



# Expert 1400

## HYDROSTATIC LEVEL TRANSMITTER

2.76

### General

MJK Expert™ 1400 Hydrostatic level transmitter has a ceramic capacitive measuring system and built-in breather tube for direct air pressure compensation. It is designed for use in water applications where improved accuracy for both high and low measuring ranges are requested.

Also, Expert™ 1400 is approved for use in explosion hazardous areas - UL Class 1, Division 1, Group A-D.

Therefor, Expert™1400 is very useful for level measurements in, for example, ground water bore holes and in-fill sites where explosion proof transmitters are required.

When using Expert™ 1400 in explosion hazardous environments, an isolator or a zener barrier must be used.

### Features

- Ceramic diaphragm, AISI 316L body
- Surge resistance
- 2-wire 4-20 mA loop powered, 10-30VDC
- Accuracy better than  $\pm 0.1$  % and stability 0.1 % per year
- Programmable zero point and span with flexible measuring ranges
- Measuring ranges from 0-1 ft. to 0-1000 ft.

### Applications

- Ground water bore holes
- In-fill sites
- Approved for mounting in explosion hazardous areas.



DATASHEET

US 2.76 Expert 1400 datasheet 1810

**mjk**  
a xylem brand

# Expert 1400 Hydrostatic Level Transmitter

## Specifications

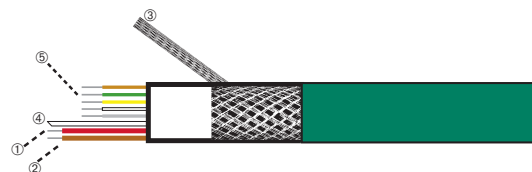
Expert 1400 Level Transmitter								
Nominal Measuring Range	0-1 ft.	0-5 ft.	0-10 ft.	0-15 ft.	0-30 ft.	0-100 ft.	0-300 ft.	0-1000 ft.
Measuring principle	Ceramic capacitive, relative pressure							
Min. programmable range	0-9 ft.	0-9 ft.	0-3 ft.	0-9 ft.	0-9 ft.	0-30 ft.	0-90 ft.	0-300 ft.
Max. programmable range	0-3 ft.	0-3 ft.	0-10 ft.	0-30 ft.	0-30 ft.	0-100 ft.	0-300 ft.	0-1000 ft.
Max. overpressure	75 psi	75 psi	100 psi	150 psi	150 psi	275 psi	600 psi	600 psi
Temperature range	-5 °F to 105 °F							
Temp. deviation, zero point	Better than $\pm 0.01\%$ / °F							
Temperature deviation, FS	Better than $\pm 0.005\%$ / °F							
Linearity / Stability	Better than $\pm 0.2\%$ FS / $\pm 0.2\%$ FS							
Measurement accuracy	Better than $\pm 0.1\%$ FS @ 50 to 85 °F Better than $\pm 0.2\%$ FS @ full temperature range							
Long time stability	Better than $\pm 0.1\%$ FS per year							
Materials	Housing: stainless steel (AISI 316 L), Diaphragm: 96,6 % Al <sub>2</sub> O <sub>3</sub> /Cell Packing: Viton®							
Supply voltage	10 - 30 V DC (12 - 30 V DC for cable lengths above 315 ft.)							
Output signal	2-wire 4 - 20 mA (passive transmitter)							
Cable	2 × AWG 20 (pressure) + 5 × AWG 25 (data), shielded, PUR insulation							
Cable length	39 ft.	39 ft.	39 ft.	39 ft.	39 ft.	114 ft.	361 ft.	1030 ft.
Enclosure	NEMA 6P, withstands a static pressure equal to max. overpressure.							
Safety Approvals	UL® Class I, II and III, Division 1 Hazardous (Classified) Locations, UL 913 ATEX: II 2G EEx ia IIC T4...T6							
Test Approvals	CE directive: 89/336/EEC, 2004/108/EC, 1999/EC 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,							

① The cable length may be extended by using the transmitter connection box (202922) and twisted shielded pair wire.

## Electrical Connections



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

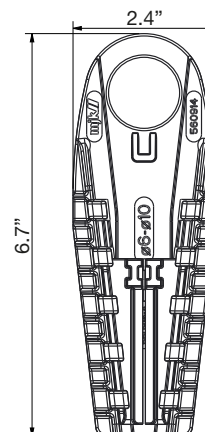


⑤ Programming	
Green	CS (Chip Select)
Brown	GND
Yellow	Data In
White	Clk
Grey	Data Out

## Dimensions



M JK Expert™ 1400 level transmitter



Mounting bracket for M JK Expert™ 1400 level transmitter

# Expert 1400 Hydrostatic Level Transmitter

## Accessories



Expert Link is free of charge.

Link to download center on [www.mjk.com](http://www.mjk.com).



Expert Link Software

840100 Expert Link for Windows for support of the Expert series. Use with 203990 PC (USB) Interface. Information (pressure- and temperature range, version of software etc.):

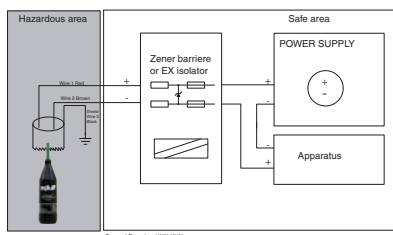
- Indication of actual pressure value and adjusting measuring ranges
- Selection of units
- Setting of a new zero and gain for the transmitter
- Reprogramming of the analog output (i.e. different unit, other pressure range)
- Setting of the instrument address (for Bus-operation and real-time value).



203992 PC Interface used for connecting Expert Hydrostatic Level Transmitters to a PC using Expert Link.



202993 Isolator, an integrated unit including active components with low power consumption. A power supply provides power to the pressure transmitter through a galvanic separator so that neither current nor voltage exceeds the specified values. A ground connection is not required.



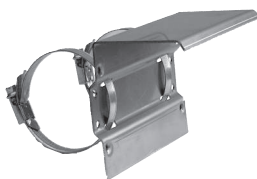
202995 Zener barrier, a passive unit requiring a safe grounding connection based on ATEX regulations. The Zener barrier contains a number of Zener diodes for voltage protection. A safety fuse will blow if the current exceeds the limits. A Zener barrier requires a safe ground connection.



202922 Transmitter connection box NEMA 6 enclosure for a safe connection of 4-20 mA cables.Ⓢ



200126 Field indicator 531, display insert, 4-20mA loop powered, NEMA 6 enclosure. For instant local readout.Ⓢ



200117 Rainroof/Sun Shield for 531, weather protection for display and connection box.

Ⓢ For a complete display you need both the 20016 531 display insert and the

# Expert 1400 Hydrostatic Level Transmitter

## Order Numbers

Expert™ 1400, Hydrostatic Level Transmitter	
MJK209911	Pressure Transmitter 1400, range 0-1 ft., 39 ft. cable
MJK209912	Pressure Transmitter 1400, range 0-3 ft., 39 ft. cable
MJK209913	Pressure Transmitter 1400, range 0-10 ft., 39 ft. cable
MJK209914	Pressure Transmitter 1400, range 0-15 ft., 39 ft. cable
MJK209915	Pressure Transmitter 1400, range 0-30 ft., 39 ft. cable
MJK209915-100	Pressure Transmitter 1400, range 0-30 ft., 100 ft. cable
MJK209915-150	Pressure Transmitter 1400, range 0-30 ft., 150 ft. cable
MJK209915-350	Pressure Transmitter 1400, range 0-30 ft., 350 ft. cable
MJK209915-500	Pressure Transmitter 1400, range 0-30 ft., 500 ft. cable
MJK209916	Pressure Transmitter 1400, range 0-100 ft., 114 ft. cable
MJK209916-150	Pressure Transmitter 1400, range 0-100 ft., 150 ft. cable
MJK209916-200	Pressure Transmitter 1400, range 0-100 ft., 200 ft. cable
MJK209916-250	Pressure Transmitter 1400, range 0-100 ft., 250 ft. cable
MJK209916-350	Pressure Transmitter 1400, range 0-100 ft., 350 ft. cable
MJK209916-500	Pressure Transmitter 1400, range 0-100 ft., 500 ft. cable
MJK209917	Pressure Transmitter 1400, range 0-300 ft., 361 ft. cable
MJK209918	Pressure Transmitter 1400, range 0-1000 ft., 1030 ft. cable

## Order Numbers Accessories

Expert™ 1400, Hydrostatic Level Transmitter Accessories	
MJK200117	Rainroof/Sun Shield for 531, display and connection box
MJK200126	Field indicator 531, display insert, 4-20mA loop powered
MJK202922	Transmitter connection box
MJK202993	Loop supplied Ex-isolator for DIN rail mounting
MJK202995	Zener barrier for hydrostatic transmitter 9002/13-280-110-00
MJK203990	PC Interface (USB) for Expert™ Transmitter 1400/3400
MJK560914	Plastic Mounting Bracket for Expert™ Transmitter, cable Ø6-10mm
MJK691075-FT	Communication Cable 2x2x0.5mm2 (AWG24) shielded twisted pair

