

AST-320 FAST INDUSTRIAL ACTUATOR

- Industrial heavy duty electric actuator
- 24VAC synchronous motor non overlaodable
- Two adjustable end switches for motor drive
- Two adjustable end switches for application
- Completely enclosed protection to IP65
- Two IP65 cable gland entries
- Rotation adjustable from 0..360°
- Factory set to 0..90° and poti to ~3.125 kΩ
- Three point control function open-off-closed.
- Rotation speed 15s for 0..90°
- Torque 20Nm continuously rotating
- CMR standard 24 month warranty
- 30 Years field application experience

The AST-320 motor has been designed for industrial ventilation applications. The protection class is IP65 and it can be installed on the roof in open air where it is exposed to all kinds of weather conditions or in industrial factories where there is a harsh environment such as power stations, metal melting plants or nuclear and critical research laboratories.

It has an 8mm square output shaft which will fit directly onto the CMR square or rectangular dampers with gear drive or the round PPs chemical resistant valves and the galvanised or stainless steel valves. CMR manufactures all the associated mounting brackets also to suit specific custom applications. The motors are best used with the CMR dampers as the rotating shaft and gear mechanism on the damper must be able to withstand very fast small open and closed commands under automatic control.

The actuator has a synchronous motor in 24VAC which has the advantage that it cannot be overloaded and therefore cannot burn out. The ampere drawn by the motor will never go higher than the nominal current, which means it can be used for 100% operational cycle. There are two adjustable end switches to limit the drive to an open and closed position. There are two additional adjustable end switches with volt free contacts to signal the control system an open or closed position.

There is a rotating position indicator under a window which is adjustable during commissioning. A 5kΩ potentiometer is fitted to the same drive mechanism which provides a resistance change. It is factory set to be ~2.5kΩ at 45° or ~3.125kΩ at full ccw (counter clock wise) position or ~1.875kΩ at full cw (clock wise) position.

A manual over-ride clutch mechanism can be operated with a lever which is supplied on a recess of the lid. The lever can be inserted into the top manual rotating shaft by removing a protection cap. The lever lifts the shaft and disengages the gear drive to the application. It can be rotated manually to any position. The power should be isolated before using the manual handle as otherwise the motor drives back to the control position. This function should only be used in a controlled maintenance condition.

When there is a power failure, the motor shall remain in its last position. It has no fail safe spring return action. There is no electronic in the actuator and the only adjustments are the end switches and potentiometer during commissioning and it will be set for life maintenance free.

A 1.5m long 10 core cable is factory fitted and terminated in a connection box. There are three cores for the motor - three cores for the potentiometer and 2 cores for each end switch. The motors are factory tested and pre-set to a standard position.



AST320 IP65 actuator with manual override

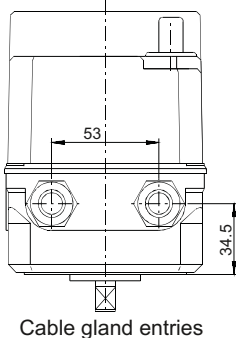
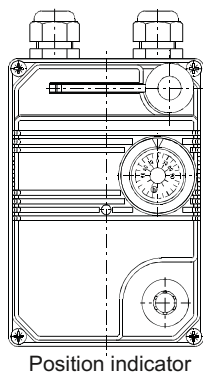
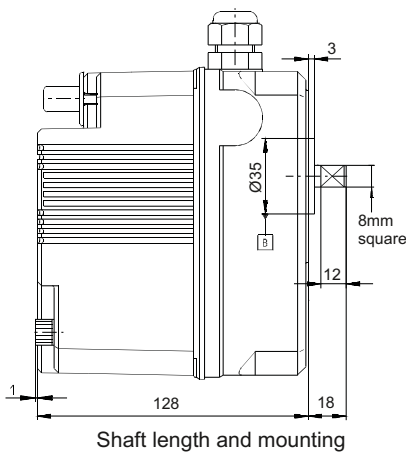
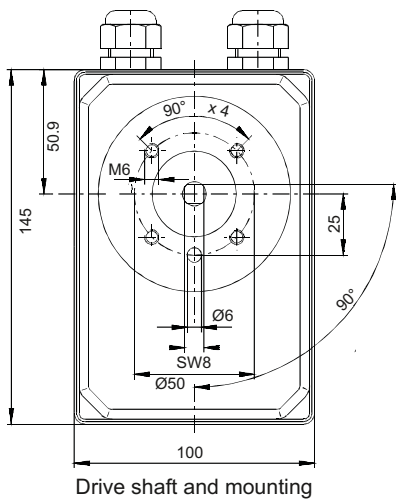


AST320 mounted on CMR airtight damper



AST320 mounted on PPs and metal Valves

AST-320 TECHNICAL SPECIFICATION



CMR Technical Data Electric Actuator Type AST-320	
Characteristic	Specifications
Nominal voltage	AC 24 V +/- 20%, 50/60 Hz,
Protection class	IP65 according to IEC 60529
Nominal current	850 mA at 50Hz - 923 mA at 60Hz
Power Consumption	20.4 VA at 50Hz - 22.15VA at 60Hz
Max output torque	20 Nm Holding Torque 10.5 Nm
Rotation direction	Selectable via terminals Open-Off-Close
Angle of rotation	Max. 360° factory adjusted to 0-90° +/- 5%
Manual adjustment	With Hand Key disengaging of gears
Drive Shaft	◇ 8 mm square male 12 mm long
Running time	15 s (+/- 5%) for 90° at 50Hz, 12.5s at 60Hz. during normal operation independent of load.
Potentiometer	10 Turn 5kOhm +/-3% - Linearity +/-0.5% Rating 10mA
Position indicator	Mechanical with indicator disc under perspex window
Noise emission level	< 30 dB (A) Running
Ambient temperature	-15 to +40°C according to DIN EN 60034-1
Storage temperature	-40 to +85°C
Nominal Frequency	50Hz / 60Hz
Duty cycle	100% according to DIN EN 60034-1
End Switches SW1-SW2 End Switches SW3-SW4	For motor drive end switching 2A 24VAC inductive. For application switching 2A 24VAC inductive.
Insulation Class B	130°C Synchronous Motor according to DIN EN 60034-1
Connection Cable	10 x 0,5 mm ² , 1.5 m length with Termination Box
Weight	approx. 2.7 kg
Cable Entry	2 x M16 x 1.5 screwed gland for cable diameter 5-10mm
Terminals	Plug in Terminals for one wire 2.5mm ²
Maintenance	Maintenance free
Wiring schematics AST 320 Drive Motor Part No: 204-320 15s - 20Nm Open/Off/Close	
Factory settings	<p>Poti is at ~3.125 kΩ on 1-2 at full ccw 5-9</p> <p>Motor is driven full ccw terminal 5-9</p>