275Ω. In a cable with a wire gauge of 0.002in² the resistance is approx. 12Ω/3,280ft.

The signal is not noise sensitive but we recommend carefulness close to cables with high current or recommend the use of shielded cable when there is a risk of electrical disturbance.



Designations		
1	Red	Positive (+) wire
2	Brown	Negative (-) wire
3	Black	Shield (NOT signal ground!)
4	Tube	Air pressure compensation tube
5	Hidden	Programming wires



⑤ Programming	
Green	N/C
Brown	N/C
Yellow	RS485 B
White	N/C
Grey	RS485 A