

AR30 W22S, W23S: Motor drive with positioner

How energy efficiency is improved

Electric cut-off in end position to save energy.

Areas of application

Actuation of regulating units, such as air dampers, mixers, butterfly valves, etc. For controllers with a continuous output (0...10 V oder 4...20 mA).

Features

- Torque 15 Nm
- Synchronous motor with limit switch and integrated positioner
- Maintenance-free gearbox
- Controlling the regulating unit to be actuated in any intermediate position
- Rotation angle min. 30° to max. 320°
- Direction of travel can be selected with switch

Technical description

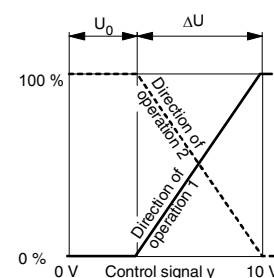
- Maximum torque and holding torque is 15 Nm
- Cast light alloy housing
- Cover made of transparent, self-extinguishing thermoplastic
- Electrical connections (max. 1.5 mm²) with screw terminals
- Cable clamping sleeve M20 x 1.5
- Depending on the model, the running time for 90° rotation angle is 60 or 120 s



T04233



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Type	Running time for 90° s	Torque Nm	Holding torque Nm	Voltage	Weight kg
AR30 W22S F020	60	15	15	24 V~	1,1
AR30 W23S F020	120	15	15	24 V~	1,1

Positioner:			
Control signal		Setting range	
0...10 V	$R_i \geq 30 \text{ k}\Omega$	Starting point U_0	0,4...9,1 V
0...20 mA	$R_i \geq 50 \Omega$	Control span ΔU	1...10 V
Positional feedback		Switching range X_{Sh}	4% of ΔU
0...10 V	max. load $\geq 2,5 \text{ k}\Omega$		
0...620 mV	max. load $\geq 100 \text{ k}\Omega$		
Power supply 24 V~	$\pm 20\%$, 50 Hz	Permissible ambient temp.	-5...60 °C
Power consumption		Permissible amb. humidity	< 95 %rh
running	approx. 5,1 W	Degree of protection ³⁾	IP 55 (EN 60529)
standstill	approx. 0,7 VA	Upside down	IP 54 (EN 60529)
Permissible damper area ¹⁾	5 m ²	Wiring diagram	A04311
Angle of rotation ²⁾	90°	Dimension drawing	M04307
		Fitting instructions	MV 505334

Accessories

- 0188813 000*** Ball-joint for lever
- 0294148 000*** Fixing bracket for wall mounting.
- 0294967 000*** Pivot pin for lever
- 0370059 000*** Clamp-on lever (can be used only in conjunction with 0370819)
- 0370774 001** Handle for manual adjustment.
- 0370785 001** Position indicator, MV 505329
- 0370819 000*** Flat-sided hub (can be used only in conjunction with 0370059)
- 0372460 001** Cable screw fitting (plastic M20x1,5) incl. locking nut and gasket, max. 2 pcs.

^{*}) Dimension drawing or wiring diagram are available under the same number

1) Recommended value for equal-sided, smooth-action air dampers.

2) Angle of rotation of drive shaft is 90° (factory setting). Can be changed to 180° by reversing the cogs and adjusting the end switches (see MV 505335).

3) Degree of protection IP 55 with cable screw fitting (M20x1,5)

Operation

The integrated positioner activates the servo-motor in relation to the control output signal y . The direction of operation can be changed via plug S2. Direction of operation 2 (factory setting): the drive shaft turns in an anti-clockwise direction (as viewed from the drive towards the shaft). The starting point U_0 and control span ΔU are variable. The motor cuts out in both end positions on activating the limit switches.

Plug S4 allows a choice of position feedback signal.

Plug S5 allows a choice of control signal.

Priority circuit: the final control element can be moved to any position by applying power to terminals 2 and 45 (or 46). The drive shaft turns in an anti-clockwise direction (as viewed from the drive towards the shaft) when power is at terminal 46.

Engineering and fitting notes

To change over from angle of rotation 90° to 180°, the two cogs must be transposed and the end switches adjusted. The end contacts and auxiliary change-over contacts are set centrally on the switch tower which is mechanically linked directly to the drive shaft (see MV 505335).

The earthing terminal is in the light-alloy housing. The drive is fixed by threaded holes on the drive-shaft side (either four M5 holes as on the AR30 W1, or three M6 holes as on the A44 W). The drive can be fitted in any position.

Fitting outdoors. If the devices are fitted outdoors, we recommend that additional measures be taken to protect them against the effects of the weather.

Additional technical details

Power consumption at 60 Hz at a standstill	5,4 W 0,7 VA	Complies with:- EMC directive 2004/108/EC EN 61000-6-1/ EN 61000-6-3 EN 61000-6-4
Transport and storage temp.	-30...70 °C	
Operating time	100%	

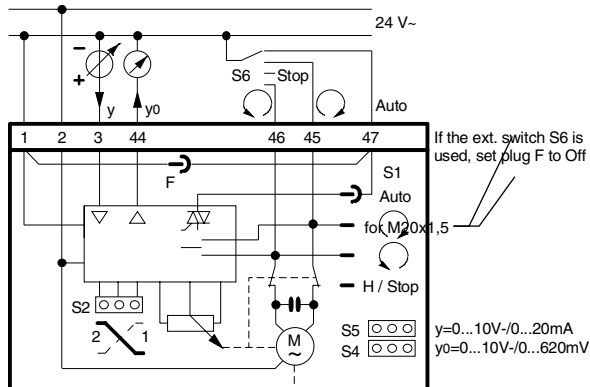
Further information

The drive requires no maintenance, since the motor and gears are permanently lubricated.

Manual adjustment with lever (accessory) for 90°:-

AR 30 W 21	34 rotations
AR 30 W 22	14 rotations
AR 30 W 23	29 rotations

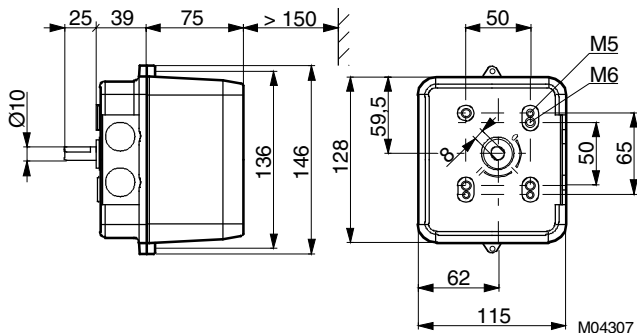
Wiring diagram



Anti-clockwise direction when direction of operation is 2 and y is rising (viewed from the drive towards the final control element)

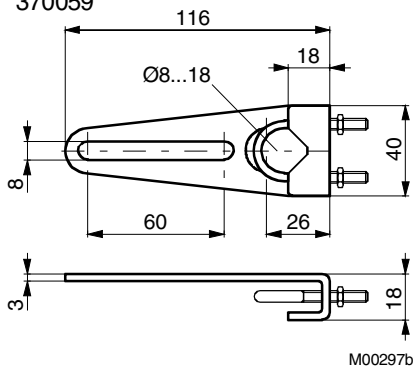
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Dimension drawing

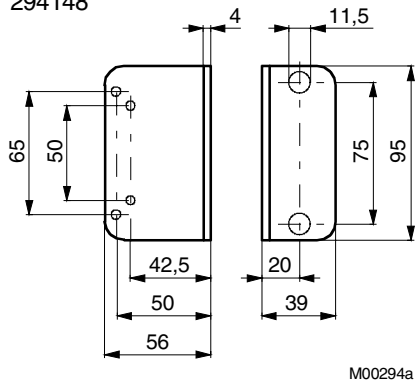


Accessories

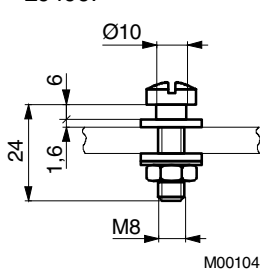
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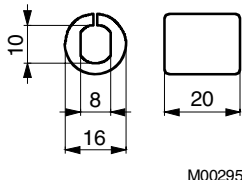
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370819



188813

