

# Electronic potentiometers

Type EP-Q96

4921240020D

## REPLACEMENT



- *Replace normal motor potentiometers*
- *Setting of integrating time (like variable gearboxes)*
- *Adjustment of output signal*
- *Offset adjustment*
- *Manual/auto switch*
- *Flush mounting*
- *Control of electronic speed governors*

## Application/function

The EP-Q96 is an electronic unit to replace normal motor potentiometers. It contains no moveable parts and is thus maintenance-free. The EP-Q96 is CE marked for residential, commercial and light industry plus industrial environment.

The EP-Q96 converts the relay output of a PI step controller to a control voltage for the electronic speed governor. Due to the digital construction offset drift during manual load sharing between the diesel generators is avoided. In case of supply voltage drop-out, the potentiometer is automatically reset after reconnection of the supply voltage. The signal from the electronic potentiometer is shunted internally by means of a 500Ω potentiometer, resulting in the output signals shown below. Switch on the front for change of mode of operation:

**Automatic:** The speed is controlled by signals fed via electrical switches, e.g. by the DEIF diesel generator controller type DGC-1T and/or a DEIF synchronising relay type FAS.

**Manual:** The speed is controlled upwards/downwards by activating the 2 push-buttons marked "▲+" and "▼-" respectively.

## Potentiometer adjustments

**Integrating time:** To be set within the range: 2.5...25 s (jumper set to "x1") or 12.5...125 s (jumper set to "x5") - like variable gearboxes.

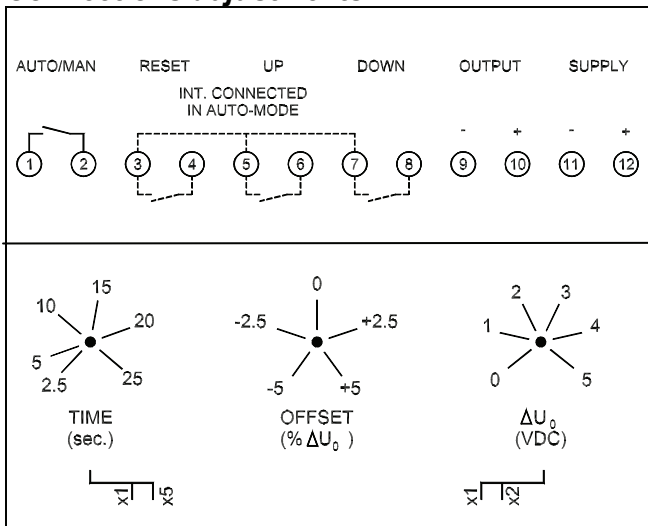
**Output:** To be set within the range: 0...±5V DC (jumper set to "x1") or 0...±10V DC (jumper set to "x2").

**Offset:** -5...0...+5% of  $\Delta U_{out}$ , used to change the point where the control loop starts and to which the unit returns after reset - needed to operate together with some types of speed governors.

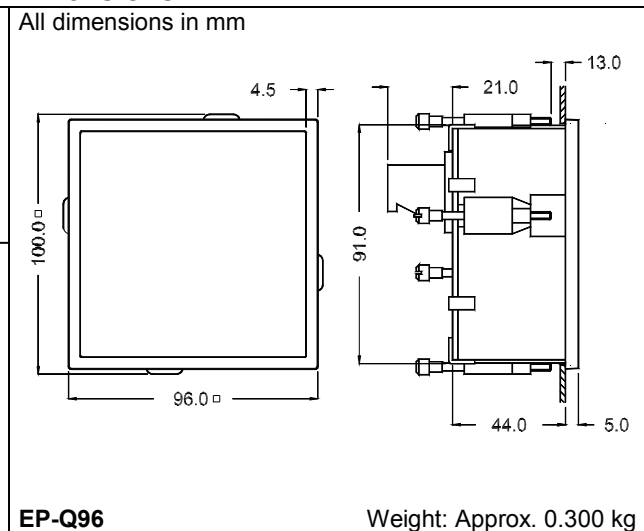
## Technical specifications

Accuracy of adjustment	±20%
Output (2 ranges)	0...±5V or 0...±10V (without load)
Offset adjustment	±5% of $\Delta U_{out}$
Ripple	Max. 5mV RMS
Resolution	5mV DC (12-bit D/A-converter)
Integrating time (2 ranges)	2.5...25 s or 12.5...125 s (0...±100% output)
Response time	<0.1 s
Supply voltage	24V DC -25/+30%
Temperature	-10...55°C (nominal), -25...70°C (operating), -40...70°C (storage)
Galvanic separation	Between supply voltage and remaining circuits: 2kV - 50Hz - 1 min. None between input/output
Climate:	Class HSE, to DIN 40040
EMC	To EN 50081-1/2 and EN 50082-1/2
Materials	Self-extinguishing plastic (polycarbonate), to UL94 (V0)
Terminals	Max. 2.5 mm <sup>2</sup> , insulated screw terminals
Protection	IP52 (panel front), IP20 (panel rear). To IEC 529 and EN 60529

## Connections/adjustments



## Dimensions



## Order specifications

<b>EP-Q96</b>	<b>24V DC</b>
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Due to our continuous development we reserve the right to supply equipment which may vary from the described.



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