

Remote control

Electronic Remote control for magnetically operated reed switches in level sensors
3-wire resistance transmitter or
2-wire 4-20 mA transmitter with integrated R/I-converter,
HART protocol or fieldbus

Product group **745**

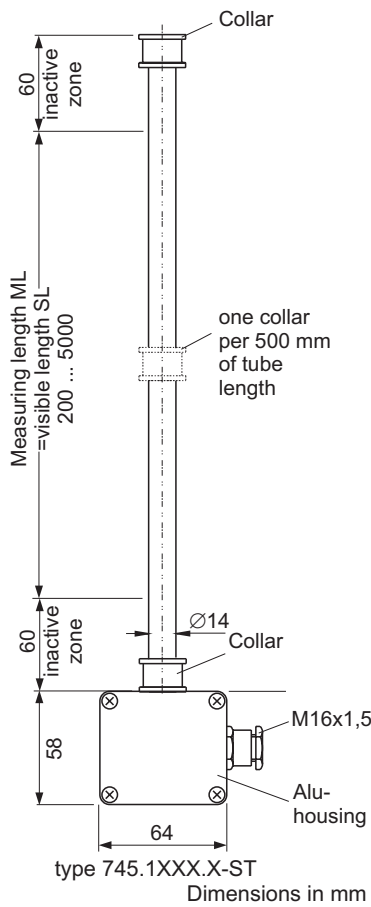
Type **1XXX**

Sheet: 1/2 Revision: 17

Date: 11/08



Example picture:
0 - 100 %
Terminal box
down



Field of Application

This Remote control is for measuring level discontinuous at PHÖNiX magnetic level gauges and mounted externally. It is an accessory to a local indicator. Ex-proof types can be used in Zone 1 (R-transmitter type 1XX2.2 only in combination with Zener-barriers).

General Data

Resolution .115X.X/110X.X/.105X.X: 15/10/5* mm
Hysteresis 15/10/5 * mm: < 22/22/2,5 mm
Linearity of R/I-converter/Reed chain: ± 0,15 % / ± 1,5 %
Temperature coefficient: < 0,015 %/°C
Measuring length ML: 200...5000 mm
Fixture: collar, ordering no. see page 2
Housing material, dimension: Alu, 64x58x37 mm
Diameter Sensor pipe: 14 mm
Weight: ca. 0,8 kg + 7 g/cm*) for all PHÖNiX Magn. Level Gauges except 710.110

Design Data

Temperature Ambient/T4/T6: -40 to +85/85/60 °C
Temperature media in the tube: < 400 °C *)
Ex-classification transmitter: II 1GD EEx ia IIC T4/T6
U/I/P/L/C, .7/.H: 30 V/120 mA/0,84 W/ 10 H/ 1 nF
U/I/P/L/C, .F: 30 V/120 mA/0,84 W/ 1 H/ 2 nF
*) Above 150 °C insulation between tube and sensor is needed, above 120 °C sensor may not be included in the insulation!

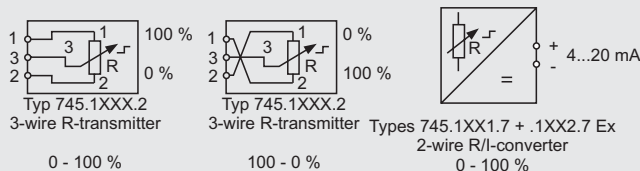
Electrical Data

Cable gland: M16x1,5 (for Ex blue)
Ingress protection EN 60529: IP 67
Total resistance R Reed chain: 940 Ω/m

R/I-converter:

	.1XX1.7	.1XX2.7
Supply voltage	8...36 VDC	8...28 VDC
Supply current	4...20 mA	4...20 mA
max. burden at 24 V	800 Ω	695 Ω
setting range	0 % 100 %	4...20 mA 20...4 mA

Connection diagram



Certificates

2-wire transmitter: KEMA 03 ATEX 1535
Hart transmitter: KEMA 03 ATEX 1537
Fieldbus-Transmitter: KEMA 02 ATEX 1318
Subject to alterations

Ordering no.

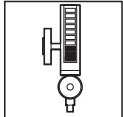
7 4 5 . 1 X X X . X - X X X - X X X X - Measuring length ML [mm]

Resolution	5 mm	0	5	S	T	N	straight, 150 °C	Form, media temperature
	10 mm	1	0					
	15 mm	1	5					
Version	Standard		1	W	I	T	bent, >150 250 °C	
	Ex		2					
	without		2					
Transmitter	2-wire, 4...20 mA		7	W	I	H	bent, >250 °C	
	2-wire, HART		H					
	2-wire, Fieldbus		F					

PHÖNiX

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PHÖNiX



Remote control

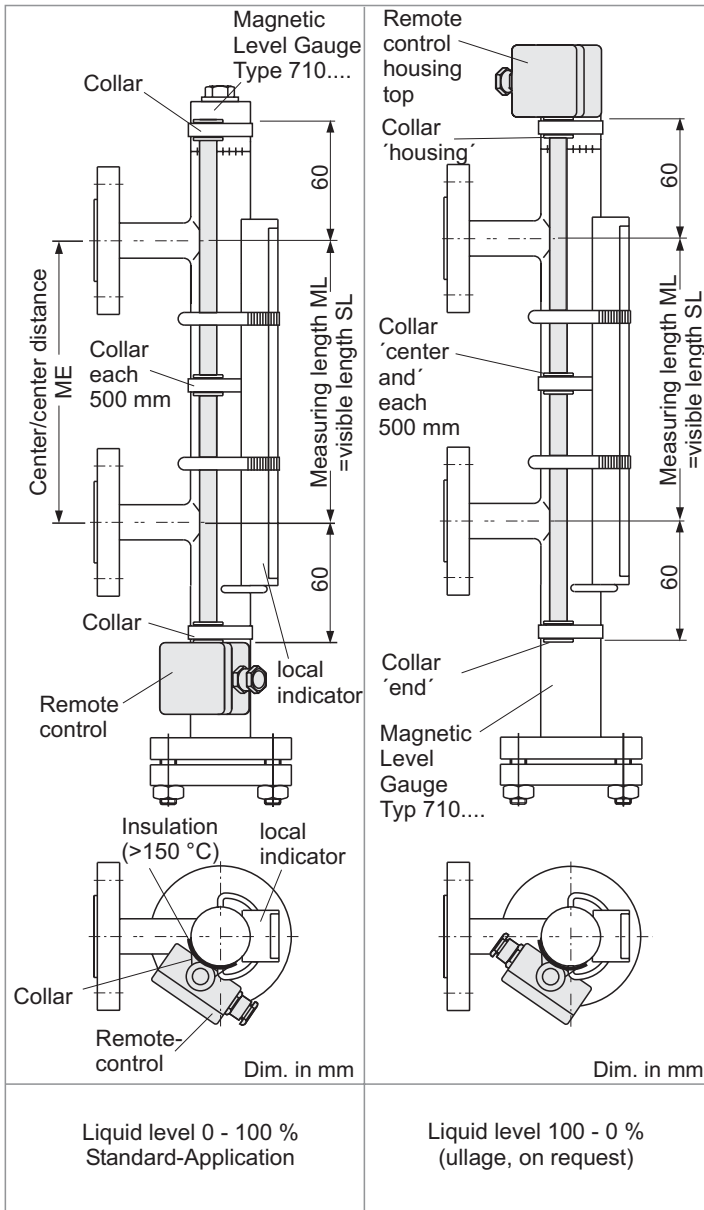
Application hints

Product group **745**

Type **1XXX**

Sheet: 2/2 Revision: 17

Date: 11/08

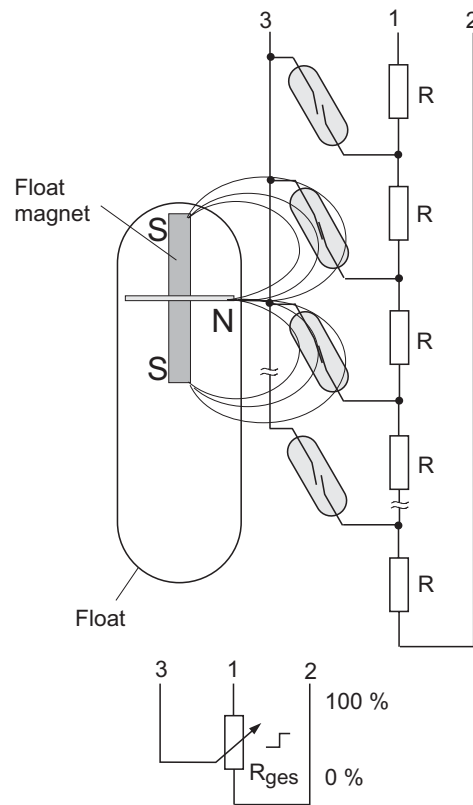


Functional description

The remote Control is actuated by the magnetic field of a magnet in a float. The circuit is equivalent to a 3-wire potentiometer-pickoff.

Corresponding to the float's position within the magnetic gauge tube the Reed-switches are actuated accordingly by the magnetic field. Those are tapering without interruption the resistor-chain potentiometer.

So the signal is dis-continuous and proportional to the liquid level within the gauge tube.



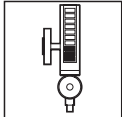
Subject to alterations

Ordering no.

Mounting accessories	Collar for 710.104/2XX	171546
	Collar for 710.100/103	171546
	Collar for 710.110/120/106/130/100.3	171553
	Insulation for media temperature >150 ≤250 °C	GEW50GQ03
	Insulation for media temperaturer >250 °C	59456008GL
Elektrical accessories	Zener barrier	745.1040
	Feed circuit	745.105X

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Remote Control MAGNODUL®

Electronic remote control with a magnetostrictive Sensor
high resolution
high magnetic field sensitivity for float magnets
2-wire 4-20 mA passive

Product group **745**

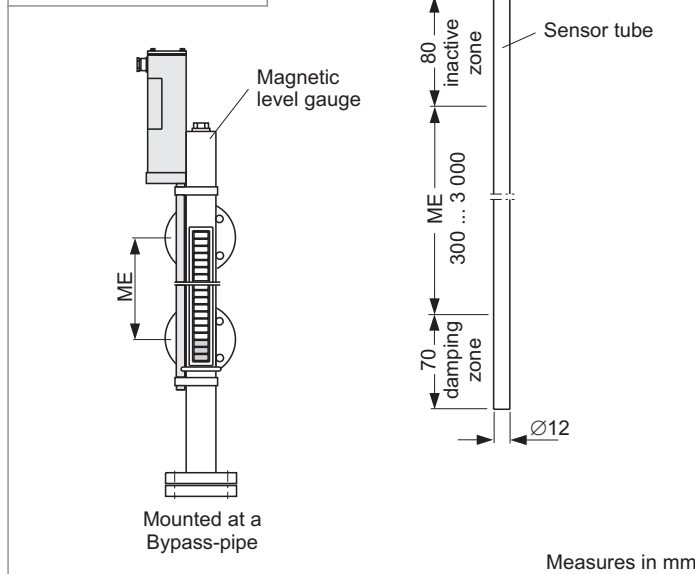
Type **200X**

Sheet: 1/1 Revision: 4

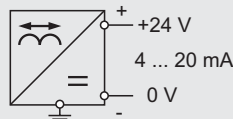
Date: 01/05



Type .2002



Connection diagram



Field of Application

This Sensor MAGNODUL® is for measuring the liquid level/ullage in a magnetic level gauge Type 710.104/098 and is a supplement to the local indicator. It can be used in Ex-Zone 1 and 2.

Principle of function

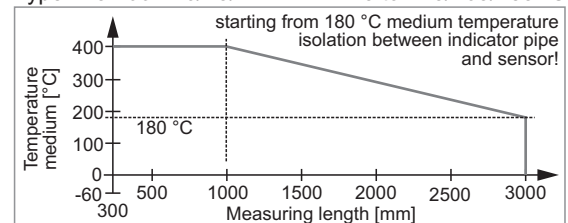
The sensor is a magnetostrictive wire, which is flowed through by a short current pulse. From the place of the float magnet a torque wave proceeds, whose running time is a measure for the level.

General Data

Accuracy: $\leq 0,05\%$ of ME or ± 2 mm
Resolution: $< 0,1$ mm
Linearity: $\leq 0,07\%$ of ME or $\pm 0,5$ mm
Hysteresis: < 10 mm
Temperature coefficient: $0,025\%$ of ME/K
Innage/Ullage: Innage preset at works
Weight: ca. $1,5$ kg + 5 g/cm

Design Data

Pressure: same as magnetic level gauge
Temperature storage: -45 to $+85$ °C
Temperature ambient Type 745.2001: -40 to $+85$ °C
Type 745.2002 T6/T5/T4: -25 to $+45/+65/+85$ °C



Material Sensor tube and housing: SS
Measuring length: 300 to 3000 mm
Ex-classification: II 2 G EEx ia IIC T6/T5/T4
U_i/I_i/P_i/L_i/C_i: 30 V/100 mA/1 W/ $\leq 0,3$ mH/ < 10 nF

Electrical Data

Supply voltage: 10 to 30 VDC
Current loop 2-wire: 4 to 20 mA
Burden R: $R=(U-10\text{ V})/0,02\text{ A}$
Cable gland: M16x1,5, for Ex blue
Cross section wire max: $1,5\text{ mm}^2$
Cable length: max. 2000 m at $0,5\text{ mm}^2$
Ingress protection EN 60529: IP65

Certificates

EC-Type Examination Certificate: ZELM 03 ATEX 0132
Subject to alterations

Ordering no.

745 . 200X - XXXX

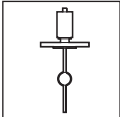
Standard	1
Ex	2

Center to center ME in mm
e. g. 0600 = 600 mm

PHÖNIX

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Remote Control MAGNODUL®

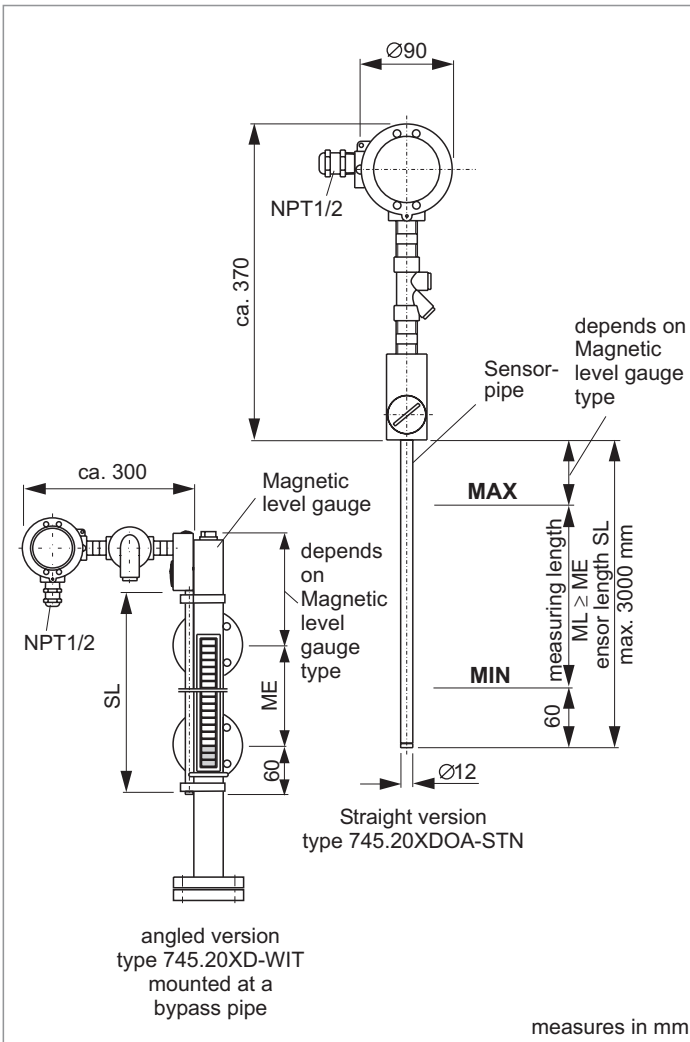
Digital magnetostrictive remote control
high resolution
high magnetic field sensitivity for float magnets
2-wire 4-20 mA passive
HART optional

Product group **745**

Type **20XX**

Sheet: 1/1 Revision: 8

Date: 08/08



Field of Application

This Sensor MAGNODUL® is for measuring the liquid level/ullage in a magnetic level gauge Type 710.104/098 and is a supplement to the local indicator. Ex classification Ex d. Output signal analogue and/or digital.

Principle of function

The sensor is a magnetostrictive wire, which is flowed through by a short current pulse. From the place of the float magnet a torque wave proceeds, whose running time is a measure for the level.

General Data

Resolution: 0,1 mm
Linearity: $\pm 0,5$ mm
Hysteresis (depends on float): $> 0,5$ mm
Weight: ca. 1,5 kg + 5 g/cm

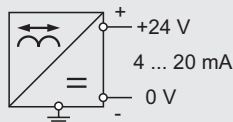
Design Data

Pressure: atmospherically
Temperature storage: $-25 \dots +85$ °C
Temperature medium max: $-200 \dots +150$ °C
Temperature ambient: $-20 \dots +60$ °C
Material Sensor tube/housing: SS/Aluminum
Measuring length: 100...3000 mm
Ex-classification: II 2 G Ex d [ib] IIC T6...T1

Electrical Data

Supply voltage: 24 VDC $\pm 20\%$
Current loop 2-wire: 4...20 mA (NAMUR)
Digital interface: HART (optional)
Cable gland: NPT1/2"
Wire cross section max.: 1,5 mm²
Cable length: max. 500 m at 0,5 mm²
Ingress protection EN 60529: IP66/67

Connection diagram

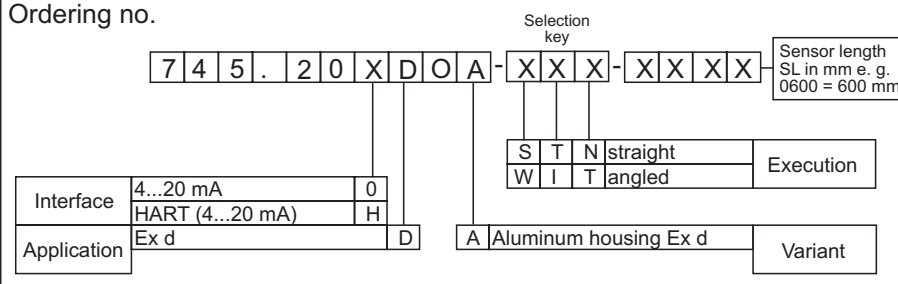


Certificates

EC-Type Examination Certificate: ZELM 08 ATEX 0377

Subject to alterations

Ordering no.



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