

DMS1.1(S) / DM1.1(S) / DML1.1(S) / DMG1.1(S)  
Proportional Actuators AC/DC 24 V**Application**

The electric damper actuator series is designed to operate air dampers in ventilation and air conditioning systems.

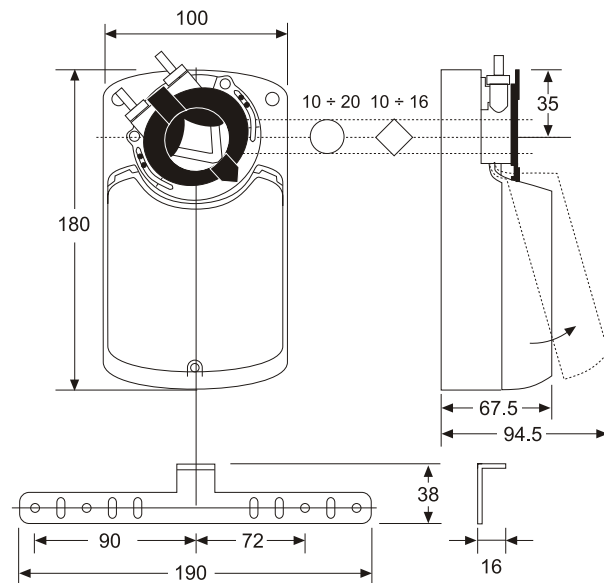
The compact design and universal adapter fitted with limitation of rotation angle make this actuator highly versatile.

**Features**

- DC 0(2)...10 V or 0(4)...20 mA control signal
- Working area adjustable
- Load-independent running time
- Up to 5 actuators in parallel operation possible
- Plug-in terminal block connection
- Simple direct-mount with universal adapter on 10...20 mm Ø round-axis or 10...16 mm square shaft
- 48 mm minimum damper shaft length
- Selectable direction of rotation
- Limitation of rotation angle
- Manual release button
- 2 adjustable auxiliary switches
- Automatic shut-off at end position (overload switch)
- Actuators available with 1 m cable

**Accessories**

- ZK Damper linkage selection
- ZKG Ball joints



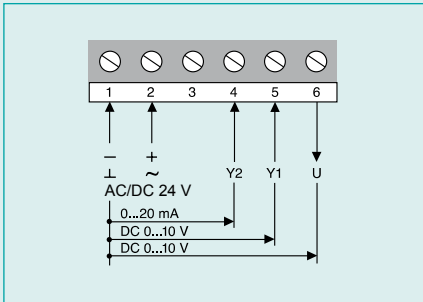
Dimensions in mm

**Ordering Codes**

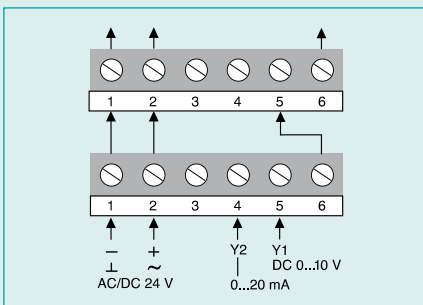
Codes	Descriptions
DMxx1.1	AC/DC 24 V
DMxx1.1.S	AC/DC 24 V, with 2 auxiliary switches

**DMS1.1(S) / DM1.1(S) / DML1.1(S) / DMG1.1(S)**  
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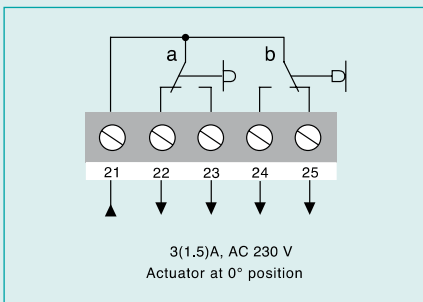
**Wiring Diagram**



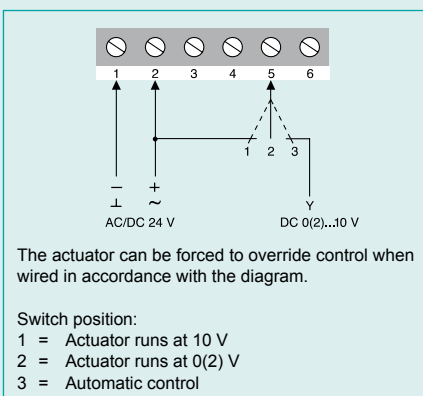
**Parallel Connections**



**Auxiliary Switches (S)**



**Override Control**

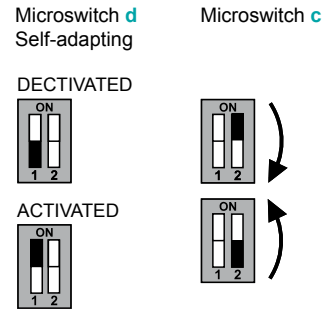


**Setting the control Signal**

Control signal Y1 DC 0...10 V  
Input resistance Ri 250 kΩ

Control signal Y2 0...20 mA  
Input resistance Ri 388 Ω

Position signal U DC 0...10 V  
Load resistance > 50 kΩ



By switching microswitch **d** to ON position, the control signal Y1 or Y2 will be adapted to the chosen angle of rotation.

By switching microswitch **c** the direction of rotation can be changed.

**Setting Span and OFFSET**

The potentiometers **O** and **S** help to match control signals Y1 and Y2 to any make of controller.

**Example 1**

Control signal Y1 working between DC 2...10 V  
Setting: Starting point **O = 2**  
working range **S = 8**

**Example 2**

Control signal Y2 working between 6...18 mA  
Setting: Starting point **O = 3**  
Working range **S = 6**

**Start point O**

	<b>Scale O</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
	for Y1 (VDC)	0	1	2	3	4	5	6	7	8
	for Y2 (mA)	0	2	4	6	8	10	12	14	16

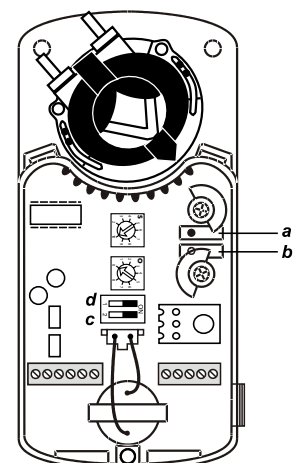
**Working range S**

	<b>Scale S</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
	for Y1 (VDC)	2	3	4	5	6	7	8	9	10
	for Y2 (mA)	4	6	8	10	12	14	16	18	20

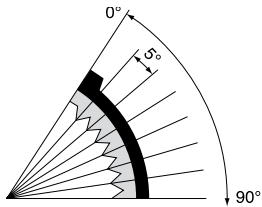
**Settings the auxiliary switches**

Factory setting  
Switch **a** at 10°  
Switch **b** at 80°

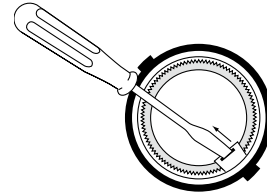
The switching position can be manually changed to any required position by turning the ratchet.



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**Limitation of Rotation Angle**


The limitation of rotation angle can be set in 5° steps by moving the adapter.

**Adapter release**


The adapter can be removed simply by pressing the adapter clip on the underside of the actuator.

**Technical Specifications**

Actuator	DMS1.1(S)	DM1.1(S)	DML1.1(S)	DMG1.1(S)
Torque	8 Nm	16 Nm	24 Nm	24 Nm
Damper area*	1.5 m <sup>2</sup>	3.0 m <sup>2</sup>	4.5 m <sup>2</sup>	6 m <sup>2</sup>
Running Time	30 s	80 s	125 s	200 s
Independent of load, at nominal conditions and room temperature				
Supply Voltage	AC/DC 24 V ±20% / DC ±10%			
Frequency	50-60 Hz			
Power Consumption				
- Operating	2.5 W			
- At end position	0.3 W			
For wire sizing	6.0 VA / 3.6 A @ 2 ms			
Control Signal	adjustable			
	Y1	DC 0... 10 V / Ri 250 Ω		
	Y2	0...20 mA / Ri 388 Ω		
Position Signal	U	DC 0...10 V / R > 50 kΩ		
Angle of rotation				
- Working range	90° (93° mech.)			
- Limiting	5°...85° in 5° < steps			
Auxiliary Switch rating	3(1.5) A, AC 230 V			
Life time	60.000 rotations			
Sound power level	45 dB (A)			
Protection Class	II			
Degree of Protection	IP 54			
Mode of Action	Type 1			
Ambient conditions				
- Operating temperature	-20...+50 °C			
- Storage temperature	-30...+60°C			
- Humidity	5...95% RH not condensing			
Weight	1.1 Kg			
Service	Maintenance-free			
<b>CE</b> Compliance	Johnson Controls, Inc., declares that these products are in compliance with the essential requirements and other relevant provisions of the EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC.			

\*Caution: Please note damper manufacturer's information concerning the open/close torque.

**Building Efficiency**

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