Digital positioner DSR500

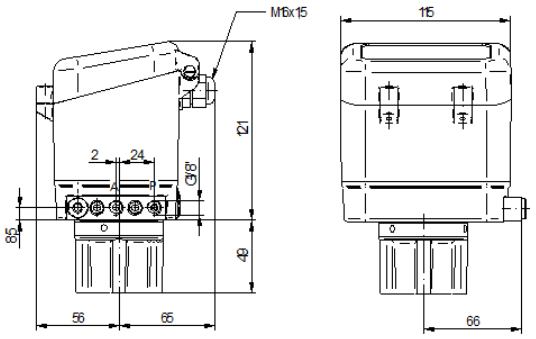
General

Pneumatically operated valves are used increasingly not only as open/close valves, but are controlled by external analog command variables.

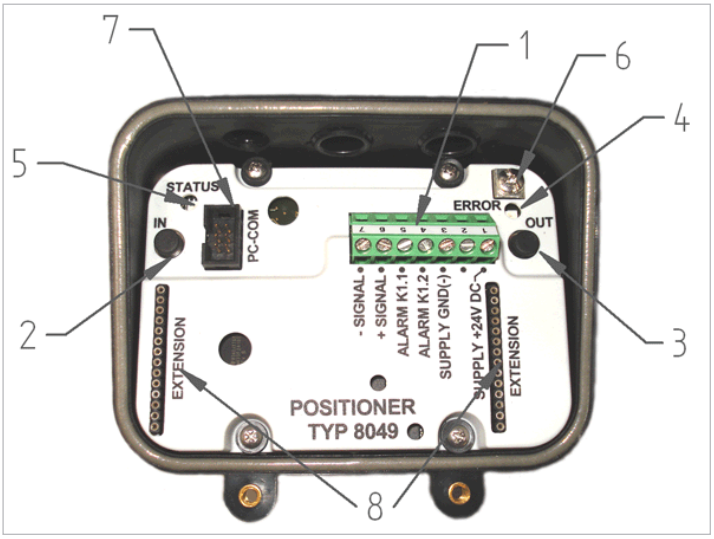
- Mounting on pneumatic actuators (function FC)
- Stroke and rotary actuators
- Nominal stroke 3 -28 mm
- Self-learning
- Control signal 4 -20 mA
- 24 V DC

Technical data		
Control signal	4 – 20 mA	
	2 –10 V	
Auxiliary energy, electric	24 VDC +/- 10 %	
Auxiliary energy, pneumatic	3 – 6 bar	
Stroke range type 500-1 Type 500-2 Type 500-3	3 – 25 mm, (DN15 – DN50) 9 – 50 mm, (DN65 – DN150) Rotary actuator up to 90°	
Mounting on control device	Via standardized mounting kit, if required also with optical indicator	
Adjustment of stroke and zero point	Self-learning	
Output (at 6 bar supply air)	30 Nl/min. 100 Nl/min.	
Air consumption	None	
Allowable ambient temperature	-10 to +75 °C	
Protection rating according to DIN 40050	IP65	
Function	For single-acting pneumatic stroke actuators (FC) and rotary actuators (FC). For pneumatic actuators function FO only possible with factory mounting.	
Material	Housing	PA 6.6 polyamide, fiberglass reinforced
	Base plate	Aluminum, black anodized

Dimensions



Type	H (mm)
Stroke actuators with add-on kits without inspection glass Type DSR 500-1/500-2	0
Stroke actuators with add-on kits without inspection glass Type DSR500-1/ -2	41
Rotary actuator with add-on kit ISO Type DSR500-3	20/30 Depending on actuator size



① Terminal strip
② Button **In**
③ Button **Out**
④ LED red
⑤ LED run
⑥ Function ground/shield
⑦ Interface connection
⑧ Slots for auxiliary module

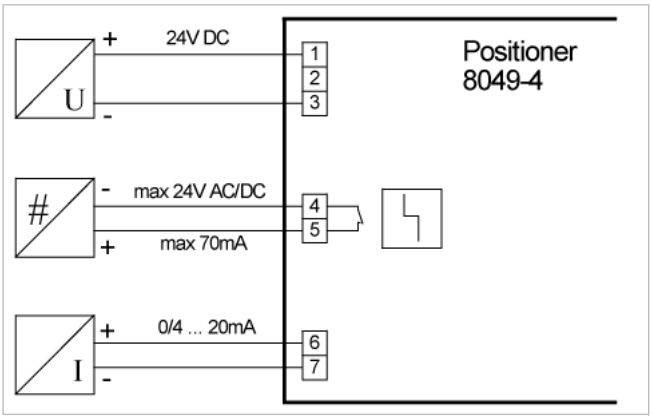
Connections

Pneumatics: supply air pressure

Connect the supply air with connection P (G⅛"). The supply air pressure has to correspond at least to the value that is stated on the type plate, and must not exceed 6 bar. The supply air requires filtering of at least 5 – 10 µm.

Electrical: electrical connections

For the electrical connection of the control signal line (set-point), a twisted cable is recommended. The connection of the supply voltage should be made using a second, separate cable. Also, the system should be grounded (grounding connection on the board). After removing the cover on the positioner, the screw terminals for the individual connections can be accessed (see also wiring diagram).



The positioner requires an external power supply (24 V DC screened, ripple 10 % max.). The current consumption is a maximum of 300 mA.

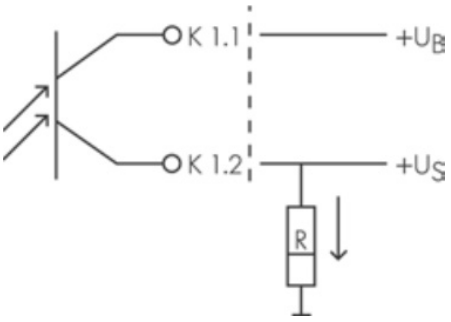
In the standard version a current signal of 4 – 20 mA is to be applied as a actuating signal.

The controller can also be configured to other actuating signals in the range 0 – 20 mA. The burden voltage is a maximum of 2.5 V.

Error message output

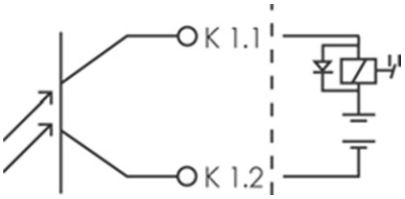
If necessary, the failure signal (terminals K1.1 and K1.2) can be used to analyze the valve function. The failure signal is activated if the positioner is not able to comply the actual value (stroke) with the set value (control signal); for example if there is no or too low supply air pressure. In this case, the LED on the connector board lights up.

Direct wiring



Us	Signal voltage
No malfunction	Low signal
Malfunction	0.5 Hz impulses

Max. supply voltage: U



B, max	24 V DC
External load R:	E.g. 470 Ω
Signal current (max.)	$I_{s,max}$ = 70 mA

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