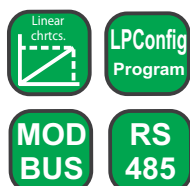


# P18, P18D P18L TEMPERATURE AND HUMIDITY TRANSDUCER TEMPERATURE OR HUMIDITY TRANSDUCER

## FEATURES:



## INPUT:



## OUTPUTS:

4...20  
mA

only P18, P18D

0..10  
V

only P18, P18D

RS  
485

only P18, P18D



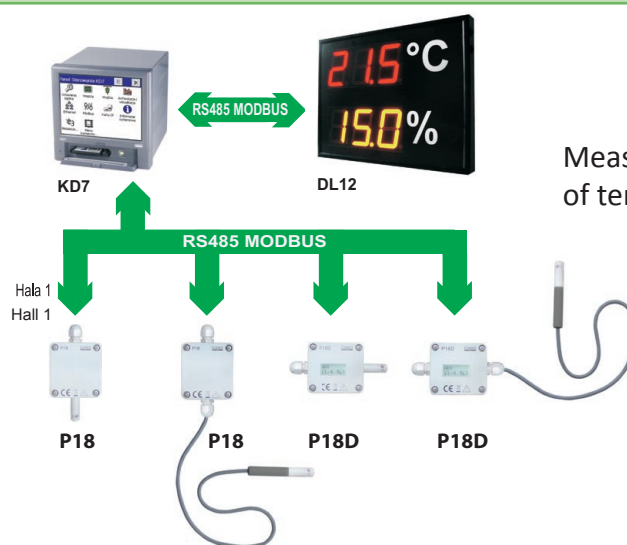
## P18, P18D

- Built-in temperature and humidity sensor or with probe on 0.5 m wire.
- Calculation of selected physical quantities (dew-point temperature, absolute humidity).
- Interface RS-485 Modbus.
- 2 analog outputs 0/4...20 mA or 0...10 V (option).
- Standard d.c. current or d.c. voltage output signal
- Storage of measured and calculated maximum and minimum values
- Visualisation of measured value on a LCD display (only P18D).

## P18L

- Built-in temperature and humidity sensor.
- Supply from current loop
- 1 analog output 4 ... 20 mA.

## EXAMPLE OF APPLICATION



Measurement and recording  
of temperature and humidity.

## INPUTS

Input type	Measuring range	Error
Temperature	P18, P18D: -40 .. -20 .. 60 .. 85°C P18L: -30 .. -20 .. 60 .. 85°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	$R_{load} \leq 100 \Omega$ $R_{load} \leq 500 \Omega$	for P18/P18D P18L
0 .. 10 V	$R_{load} \geq 1 \text{ k}\Omega$	only P18/P18D

## DIGITAL INTERFACE (only P18/P18D)

Interface type	Transmission mode	Baud rate
RS-485 Modbus RTU	8N1, 8N2, 8E1, 8O1	4,8; 9,6; 19,2; 38,4; 57,6; 115,2 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, P18D	9 .. 24 V d.c./a.c	input power < 0.5 VA
	P18L	19 .. 30 V d.c.	input power < 1 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	≥ 0.5 m/s (P18/ P18D)		
	≥ 2 m/s (P18L)		

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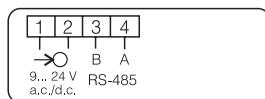
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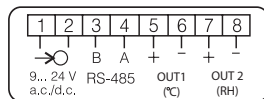
### SAFETY AND COMPATIBILITY REQUIREMENTS

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

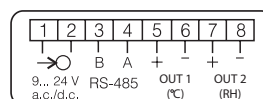
### CONNECTION DIAGRAM



Transducer without  
analog outputs



Transducer with current  
outputs



Transducer with voltage  
outputs

Fig. 1 Connection way of electric signals – P18, P18D.

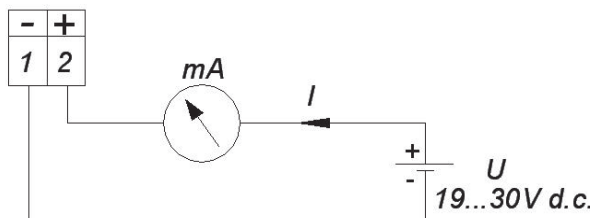


Fig. 2 Connection way of electric signals – P18L

### ORDERING

P18(D) -	X	XX	X	X
<b>Analog outputs - sensor:</b>				
without outputs, sensor on the housing	0			
current 4...20 mA, sensor on the housing	1			
voltage 0...10V, sensor on the housing	2			
without outputs, probe on the wire 0,5 m	3			
current 4...20 mA, probe on the wire 0,5 m	4			
voltage 0...10V, probe on the wire 0,5 m	5			
<b>Version:</b>				
standard	00			
custom-made*	XX			
<b>Language:</b>				
Polish			P	
English			E	
other*			X	
<b>Acceptance tests:</b>				
without extra quality requirements			0	
with quality inspection certificate			1	
acc. to customer's request*			X	

\* - After agreeing with the manufacturer.

P18L -	XX	X
<b>Version:</b>		
standard	00	
custom-made*	XX	
<b>Acceptance tests:</b>		
without extra quality requirements		0
with an extra quality inspection certificate		1
according to customer's request*		X

#### ORDER EXAMPLE:

The code: **P18 - 1 - 00 - E - 0** means: temperature and humidity transducer of P18 type, with a current analog output: 4...20 mA, standard version, user's manual in English, 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.

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:



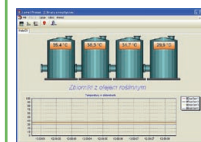
KD7 recorder.



Interface converter  
USB/RS-485 - PD10.



Tricolour digital  
display for outdoor  
application  
-DL21.



LUMEL-PROCES  
software.



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