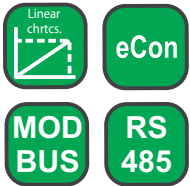


**P18, P18D** TEMPERATURE AND HUMIDITY TRANSDUCER  
**P18L** TEMPERATURE OR HUMIDITY TRANSDUCER

**FEATURES:**



**INPUT:**



**OUTPUTS:**

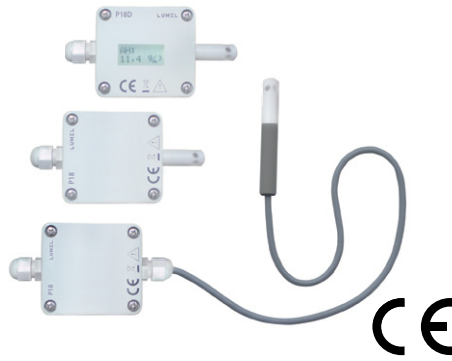
4...20 mA

0..10 V

only P18, P18D

RS 485

only P18, P18D



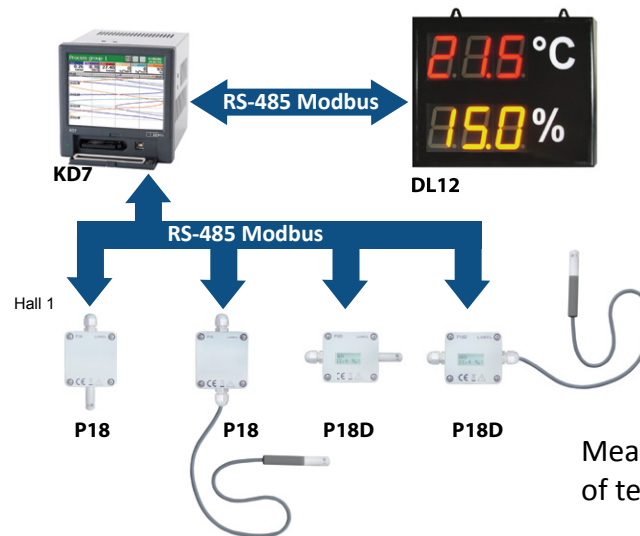
**P18, P18D**

- 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	$R_{load} \leq 100 \Omega$	for P18/P18D
	$R_{load} \leq 500 \Omega$	P18L
0 .. 10 V	$R_{load} \geq 1 k\Omega$	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	$\geq 0.5$ m/s (P18/ P18D)		
	$\geq 2$ m/s (P18L)		

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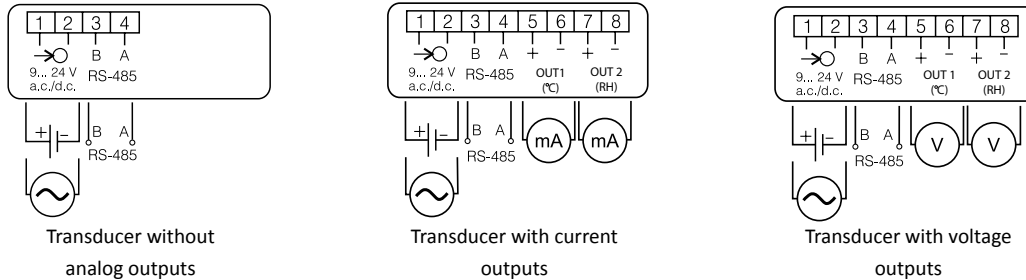
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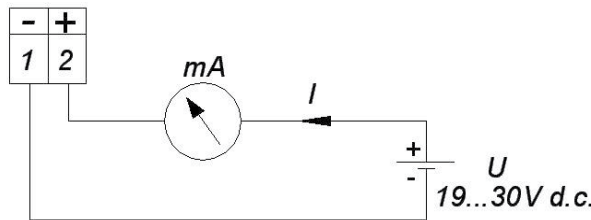
**SAFETY AND COMPATIBILITY REQUIREMENTS**

Electromagnetic compatibility	noise immunity	acc. to EN 61000-6-2
	noise emissions	acc. to EN 61000-6-4
Isolation between circuits	basic	
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, P18D.



**Fig. 2** Connection way of electric signals – P18L

**ORDERING**

<b>P18(D) -</b>	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
with calibration certificate certificate				2
with quality inspection and calibration				3
acc. to customer's request*				X

<b>P18L -</b>	XX	X
<b>Version:</b>		
standard	00	
custom-made*	XX	
<b>Acceptance tests:</b>		
without extra quality requirements		8
with an extra quality inspection certificate		7
with calibration certificate		4
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 20-015-00-00003 means a filter made of sintered bronze.

\* - After agreeing with the manufacturer

Table 1

Order code	Design	Name	Construction	Features	Typical application
20-015-00-00011		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.
20-015-00-00007		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.
20-015-00-00003		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.

For more information about LUMEL's products please visit our website: [www.lumel.com.pl](http://www.lumel.com.pl)

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