LUMEL

SEPARATOR
P20G TYPE

USER'S MANUAL

CE

Contents

1. APPLICATION

The P20G separator is destined to realize the galvanic separation of current and voltage analog signals. The output signal is galvanically isolated from the input signal and the supply.

One can also obtain in the separator the linear conversion of one kind of signal led to its input into a standard output signal of another kind.

The separator is fully configurable through the PD14 programmer. By means of this programmer, one can change the input type, output type, measurement averaging time and recalibrate the analog output according to the output individual characteristic, and also read out the measured value.

2. SEPARATOR SET

The set of the P20G separator is composed of:

1. P20G separator ..... 1 pc.
2. User's manual ..... 1 pc.
3. Guarantee card ..... 1 pc
4. Plug with screw terminals..... 2 pcs.
5. Hole plug of the programmer socket ..... 1 pc

When unpacking the transducer, please check whether the type and execution code on the data plate correspond to the order.

3. OPERATIONAL SAFETY

In the safety service scope, the transducer meets to requirements of the EN 61010-1 standard.

Observations Concerning the Operational Safety

- All operations concerning transport, installation, and commissioning as well as maintenance, must be carried out by qualified, skilled personnel, and national regulations for the prevention of accidents must be observed.
- Before switching the separator on, one must check the correctness of connections to the network.
- When connecting the supply, one must remember that a switch or a circuit-breaker should be installed in the building. This switch should be located near the device, easy accessible by the operator, and suitably marked as an element switching the separator off.
- Do not connect the separator to the network through an autotransformer.
- Before removing the separator casing, one must switch the supply off and disconnect measuring circuits.
- The removal of the separator casing during the guarantee contract period may cause its cancellation.
- The programmer socket is only use to connect the PD14 programmer. After the separator programming, one must insert the hole plug.
- Non-authorized removal of the housing, inappropriate use, incorrect installation or operation, creates the risk of injury to personnel or the separator damage.

For more detailed information, please study the User's Manual.

4. INSTALLATION

4.1. Fitting Way

P20G transducers are designed to be mounted on a 35 mm rail according to EN 60715.

Overall dimensions and fitting way are shown on the fig. 1.

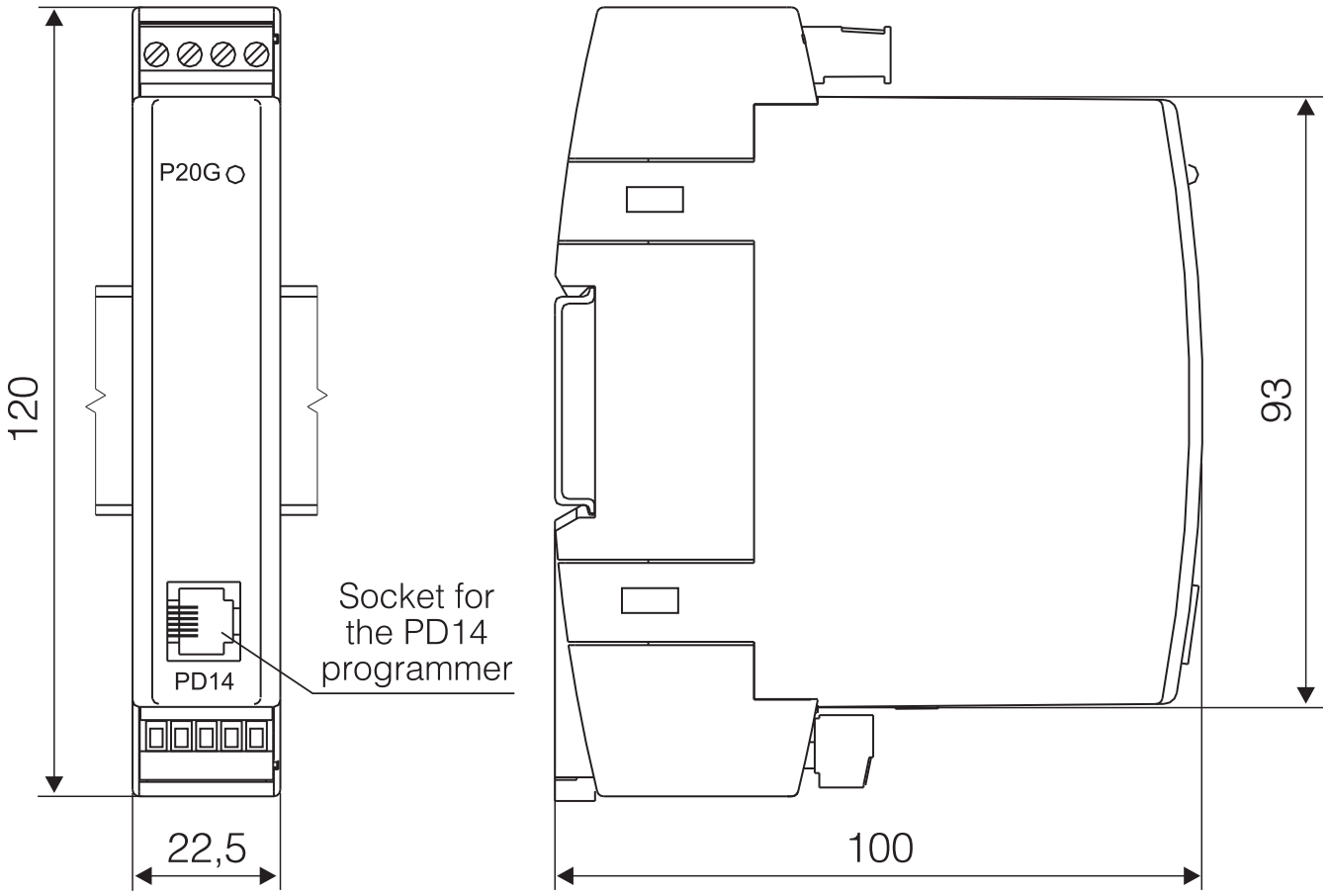


Fig. 1 Overall dimensions and the separator fitting way.

Separators should be mounted on the rail in direct contact with another devices that emit heat (eg transducer P20G). You must keep a minimum 5 mm distance between the devices to allow emit heat from the housings to the ambient. Otherwise, the in rated operating temperature of transducer which is in direct contact with the other transducer may exceed the rated operating temperature stated operating conditions.

4.2. External Connection Diagrams

The separator has two terminal strip sockets, which two plugs with terminal screws are connected to and enable the connection of external wires with 2.5 mm^2 cross-section (terminals 6-9) and 1.5 mm^2 cross-section (terminals 1-5).

For the connection of signal terminals, one must use shielded wires.

The way to connect external signals is shown on the fig.2

The electrical connection diagram is also situated on the separator casing.

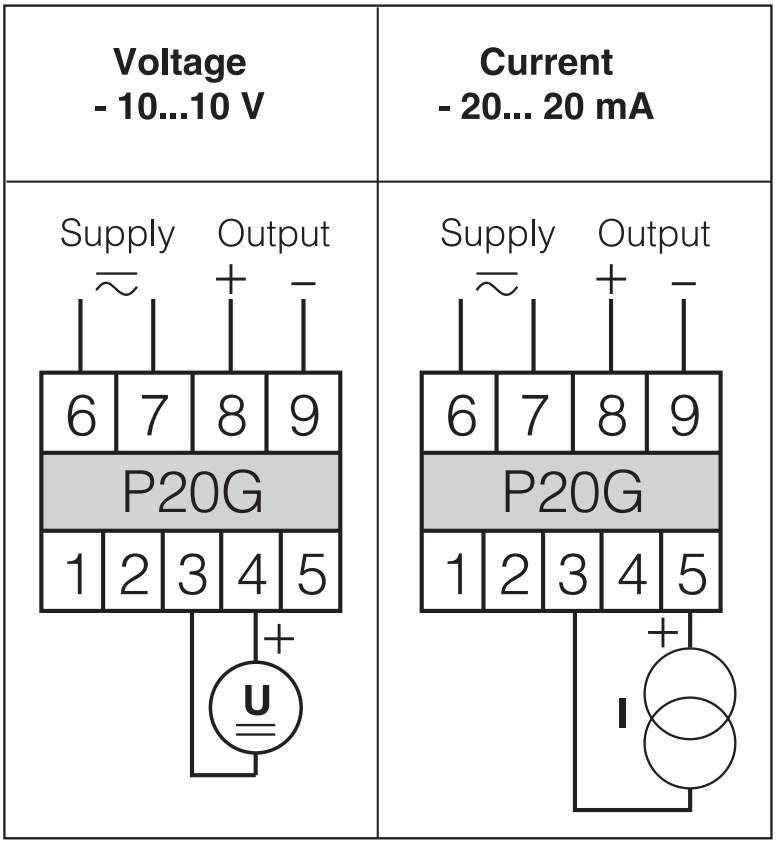
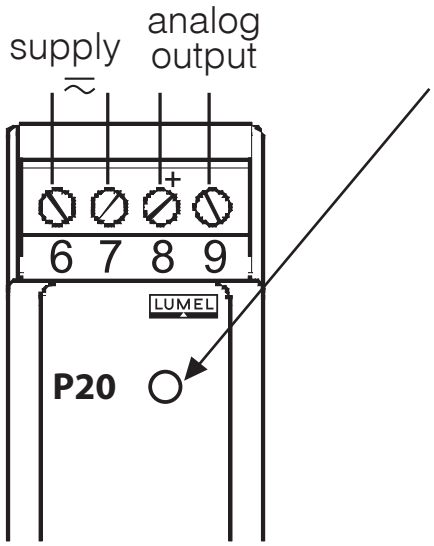


Fig. 2. Electrical connection diagrams of the P20G separator

5. SERVICE

After switching the separator on, the work state diode should light in red for a moment, next it should light in green.



Diode of the separator work state:

- the state diode lights in green – normal work,
- the state diode lights in red – improper work parameters; one must configure the transducer again,
- the state diode pulsates in red – lack of calibration or the non-volatile memory is damaged; one must return the transducer to the manufacturer.

Fig. 3. View of the P20G separator.

Confirmation of the separator's communication with PD14 programmer is indicated by the status diode which turns off for short period of time.

To configure P20G separator is designed LPCon software available on the web site: www.lumel.com.pl/.

6. TECHNICAL DATA

Basic parameters:

– analog output galvanicaly isolated:	
- current (max. range)	-20...20 mA
- voltage (max. range)	-10...10 V
- load resistance of the current output	≤ 500 Ω
- load resistance of the voltage output	≥ 500 Ω
– conversion class [1)]	0.2
– averaging time of the measurement	≥ 0.1 s
– power input	< 2 VA
– warm-up time of the separator	10 min
– response time of the separator	≥ 0.1 s

Rated operating conditions:

– supply depending on the version code	85...253 V a.c./d.c. 20...85 V d.c., 20...65 V a.c.
– frequency of the supply a.c. voltage	45...65 Hz
– ambient temperature	-20...23...55°C
– storage temperature	-25...85°C
– related air humidity	< 95% (inadmissible condensation of water vapour)
– operating position	any

Additional errors:

– from temperature changes	50% of class/10 K

Input parameters:

– resistance of voltage input [V]	> 1 MΩ
– resistance of current input [mA]	12 Ω ±1%

Sustained overload:

- voltage	1.2 X_n
- current	1.1 X_n

Short duration overload	5 X_n/3 s
Ensured protection grade acc. to EN 60529:	
- casing	IP 40
- from terminal side	IP 20
Dimensions	22.5 × 100 × 120 mm
Weight	0.125 kg
Fitting	on a 35 mm DIN rail, acc.to EN 60715
Electromagnetic Compatibility:	
- noise immunity	EN 61000-6-2
- noise emissions	EN 61000-6-4
Safety Requirements acc. to EN 61010-1 standard:	
- isolation between circuits	BASIC
- installation category	III
- pollution degree	2
- phase-to-earth operating voltage:	
- supply	300 V [2)]
- input	50 V
- output	50 V
- altitude above see level	< 2000 m

[1)] Guaranteed for a minimal width of output ranges: 16 mA or 5 V (see table 3)

[2)] Execution for 230 V supply voltage

Current standard editions are in the conformity declaration.

7. ORDER CODES

Order codes of the P20G separator Table 2

SEPARATOR P20G -	XX	XX	X	XX	X	X

Kind of programmed input:
see table 3 ..... **XX**

Kind of programmed output:
see table 3 ..... **XX**

Supply:
85...253 V a.c./d.c. **1**
20...85 V d.c., 20...65 V a.c. **2**

Version:
standard **00**
non-standard settngs ..... **NS**
custom-made* ..... **XX**

Language:
Polish ..... **P**
English ..... **E**
other* ..... **X**

Acceptance Tests:
without extra quality requirements **0**
with an extra quality inspection certificate **1**
acc. to customer's requirements* ..... **X**

* after agreeing with the Manufacturer

Coding of input and output of the P20G separator Table 3

Range	Input code	Output code
0...1 V	01	01 [1)]
0...5 V	02	02
0...10 V	03	03
± 1 V	04	04 [1)]
± 5 V	05	05
± 10 V	06	06
0...5 mA	07	07 [1)]
0...20 mA	08	08
± 5 mA	09	09 [1)]
± 20 mA	10	10
4...20 mA	11	11
Custom-made execution	XX	XX

[1)] Conversion class > 0,2

When ordering, please respect successive code numbers.

Example of Order:

The code: **P20G - 06 06 1 00 E 1** means:

P20G – Separator of P20G type in standard execution,
06 – Kind of programmed input voltage (-10...10 V),
06 – Kind of programmed output voltage (-10...10 V),
1 – Supply: 85...253 V a.c./d.c.,
00 – standard version
E – English language
1 – with an extra quality inspection certificate

8. MAINTENANCE AND GUARANTEE

The P20G separator does not require any periodical maintenance.

In case of some incorrect operations:

From the Shipping During the Period Given in the Annexed Guarantee Card:

One should return the separator to the Manufacturer's Quality Inspection Dept.

If the instrument has been used in compliance with the instructions, we guarantee to repair it free of charge.

The disassembling of the casing may cause the cancellation of the granted guarantee.

After the Guarantee Period:

One should turn over the separator to repair it in a certified service workshop.

Spare parts are available for the period of five years from the date of purchase.

Our policy is one of continuous improvement and we reserve the right to make changes in design and specifications of any products as engineering advances or necessity requires and revise the above specifications without notice.

P20G-09A

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