

Series Features:

- AVA Compact Electric Actuators 20Nm to 400Nm Output
- Basic or Smart Series
- 24VAC/DC or 95-265VAC typical voltage range
- ISO 5211 for direct mount (see table in document)
- Visual position indicator
- Manual override as standard all series
- IP67 ABS housing and internal space heater
- Volt-free end of travel confirmation switches x 2
- Electronic torque limiter
- Failsafe via internal capacitor option available
- Options include Modbus, Hi Speed, Timer and more...



Main Specifications:

| Feature: | Detail: |
|--------------------|------------------------------------|
| Enclosure | ABS as standard (aluminium option) |
| Motor | Brushless motor for extended life |
| Duty Cycle | 75-95% Rated |
| Service Condition | -30C to +65C Ambient Temp |
| Position Indicator | Local dome indicator all series |
| Gear Train | Anti-high temperature lubricated |
| Wiring | Options available see document |
| Working Angle | Standard 0-90, Multi Turn option |
| Voltages | AC/DC 24V or 12. AC 95-265VAC 1ph |

Features and Functionality Options:

| Function | Description |
|---------------|--|
| Hi Speed | Fast acting option, example 20Nm 1 second |
| Modulating | 4-20ma or 0-10V input / output |
| Local Control | As standard with all smart actuators |
| OLED Screen | As standard with all smart actuators |
| Timer | 365 x 24/7 in built timer series option |
| Failsafe | Failsafe via internal super capacitor |
| Speed Control | Adjustable speed control via PWM or Pulse |
| BUS Comms | Modbus communication option |
| Multi Turn | Multi turn option for non rising stem valves |

Manufacturer:



Overview :

AVA offer a range of compact electric actuators covering torque outputs of 20Nm through to 400Nm currently. The range is split into two series, Basic and Smart. The Basic series is entry level offering standard features such as IP67 housing, manual override, heater and end of travel confirmation. The Smart series introduces an OLED screen and onboard firmware, digital encoder for phenomenal accuracy and customisation via firmware of actuator speed, angle and so on. The Smart series is available with additional functionality including modulating control, timer and BUS Communications. The AVA actuators utilise brushless DC motors for extended life and performance. Tested to over 1 million operations by various clients around the globe, AVA offer a quality range of electric actuators with unique features.

About AVA:

AVA is a UK brand of electric actuators. As an ISO 9001:2015 certified company, the team have developed the range over the last 5 years with more and more features being added. Primarily an OEM solution provider, through the requirements of its clients, it has been able to produce unique features and through the onboard firmware, customer specific requirements for the actuators to function a certain way are often not a problem for the team.

AVA actuators are CE certified, RoHS complaint and REACH self certified. CE approval is via TUV external testing. AVA will soon be CSA and UL certified for use in the USA and Canada.



Full Specifications:



| Model No | POWER | TORQUE NM | TORQUE IN.LB | SPEED | WEIGHT KG | ISO 5211 | OUTPUT | TYPE |
|------------|-------|-----------|--------------|---------|-----------|-------------|--------|------|
| 20 SERIES | 10W | 20NM | 310 in-lb | 10 Secs | 0.8 | F03/F04/F05 | 14 | STAR |
| 50 SERIES | 10W | 50NM | 445 in-lb | 12 Secs | 1.5 | F05/F07 | 14 | STAR |
| 80 SERIES | 40W | 80NM | 800 in-lb | 10 Secs | 1.8 | F05/F07 | 17 | STAR |
| 110 SERIES | 80W | 110NM | 1330 in-lb | 10 Secs | 1.8 | F05/F07 | 17 | STAR |
| 200 SERIES | 80W | 200NM | 3540 in-lb | 30 Secs | 6 | F07/F10 | 22 | STAR |
| 400 SERIES | 80W | 400NM | 4430 in-lb | 30 Secs | 6 | F07/F10 | 22 | STAR |

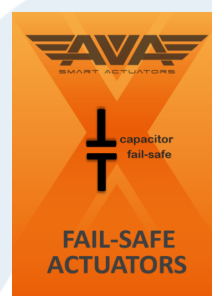
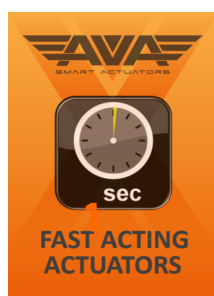
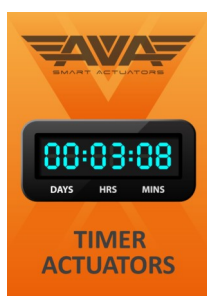
Please note that the above power is a general rating taken as a typical maximum rating. Contact us for more detailed listing of actuator power ratings and consumptions.

Voltages available:

| Model No | 12V | | 24V | | | 1-PHASE 50-60Hz | | |
|------------|-----|----|-----|----|-------|-----------------|----------|-----------|
| | DC | AC | DC | AC | AC/DC | 110-120V | 220-240V | 95-265VAC |
| 20 SERIES | ✓ | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 50 SERIES | ✓ | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 80 SERIES | ✓ | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 110 SERIES | ✓ | ✗ | ✗ | ✗ | ✓ | ✓ | ✓ | ✓ |
| 200 SERIES | ✗ | ✗ | ✗ | ✗ | ✓ | ✗ | ✗ | ✓ |
| 400 SERIES | ✗ | ✗ | ✗ | ✗ | ✓ | ✗ | ✗ | ✓ |

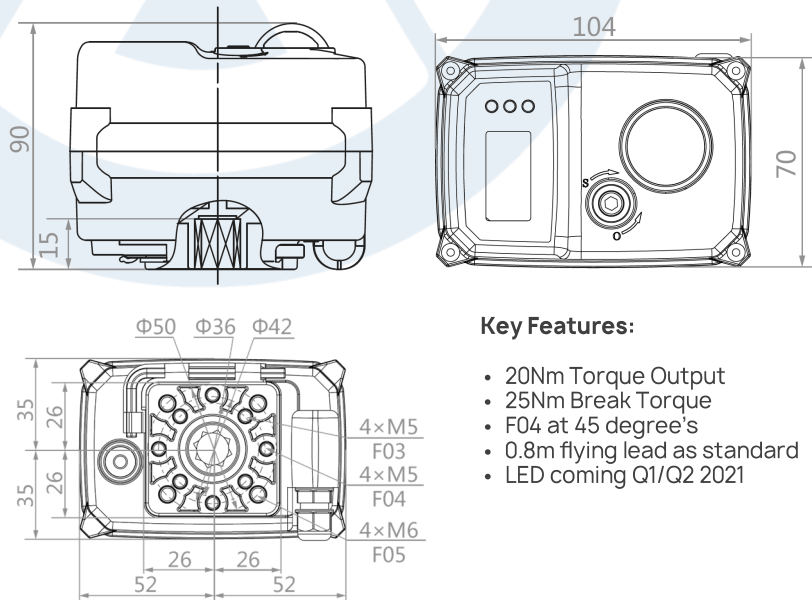
Options available:

The AVA range offers a wide selection of options and customisation options. From hi speed modulating to BUS communications to modulating failsafe. There are also a number of wiring configurations available and options for alarm relay output for example to feed back to a PLC of any alarm / error conditions that the actuator is experiencing.



Outline Dimensions:

- 20Nm Torque Output

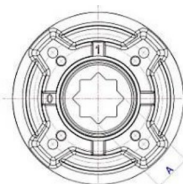


Key Features:

- 20Nm Torque Output
- 25Nm Break Torque
- F04 at 45 degree's
- 0.8m flying lead as standard
- LED coming Q1/Q2 2021



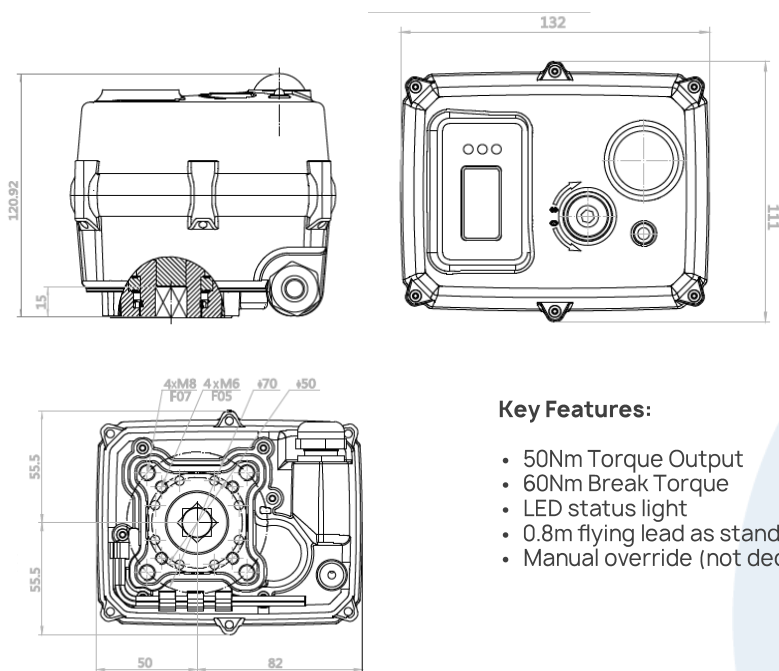
MODEL: 20



F03/04/05 x
14mm
17mm depth

Outline Dimensions:

- 50Nm Torque Output

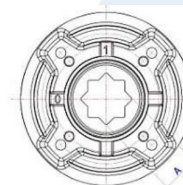


Key Features:

- 50Nm Torque Output
- 60Nm Break Torque
- LED status light
- 0.8m flying lead as standard
- Manual override (not declutch)



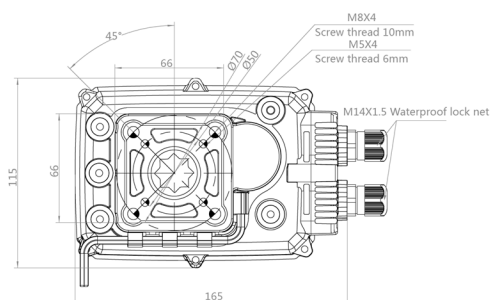
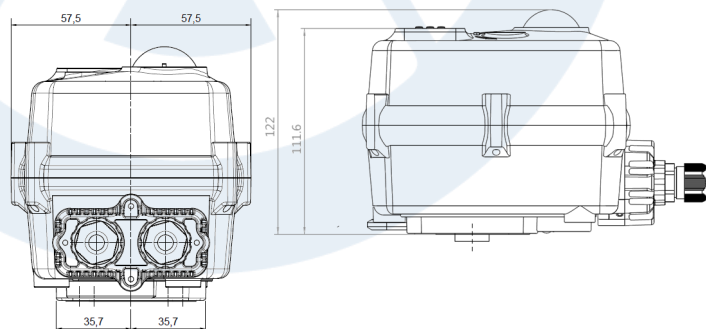
MODEL: 50



F05/07 x 14mm
15mm depth

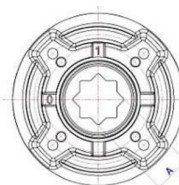
Outline Dimensions:

- 80-110Nm Torque Output



Key Features:

- 80-110Nm Torque Output
- 90-140Nm Break Torque
- Same housing 80Nm & 110Nm
- 10 second working time
- LED coming Q1/Q2 2021

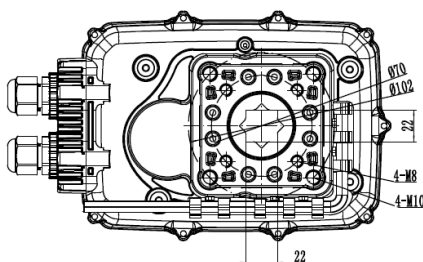
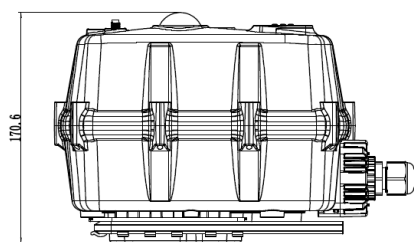


F05/F07 x 17mm
21mm depth



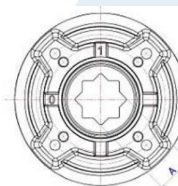
Outline Dimensions:

- 200-400Nm Torque Output



Key Features:

- 200-400Nm Torque Output
- 250-450Nm Break Torque
- Same housing 200Nm & 400Nm
- Declutch Gearbox
- LED and Sensor Technology

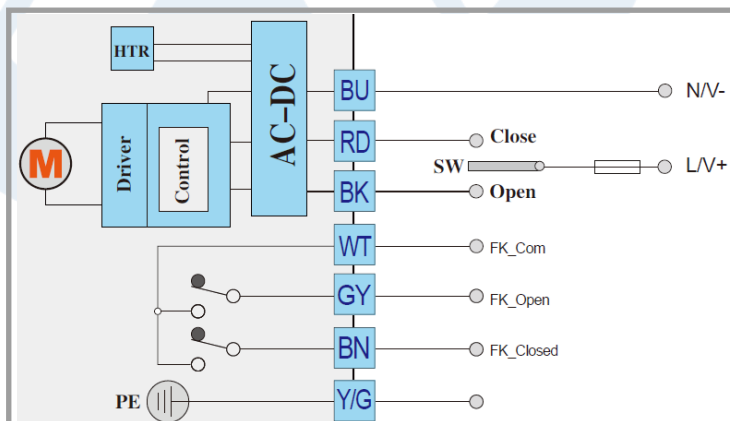


F07/10 x 22mm
30mm depth



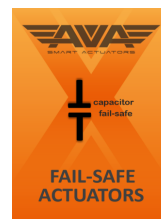
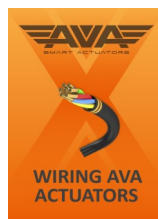
Common Wiring Schematics

Basic On Off / Failsafe / Hi Speed

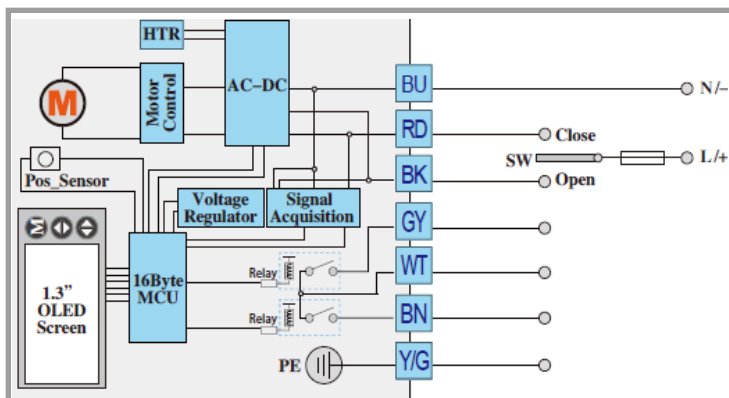


Type: B3S

Standard wiring for Basic actuators, all series 20-400Nm. Failsafe achieved via internal capacitor. Different wiring configurations available on request. Speak to our technical sales team about your requirements.

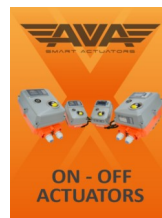
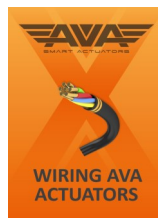


SMART On Off / Failsafe / Hi Speed

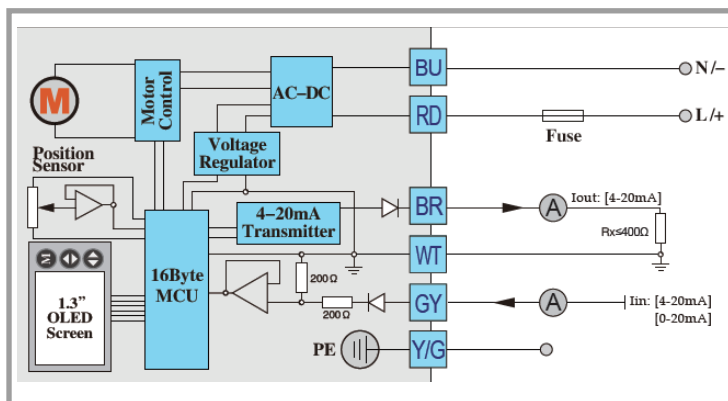


Type: B3J

Standard wiring for Smart actuators, all series 20-400Nm. Failsafe achieved via internal capacitor. Different wiring configurations available on request. Speak to our technical sales team about your requirements.

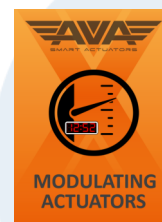
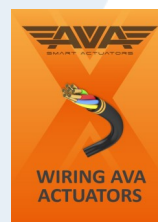


SMART Modulating / Failsafe / Hi Speed



Type: 4-20/0-10V

Standard wiring for Smart actuators, all series 20-400Nm. Failsafe achieved via internal capacitor. Different wiring configurations available on request. Speak to our technical sales team about your requirements. Note resistor required as per wiring schematic.



* Note we cannot currently offer Failsafe Hi Speed variations due the capacitor technology used, we cannot charge the capacitor quick enough when the actuator operates at hi speed.



Actuator Wiring Options

Pre Wired

The series 20 and 50 actuators in all functionality will come as standard with a 0.8m long prewired cable. The cables will be terminated with a 7 or 9 pin connector that is designed to be used with AVA test boxes. This would usually be removed through the distribution channels but should you receive the actuator with a white connector plug pre wired, you can simply remove this and terminate the cable into your own system, junction box etc. This doesn't effect your warranty. Whilst the actuators have a 0.8m cable as standard, we can adapt these to be supplied as 1m through to 10m lengths at additional cost.

Note that the 7 pin connector is for standard actuators with the 9 pin connector being used for actuators with Alarm Output relays.

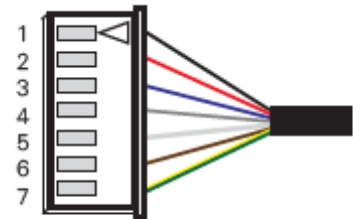


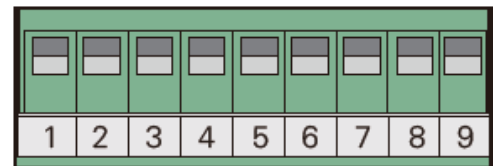
Figure 1 (7wiring diagram)

Wiring Terminal via Conduit Entry

The series 80 through to 400, as standard are supplied with 2 x M20 conduit entries wiring plugs on the actuators. These are located on the back of the actuator as part of what AVA call a wiring box. The wiring box is secured to the actuator housing via capped screws, simply remove them to reveal the terminal. Connect the actuator as per the wiring diagram and re fit the wiring box.

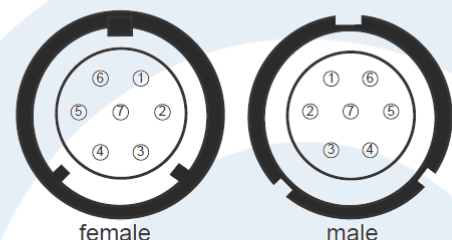
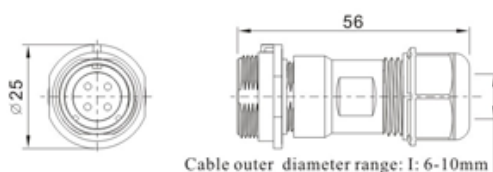
Note that we can also supply these actuators pre wired and as above we can also provide these as 1m through to 10m lengths.

9P-5.08 Terminal diagram



IP67 Soldered Connection

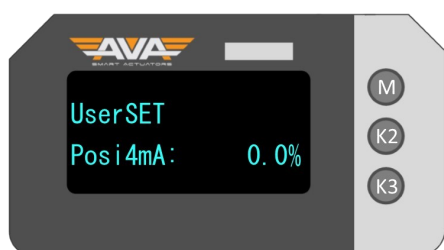
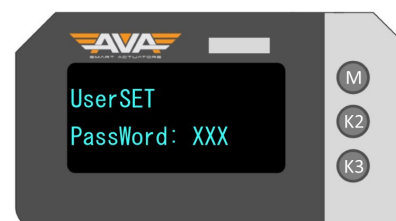
For customers not wanting to make their own connection from the standard pre wired 0.8m cable and looking for a more industrial, IP rated solution, we can offer our IP67-68 inline connectors. The connectors are rated for vibration and can be used as a plug and play connector should you require the actuator to be replaced in the future.



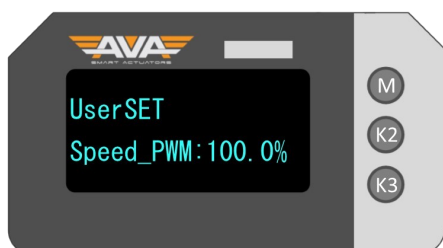
Smart Actuators OLED Screen Function

The AVA smart actuator series have onboard firmware, this can be used via touch buttons and the OLED screen to change the performance of the actuator. Below are just examples of the actuator function changes possible via the firmware. Full screen by screen user guides available on request.

| | |
|--------------|---|
| M | Hold for 3 seconds to enter MENU mode. Password is 333. |
| K2 | |
| K3 | Hold for 3 seconds to enter Local Control. Password is 111. |
| ALLMK | Hold all 3 buttons to enter RESET MODE. Password is 6666. |

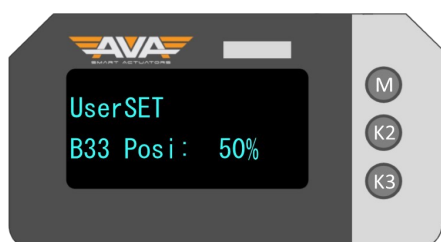


When using a modulating actuator, it is possible to set the 4ma position and the 20ma position. For example, if you don't want the actuator to be fully closed at 4ma, you can set the position you want the actuator to use as closed or 4ma. The same applies to the open position or 20ma. This can allow the user to change the working angle from 0-90 degrees for example, to 20-70 degrees so the valve will never be fully open or fully closed.

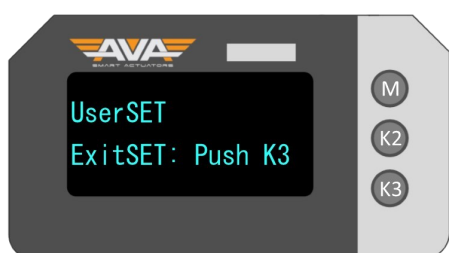


Speed Control is a unique feature of our smart actuators. Using PWM you can change the speed in which the actuator opens and closes. 100% is the quickest working time and 20% is the slowest working time. If the working time is 10 seconds for example, you can slow the actuator down to around 40 seconds.

For hi speed series, you can take a working time of 1 second (20Nm DC only) and slow down to around 6 seconds.



B33 is the AVA setting for a 3 position operation. This allows you to create a 3rd position. So for example you could be using our actuator on a 3 way valve to achieve a 0-90-180 degree movement, or you could have the actuator stop at the mid position on a standard 0-90 degree movement to stop at 45 degrees for example. With Failsafe actuators you can set the failsafe position to be open, closed or B33 which means you could have the actuator fail to 45 degrees as one example.



Once all the changes have made by the user, you can exit by pressing the bottom button (K3) at this screen shown, this will automatically save and apply all changes. You will get a message on screen confirming that the changes have been made.

Visit our website here for more info.



Series 20 - Part Numbers

| Function: | Basic On Off | | Basic Failsafe | | Basic Hi Speed | | Smart On Off | |
|-----------|----------------|---------|----------------|---------|------------------|---------|---------------------------|---------|
| Voltage: | 24VAC/DC | 95-265V | 24VAC/DC | 95-265V | 24VDC | 95-265V | 24VAC/DC | 95-265V |
| Code: | B206 | B205 | B246 | B245 | B2194 | B2195 | S2010-6 | S2010-5 |
| Function: | Smart Failsafe | | Smart Hi Speed | | Smart Modulating | | Smart Modulating Failsafe | |
| Voltage: | 24VAC/DC | 95-265V | 24VDC | 95-265V | 24VAC/DC | 95-265V | 24VAC/DC | 95-265V |
| Code: | S2014-6 | S2014-5 | S2019-6 | S2019-5 | S2025-6 | S2025-5 | S2026-6 | S2026-5 |

Series 50 - Part Numbers

| Function: | Basic On Off | | Basic Failsafe | | Basic Hi Speed | | Smart On Off | |
|-----------|----------------|---------|----------------|---------|------------------|---------|---------------------------|---------|
| Voltage: | 24VAC/DC | 95-265V | 24VAC/DC | 95-265V | 24VDC | 95-265V | 24VAC/DC | 95-265V |
| Code: | B506 | B505 | B546 | B545 | B5194 | B5195 | S5010-6 | S5010-5 |
| Function: | Smart Failsafe | | Smart Hi Speed | | Smart Modulating | | Smart Modulating Failsafe | |
| Voltage: | 24VAC/DC | 95-265V | 24VDC | 95-265V | 24VAC/DC | 95-265V | 24VAC/DC | 95-265V |
| Code: | S5014-6 | S5014-5 | S5019-6 | S5019-5 | S5025-6 | S5025-5 | S5026-6 | S5026-5 |

Series 80 - Part Numbers

| Function: | Basic On Off | | Basic Failsafe | | Basic Hi Speed | | Smart On Off | |
|-----------|----------------|---------|----------------|---------|------------------|---------|---------------------------|---------|
| Voltage: | 24VAC/DC | 95-265V | 24VAC/DC | 95-265V | 24VDC | 95-265V | 24VAC/DC | 95-265V |
| Code: | B806 | B805 | B846 | B845 | B8194 | B8195 | S8010-6 | S8010-5 |
| Function: | Smart Failsafe | | Smart Hi Speed | | Smart Modulating | | Smart Modulating Failsafe | |
| Voltage: | 24VAC/DC | 95-265V | 24VDC | 95-265V | 24VAC/DC | 95-265V | 24VAC/DC | 95-265V |
| Code: | S8014-6 | S8014-5 | S8019-6 | S8019-5 | S8025-6 | S8025-5 | S8026-6 | S8026-5 |

Series 110 - Part Numbers

| Function: | Basic On Off | | Basic Failsafe | | Basic Hi Speed | | Smart On Off | |
|-----------|----------------|----------|----------------|----------|------------------|----------|---------------------------|----------|
| Voltage: | 24VAC/DC | 95-265V | 24VAC/DC | 95-265V | 24VDC | 95-265V | 24VAC/DC | 95-265V |
| Code: | B1106 | B1105 | B1146 | B1145 | B1194 | B1195 | S11010-6 | S11010-5 |
| Function: | Smart Failsafe | | Smart Hi Speed | | Smart Modulating | | Smart Modulating Failsafe | |
| Voltage: | 24VAC/DC | 95-265V | 24VDC | 95-265V | 24VAC/DC | 95-265V | 24VAC/DC | 95-265V |
| Code: | S11014-6 | S11014-5 | S11019-6 | S11019-5 | S11025-6 | S11025-5 | S11026-6 | S11026-5 |



Series 200- Part Numbers

| Function: | Basic On Off | | Basic Failsafe | | Basic Hi Speed | | Smart On Off | |
|-----------|----------------|----------|----------------|---------|------------------|----------|---------------------------|----------|
| Voltage: | 24VAC/DC | 95-265V | 24VAC/DC | 95-265V | 24VDC | 95-265V | 24VAC/DC | 95-265V |
| Code: | B4006 | B4005 | B4046 | B4045 | ✗ | ✗ | S20010-6 | S20010-5 |
| Function: | Smart Failsafe | | Smart Hi Speed | | Smart Modulating | | Smart Modulating Failsafe | |
| Voltage: | 24VAC/DC | 95-265V | 24VDC | 95-265V | 24VAC/DC | 95-265V | 24VAC/DC | 95-265V |
| Code: | S20014-6 | S20014-5 | ✗ | ✗ | S20025-6 | S20025-5 | S20026-6 | S20026-5 |

Series 400 - Part Numbers

| Function: | Basic On Off | | Basic Failsafe | | Basic Hi Speed | | Smart On Off | |
|-----------|----------------|----------|----------------|---------|------------------|----------|---------------------------|----------|
| Voltage: | 24VAC/DC | 95-265V | 24VAC/DC | 95-265V | 24VDC | 95-265V | 24VAC/DC | 95-265V |
| Code: | B4006 | B4005 | B4046 | B4045 | ✗ | ✗ | S40010-6 | S40010-5 |
| Function: | Smart Failsafe | | Smart Hi Speed | | Smart Modulating | | Smart Modulating Failsafe | |
| Voltage: | 24VAC/DC | 95-265V | 24VDC | 95-265V | 24VAC/DC | 95-265V | 24VAC/DC | 95-265V |
| Code: | S40014-6 | S40014-5 | ✗ | ✗ | S40025-6 | S40025-5 | S40026-6 | S40026-5 |

* Note that we the 400Nm series failsafe actuators will be available from Q1/Q2 2021

| SUPPORT | INSTALLATION, OPERATION & MAINTENANCE |
|-----------------|--|
| Cover | No need to remove cover, doing so can invalidate your warranty |
| Heater | The heater option is prewired. When the actuator is powered, the heater is working |
| Orientation | Install vertically or horizontally upright, not to be installed underslung/upside down |
| Explosion Proof | All series are suitable for SAFE AREA use only. Series 20 available as EX Rated |
| IP Rating | IP67 weather proof, we advise against jetting/pressure washing actuators |
| Connector | If your actuator is received with the white connector, you can remove it and terminate cable |
| Warranty | Basic Series is 12 months 20,000 operations. Smart Series is 24 months 60,000 operations |
| End of Travel | All actuators have end of travel limit switches except Modulating actuators, see below |
| 4-20mA Output | Smart Modulating actuators have position feedback only, they don't have end of travel feedback |
| Wiring Box | Series 80-400Nm utilise a wiring box at the rear of the actuator. Remove to wire actuator |
| Maintenance | All series of the actuators maintenance free. We recommend actuators are operated daily. |
| Keep Powered | Yes, we recommend the actuators are powered at all times to ensure the heater and feedback operate |

