

**P18** TEMPERATURE AND HUMIDITY TRANSDUCER  
**P18L** TEMPERATURE OR HUMIDITY TRANSDUCER

FEATURES:

- Linear charac.
- LPCConfig Program
- MOD BUS
- RS 485



- Built-in temperature and humidity sensor.
- Calculation of selected physical quantities (dew-point temperature, absolute humidity) – (only P18).
- 2 analog outputs 0/4...20 mA or 0...10 V (P18 option).
- Supply from current loop (P18L).
- Standard d.c. current or d.c. voltage output signal (only P18).
- Storage of measured and calculated maximum and minimum values (only P18).

INPUT:



OUTPUTS:

- 4...20 mA
- 0..10 V

only P18L



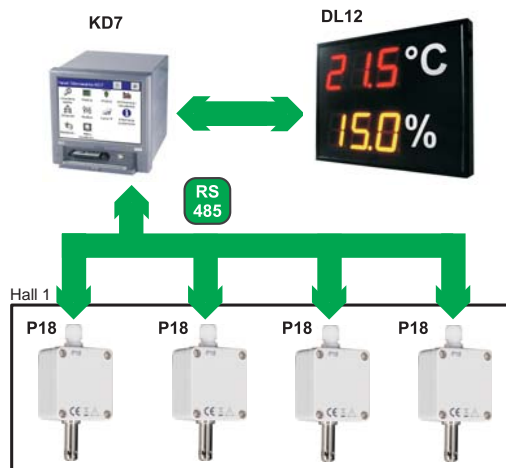
only P18

GALVANIC ISOLATION:



only P18

EXAMPLE OF APPLICATION



Measurement and recording of temperature and humidity.

INPUTS

Input type	Measuring range	Error
Temperature	-30 .. -20 .. 60 .. 80°C	+/- 0.5%
Relative humidity	0 .. 100%	+/- 2% for RH = 10 .. 90% +/- 3% for RH in the remaining range

OUTPUTS

Output type	Admissible load resistance	Remarks
4 .. 20 mA	$R_{load} \leq 100 \Omega$	for P18
	$R_{load} \leq 500 \Omega$	P18L
0 .. 10 V	$R_{load} \geq 1 k\Omega$	only P18

DIGITAL INTERFACE

Interface type	Transmission mode	Baud rate
RS-485 Modbus RTU	8N1, 8N2, 8E1, 8O1	4,8; 9,6; 19,2; 38,4; 57,6 kbit/s

EXTERNAL FEATURES

Overall dimensions	38 × 58 × 118 mm
Weight	125 g
Protection grade	ensured by the casing: IP65
Fixing	on a wall

RATED OPERATING CONDITIONS

Supply voltage	P18	9 .. 24 V d.c./a.c	input power < 2 VA
	P18L	19 .. 30 V d.c.	input power < 1.5 VA
Temperature	ambient: -20...23...60°C		
Humidity	< 95%		inadmissible condensation
Operating position	any		in application not exposed to water contact
	sensor chamber towards the earth		in application exposed to water contact
Preheating time	15 minutes		
Air flow rate	$\geq 0.4$ m/s		

## SAFETY AND COMPATIBILITY REQUIREMENTS

Electromagnetic compatibility	noise immunity	acc. to EN 61000-6-2
	noise emissions	acc. to EN 61000-6-4
Isolation between circuits	basic	
Pollution level	2	
Installation category	III	acc. to EN 61010-1
Maximal phase-to-earth operating voltage	50 V	
Altitude a.s.l.	< 2000 m	

## CONNECTION DIAGRAM

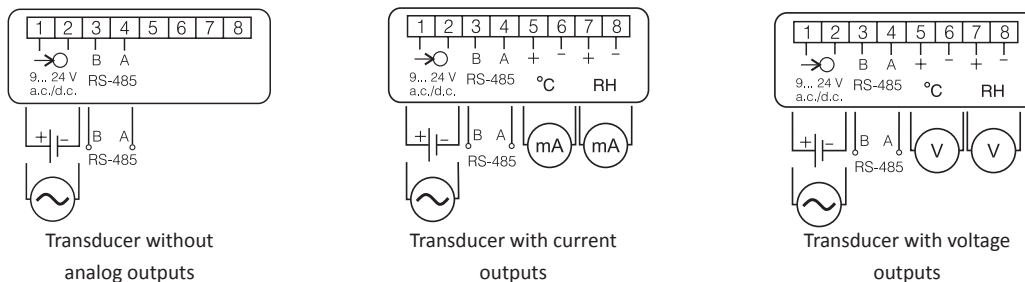


Fig. 1 Connection way of electric signals – P18.

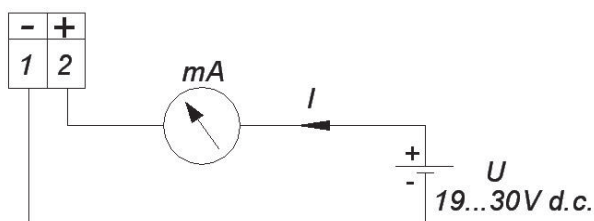


Fig. 2 Connection way of electric signals – P18L

## ORDERING

<b>P18</b> -	X	XX	X
<b>Analog outputs:</b>			
without analog outputs	0		
current output 4...20 mA	1		
voltage output 0...10 V	2		
<b>Version:</b>			
standard		00	
non standard setting		NS	
custom-made*		XX	
<b>Acceptance tests:</b>			
without extra quality requirements			8
with an extra quality inspection certificate according to customer's request *			7
			X

\* After agreeing with the manufacturer.

### ORDER EXAMPLE:

The code **P18 - 1 - 00 - 8** means: temperature and humidity transducer of P18 type, with a current analog output: 4...20 mA, standard version, without extra quality requirements. If required, one must additionally order a sensor protection shield acc. to the table 1, eg. shield 08744-490-014 means a filter made of sintered bronze.

<b>P18L</b> -	XX	X
<b>Version:</b>		
standard	00	
non standard settings	NS	
custom-made*	XX	
<b>Acceptance tests:</b>		
without extra quality requirements		8
with an extra quality inspection certificate according to customer's request *		7
		X

\* - After agreeing with the manufacturer.

### ORDER EXAMPLE:

The code **P18L - 00 - 8** means: temperature and humidity transducer of P18L type, standard version, without extra quality requirements. If required, one must additionally order a sensor protection shield acc. to the table 1, eg. shield 08744-490-016 means a membrane filter.

Table 1

Order code	Design	Name	Construction	Features	Typical application
0874-490-016		Membrane filter	Casing made of PCV, membrane of teflon, laminated by a film. Pore size: 1 µm	Mean filtration effect. Maximal temp.: up to 80 °C Response time: t10/90:15 s	Building automation. In rooms with low pollution.
0874-490-015		Filter made of teflon	Sintered teflon. Pore size: 50 µm	High chemical resistance. Maximal temp.: up to 180 °C Response time: t10/90:14 s	Drying process in chemical applications.
0874-490-014		Filter made of sintered bronze	Sintered bronze. Pore size: 60 µm	High mechanical resistance. To co-operate in high pollution environments. Applied at small air humidity Response time: t10/90:10 s	Agricultural applications.

SEE ALSO:



KD7 recorder.



Interface converter USB/RS-485 - PD10.



Tricolour digital display for outdoor application -DL21.



LUMEL-PROCES software.

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