

AR30 W21...23: Motor drive

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 switching output (3-point control).

Features

- Torque 15 Nm
- Synchronous motor with limit switch
- Maintenance-free gearbox
- Controlling the regulating unit to be actuated in any intermediate position
- Rotation angle min. 30° to max. 320°

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 M20x1.5
- Depending on the model, the running time for 90° rotation angle is 30, 60 or 120 sec.



T04233



Y07551

Type	Running time for 90° s	Torque Nm	Holding torque Nm	Voltage	Weight kg
AR30 W21 F001	30	15	15	230 V~	1,1
AR30 W21 F020	30	15	15	24 V~	1,1
AR30 W22 F001	60	15	15	230 V~	1,1
AR30 W22 F020	60	15	15	24 V~	1,1
AR30 W23 F001	120	15	15	230 V~	1,1
AR30 W23 F020	120	15	15	24 V~	1,1

Power supply	230 V~ ± 15%, 50...60 Hz	Permissible ambient temp.	–20...60 °C
Power supply	24 V~ ± 20%, 50...60 Hz		Permissible ambient humidity
Power consumption	230 V~ 3,7 VA	Degree of protection ³⁾	IP 55 (EN 60529)
	24 V~ 4,8 VA		Upside down
Permissible damper area ¹⁾	5 m ²	Wiring diagram	A01348
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)
- 0370772 001*** Two auxiliary change-over contacts ⁴⁾, max. rating 10 (2) A, 250 V~; fitted as per MV 505343.
- 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.

Potentiometer kit, 1 W, fitted as per MV 505335

Set of cogs (0370644) according to angle of rotation of end shaft

0370780 001* Potentiometer 2000 Ω

0370781 001* Potentiometer 130/2000 Ω

0370644 001 Set of cogs for angle of rotation 90 or 180°, with coupling

0370644 002 Set of cogs for angle of rotation 120 or 150°, with coupling

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

1) Recommended value for equal-sided, smooth-action air dampers, for AR30 W21, damper surface area = 4 m²

2) Angle of rotation of the drive shaft can be set between 30 and 320° via switching cams (any starting point). If fitted, note the potentiometer's angle of rotation.

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

4) The switching cam 180° ON or 180° OFF can be positioned anywhere in the whole 360° angle of rotation

Operation

By applying power to terminals 1 and 2 (or 1 and 3), the final control element can be moved to any position. The drive shaft turns in an anti-clockwise direction (as viewed from the drive towards the shaft) if power is applied to terminal 2. The reversible synchronous motor cuts out in both end positions on activating limit switches.

Engineering and fitting notes

Maximum internal equipment: two end change-over switches (standard), two auxiliary change-over contacts plus one double potentiometer.

The drive shaft's angle of rotation is fully variable between 30° and 320° via switching cams. If a potentiometer is fitted, the drive shaft's angle of rotation depends on the set of cogs selected; therefore, allowance must be made for this when setting the end switches.

The end contacts and auxiliary change-over contacts are set centrally on the switch tower which is mechanically linked directly to the drive shaft.

The connections for the auxiliary functions are made via screw terminals (max. 1,5 mm²) on the front plate; 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 230 V~ 4,2 VA 24 V~ 5,4 VA	Transport and storage temp. -30...70 °C Operating time 100%
Complies with:- Directive 2006/95/EC EN 60730-1/ EN 60730-2-14 EMC directive 2004/108/EC EN 61000-6-1/ EN 61000-6-2 EN 61000-6-3/ EN 61000-6-4	Complies with:- EMC directive 2004/108/EC EN 61000-6-1/ EN 61000-6-2 EN 61000-6-3/ EN 61000-6-4

Additional details on accessories

0370772 001 (Two aux. contacts) min. loading: 100 mA, 24 V~

Accessories for potentiometer

0370780 . . . Single potentiometer 1 W

0370781 . . . Double potentiometer 1 W
(fitted as per MV 505335)

Accessories 0370644 . . .

Set of cogs (fitted
as per MV 505335)

/...	single Ω	double Ω	/...	single	double Ω
/001	2000	130/2000	/008	–	130/130
/002	130	2000/2000	/009	–	130/500
/003	100	100/100	/010	–	130/1000
/004	200	1000/1000	/011	–	130/5000
/005	500	200/200	/012	–	130/10000
/006	1000	130/140	/013	–	1000/2000
/007	–	130/200	–	–	–

/...	angle
/001	90/180
/002	120/150
/003	135
/004	270
/005	320

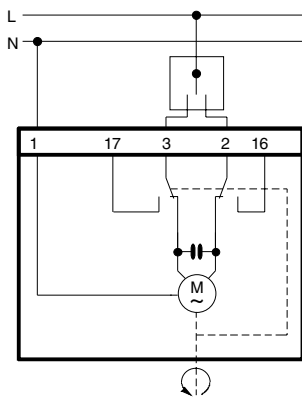
Additional information

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

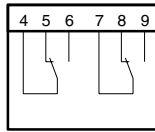
Wiring diagram



Anti-clockwise direction when power is at 2 (viewed from the drive towards the final control element)

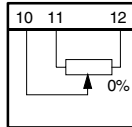
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370772/001



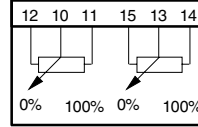
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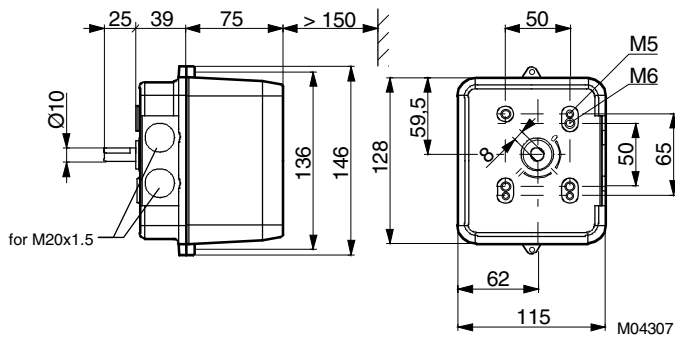
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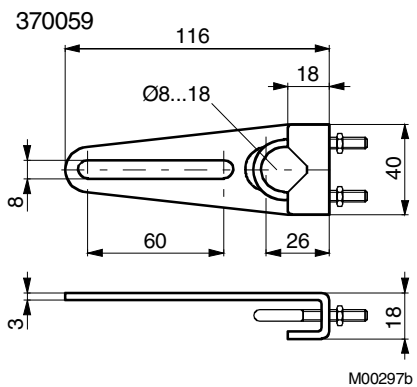
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Dimension drawing



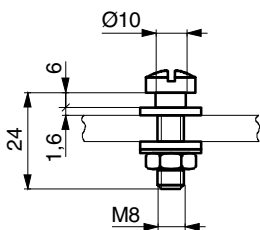
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Accessories



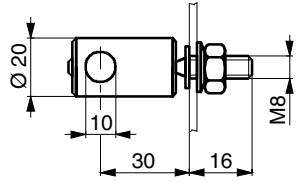
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294967



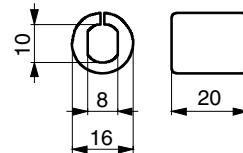
M00104

188813



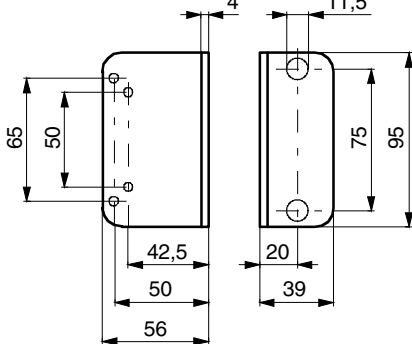
M00296

370819



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294148



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