

**LUMEL**

# SEPARATOR P20G TYPE



**USER'S MANUAL**

**CE**



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## 1. APPLICATION

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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

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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

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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.

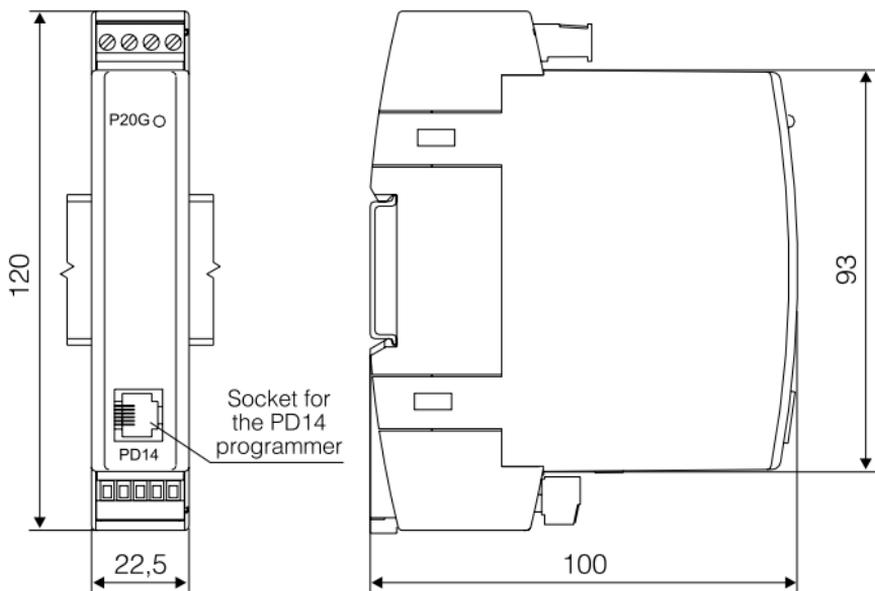
## 4. INSTALLATION

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### 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.*

### 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<sup>2</sup> cross-section (terminals 6-9) and 1.5 mm<sup>2</sup> 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.

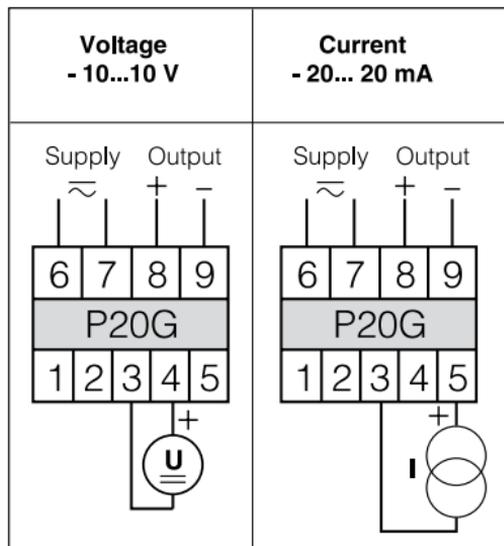


Fig. 2. Electrical connection diagrams of the P20G separator

## 5. TECHNICAL DATA

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### Basic parameters:

- analog output galvanically isolated:
  - current (max. range) -20...20 mA
  - voltage (max. range) -10...10 V
  - load resistance of the current output  $\leq 500 \Omega$
  - load resistance of the voltage output  $\geq 500 \Omega$
- conversion class<sup>1)</sup> 0.2
- averaging time of the measurement  $\geq 0.1$  s
- power input < 4 VA
- warm-up time of the separator 10 min
- response time of the separator  $\geq 0.1$  s

### Rated operating conditions:

- supply depending on the version code
  - 85...253 V a.c./d.c.
  - 20...40 V a.c./d.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 M  $\Omega$
- resistance of current input [mA] 12  $\Omega \pm 1\%$

### Sustained overload:

- voltage 1.2 X<sub>n</sub>
- current 1.1 X<sub>n</sub>

<b>Short duration overload</b>	5 X <sub>n</sub> /3 s
<b>Ensured protection grade acc. to EN 60529:</b>	
- casing	IP 40
- from terminal side	IP 20
<b>Dimensions</b>	22.5 × 100 × 120 mm
<b>Weight</b>	0.125 kg
<b>Fitting</b>	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 <sup>2)</sup>
- input	50 V
- output	50 V
- altitude above sea level	< 2000 m

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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.

## 6. ORDER CODES

Order codes of the P20G separator

Table 2

<b>SEPARATOR P20G -</b>	<b>XX</b>	<b>XX</b>	<b>X</b>	<b>XX</b>	<b>X</b>	<b>X</b>
<b>Kind of programmed input:</b>						
see table 3.....	<b>XX</b>					
<b>Kind of programmed output:</b>						
see table 3.....		<b>XX</b>				
<b>Supply:</b>						
85...253 V a.c./d.c. ....				<b>1</b>		
20...40 V a.c./d.c. ....				<b>2</b>		
<b>Version:</b>						
standard .....						<b>00</b>
non-standard settings .....						<b>NS</b>
custom-made* .....						<b>XX</b>
<b>Language:</b>						
Polish .....						<b>P</b>
English .....						<b>E</b>
other* .....						<b>X</b>
<b>Acceptance Tests:</b>						
without extra quality requirements .....						<b>0</b>
with an extra quality inspection certificate .....						<b>1</b>
acc. to customer's requirements* .....						<b>X</b>

\* after agreeing with the Manufacturer

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

<sup>1)</sup> 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

## 7. MAINTENANCE AND GUARANTEE

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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.**





## SALES PROGRAM

- DIGITAL AND BARGRAPH PANEL METERS
- MEASURING TRANSDUCERS
- ANALOG PANEL METERS (DIN INSTRUMENTS)
- ANALOG AND DIGITAL CLAMP-ON METERS
- PROCESS AND POWER CONTROLLERS
- CHART AND PAPERLESS RECORDERS
- 1-PHASE AND 3-PHASE WATT-HOUR METERS
- NUMERICAL AND ALPHANUMERICAL LARGE SIZE DISPLAYS
- ACCESSORIES FOR MEASURING INSTRUMENTS (SHUNTS AND MODULES)
- MEASURING SYSTEMS (ENERGY, HEAT, CONTROL)
- CUSTOM-MADE ELECTRONIC SUB-ASSEMBLIES ACC. TO ORDERS

## MEASUREMENT CONTROL RECORDING ANALYSIS

### WE ALSO OFFER OUR SERVICES IN THE PRODUCTION OF:

- ALUMINIUM ALLOY PRESSURE CASTINGS
- PRECISION ENGINEERING AND THERMOPLASTICS PARTS
- PRESSURE CASTING DIES AND OTHER TOOLS
- CUSTOM-MADE ELECTRONIC SUB-ASSEMBLIES

### QUALITY PROCEDURES:

ACCORDING TO ISO 9001 AND ISO 14001 INTERNATIONAL REQUIREMENTS.

ALL OUR INSTRUMENTS HAVE CE MARK.

FOR MORE INFORMATION, PLEASE WRITE TO OR PHONE OUR EXPORT DEPARTMENT

P20G-07



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