

# Expert 1400

HYDROSTATIC LEVEL TRANSMITTER

2.76

## General

Expert™ 1400 Hydrostatic level transmitter with Ceramic capacitive measuring system and built-in breather tube for direct air pressure compensation, designed for use in water applications where improved accuracy for both high and low measuring ranges are requested.

The transmitter is approved for mounting in explosion hazardous areas.

## 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 - 0,3 m to 0 - 300 m

## Applications

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



DATASHEET

EN 2.76 EXPERT 1400 DATASHEET 1412

**mjk**  
a xylem brand

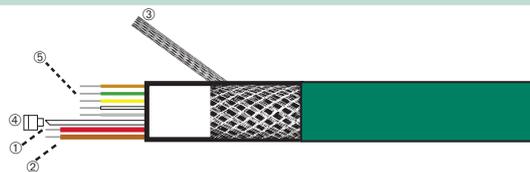
# Expert 1400 Level Transmitter

## Specifications

Expert 1400 Level Transmitter								
Nominal Measuring Range	0 - 0,3 m	0 - 1 m	0 - 3 m	0 - 5 m	0 - 10 m	0 - 30 m	0 - 100 m	0 - 300 m
Measuring principle	Ceramic capacitive, relative pressure						Ceramic cap., Sealed gate	
Min. programmable range	0 - 0,3 m	0 - 0,3 m	0 - 1 m	0 - 3 m	0 - 3 m	0 - 10 m	0 - 30 m	0 - 90 m
Max. programmable range	0 - 1 m	0 - 1 m	0 - 3 m	0 - 10 m	0 - 10 m	0 - 30 m	0 - 100 m	0 - 300 m
Max. overpressure	4 bar	4 bar	6 bar	10 bar	10 bar	18 bar	40 bar	40 bar
Temperature range	-10 °C to 70 °C							
Temp. deviation, zero point	Better than ± 0.02 % / °C							
Temperature deviation, FS	Better than ± 0.01 % / °C							
Linearity / Stability	Better than ± 0.2 % FS / ± 0.2 % FS							
Measurement accuracy	Better than ± 0.1 % FS @ +10 to 30 °C Better than ± 0.2 % FS @ full temperature range							
Long time stability	Better than ± 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 100m)							
Output signal	2-wire 4 - 20 mA (passive transmitter)							
Cable	2 × 0,5 mm <sup>2</sup> (pressure) + 5 × 0,15 mm <sup>2</sup> (data), shielded, PUR insulation							
Cable length	12 m	12 m	12 m	12 m	12 m	35 m	110 m	320 m
Enclosure	IP68, withstands a static pressure equal to max. overpressure.							
Safety Approvals	UL® Class I, II and II, 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,							

Can be delivered with other cable lengths on request.

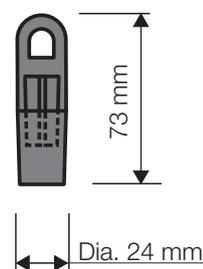
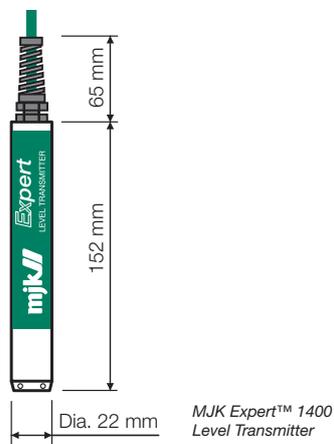
## Electrical Connections



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

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

## Dimensions



Cable bracket for MJK Expert™ 1400 Level Transmitter  
(1 pc. is delivered with each transmitter)

# Expert 1400 Level Transmitter

## Isolator / Zener barriere

When using model Expert™ level transmitters 1400/3400 in explosion hazardous environments Category 2 (Zone 1 and 2), an isolator or a zener barrier **must** be used.

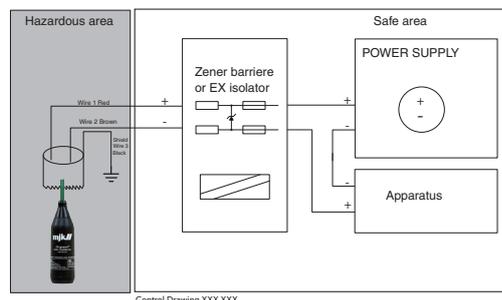
### Isolator

The isolator is an integrated unit including active components with low power consumption. A power supply provides power to the pressure transmitter through a galvanic separator such that neither current nor voltage exceeds the specified values. A ground connection is not required. Item No. 202993

### Zener Barrier

The Zener barrier is a passive unit requiring a safe grounding connection based on the 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. Item No. 202995



## Accessories

202922 Transmitter connection box IP 67 enclosure for a safe connection of 4-20 mA cables



200126 Field indicator 531, display insert, 4-20mA loop powered, IP65 enclosure. For instant local readout.

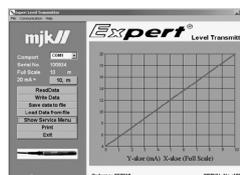


200117 Rainroof/Sun Shield for 531, weather protection for display and connection box



840100 For support of the Expert 1400 og 3400 series, use with 203990 PC Interface For Win XP-7

Use with 840100-2.03 USB driver for Win 7.  
840100-2.03 USB driver for Expert Link (Win XP-7) from download center



# Expert 1400 Level Transmitter

## Order Numbers

Expert™ 1400, Capacitive Ceramic, Relative Pressure	
203911	Expert™ 1400, range 0 - 0,3 mWG
203912	Expert™ 1400, range 0 - 1 mWG
203913	Expert™ 1400, range 0 - 3 mWG
203914	Expert™ 1400, range 0 - 5 mWG
203915	Expert™ 1400, range 0 - 10 mWG
203916	Expert™ 1400, range 0 - 30 mWG
203917	Expert™ 1400, range 0 - 100 mWG (SG)
203918	Expert™ 1400, range 0 - 300 mWG (SG)

## Order Numbers Accessories

Order Numbers Accessories	
200117	Sun shield / rain roof for connection box / field mounted temperature transmitter
200126	Display insert type 531 for connection box / field mounted temperature transmitter, 4-20mA loop powered
202920	Cable length, not standard
202922	Connectionbox for Expert™ level transmitter cable
202925	Expert™ 1400, with special measuring range
203990	USB interface for Expert™ 1400/3400 level transmitters with calibration software
202993⓪	Loop supplied insulator for DIN rail mounting.
202995⓪	Zener barrier for hydrostatic transmitter 9002/13-280-110-00
560916	Mounting Bracket for Expert™ 1100, 1400, 7030, 7070
691005	Cable for Expert™ 1100, 1400, 7070, UL approved, PUR, per meter

⓪ One of these is mandatory when using model 1400 in explosion hazardous environments.