

# AST-322 FAST INDUSTRIAL ACTUATOR

- Industrial heavy duty electric actuator
- 24VAC synchronous motor non overloadable
- Two adjustable end switches for motor drive
- Two auxiliary adjustable end switches
- Completely enclosed protection to IP65
- Two cable gland entries
- Rotation adjustable from 0..360°
- Factory set to 0..90° and 2.5kΩ at 45°
- Three point control function ccw-off-cw.
- Rotation speed 15s for 0..90°
- Torque 20Nm continuously rotating
- CMR standard 24 month warranty
- 30 Years field application experience

The AST-322 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 protected by 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 ~4.8 kΩ at full ccw (counter clock wise) position or ~0.18 kΩ at full cw (clock wise) position.

The power should be isolated before using the manual mode as otherwise the motor drives back to the control position. This function should only be used in a controlled maintenance condition. Once the motor is electrically isolated, a large lever fork spanner can be used to rotate the hexagon shaft between the motor and the damper.

In case of 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 end switches and potentiometer have been pre-commissioned at the factory to suit the damper. The end switches can be adjusted by any experienced electrical engineer should the application require this on site. The actuator is maintenance free.

A ten core cable with a length of 1.5m is factory fitted. There are three cores for the motor, three cores for the potentiometer and 4 cores for the two end switches. The actuator is factory tested and the positions are pre-set. The additional switches are set to switch at 5° and 85°.



AST-322 IP65 Actuator

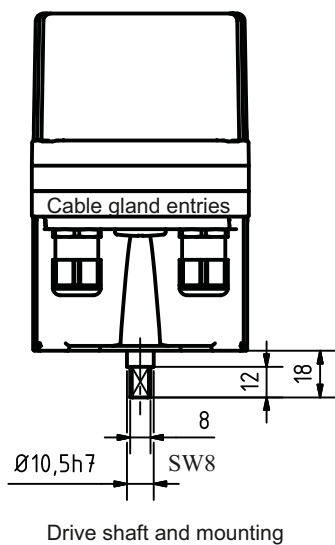
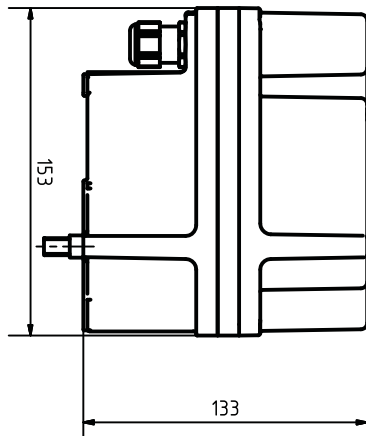
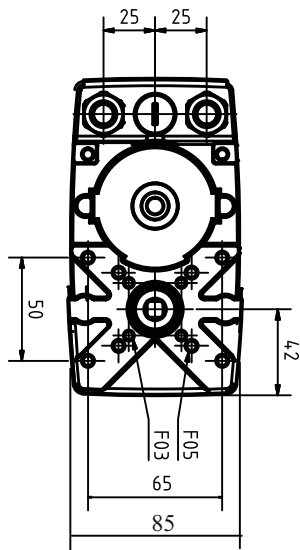


AST-322 suitable for all CMR airtight dampers



AST-322 suitable for PPs and metal Valves

# AST-322 TECHNICAL SPECIFICATION



| CMR Technical Data Electric Actuator Type AST-322  |  |
|--|--|
| Characteristic   | Specifications   |
| Nominal voltage  | AC 24 V +/- 10%, 50/60 Hz,   |
| Protection class   | IP65 according to IEC 60529  |
| Nominal current  | 312 mA at 50Hz   |
| Power Consumption  | 13 VA at 50Hz  |
| Max output torque  | 20 Nm Holding Torque 10.5 Nm   |
| Rotation direction   | Selectable via terminals ccw-off-cw (open-off-close)   |
| Angle of rotation  | Factory adjusted to 0-90° +/- 5%   |
| Manual adjustment  | With long Fork Spanner on Motor Extension Shaft  |
| Drive Shaft  | ◇ 8 mm square male 12 mm long  |
| Running time   | 15 s (+/- 5%) for 90° at 50Hz, during normal operation independent of load.  |
| Potentiometer  | 100° 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 +50°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 SL-SR<br>End Switches S1L-S2R   | For motor drive end switching 2A 24Vac inductive.<br>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 <sup>2</sup> , 1.5 m length with Termination Box   |
| Weight   | approx. 2.5 kg   |
| Cable Entry  | 2 x M16 x 1.5 screwed gland for cable diameter 5-10mm  |
| Terminals  | Terminals for one wire 1.5mm <sup>2</sup>  |
| Maintenance  | Maintenance free   |
| Wiring schematics<br>AST-322 Drive Motor<br>Part No: 204-322<br>15s - 20Nm<br><br>Open/Off/Close<br>ccw /Off/ cw |  |
| Factory settings   | <p>Viewed from top of Actuator</p> <p>Poti is at ~0.18 kΩ at full cw and 4.8 at full ccw</p> <p>Motor is in full cw position</p> |