BASIKS Electric Actuators. Installation & Maintenance Instructions

Damage caused by non-compliance to these instructions will not be covered by our 12-month warranty.
Read these instructions BEFORE installing or connecting the actuator.

SAFETY INSTRUCTIONS: Electric actuators operate with the use of live electricity. It is recommended that only qualified electricians familiar with local electrical, health and safety directives be involved in the connection of these actuators. It is strongly recommended that each actuator have its own independently fused system.

ELECTRICAL CONNECTION

⚠ **Warning!** BEFORE connecting, ensure the voltage to be applied is within the range shown on the ID label. Damage caused by excess voltage will NOT be covered by our warranty.

Basiks 20 series actuators are supplied with a pre-wired connector (PHR-JST) approximately 0.8m long with all internal connections made at the manufacturing stage. 60 and 110 series actuators have an external wiring box. This wiring box provides you with two conduits for power, feed-back and control. Remove the 4 screws to expose the wiring terminal strip. Please visit http://www.basiks.us for wiring and terminal diagrams.

GENERAL POINTS TO NOTE AND FOLLOW:

1. **SIZING**: Account for factors that can increase the actual torque in a valve when sizing the actuator. We recommend adding a 25% safety factor to the manufacturer's' published torque (unless it specifies that they have included a safety factor.) Should the factors you identify with a safety factor added exceed 177in.lbs (20Nm) use BASIKS Model 60. Should you arrive at more than 531in.lbs (60Nm), use BASIKS Model 110. Damage to the BASIKS actuator caused by under-sizing the actuator is not covered under the warranty.

TYPICAL FACTORS THAT CAN INCREASE TORQUE IN BALL VALVES

Dry application (solvents, air, gas, powder), steam, valves with more than 2 seats (eg: 3-way valves), valves with cavity filled seats (eg: hygienic or sanitary), valve designs where the compression between end connections can influence torque (eg: plastic ball valves that do not have a "locked" ball), long periods of inactivity.

TYPICAL FACTORS THAT CAN INCREASE TORQUE IN BUTTERFLY VALVES

Dry application (solvents, air, gas, powder), steam, valve designs where the compression between end connections can influence torque, liner material, differential pressure across the valve, long period of inactivity.

2. Be aware of the height of the valve stem being installed into the BASIKS actuator's output drive, particularly if the valve is to be direct mounted to the BASIKS actuator. If the inserted stem length exceeds the depth of the drive output, fit a spacer between the valve mounting platform, or cut the stem down. Failure to ensure the correct stem height will cause irreparable damage to the actuator when assembled to the valve and such damage is not covered under warranty.

3. If using a mounting kit (typically a box section style bracket and drive adapter) to connect the BASIKS actuator to the valve ensure that:

a. The bracket is strong enough to withstand the forces that will be applied.
b. Bracket twisting ≤ .2mm in the process of on or off. The parallelism of the bracket ≤ .5mm.
c. Washers are used under any securing nuts/bolts
d. That the concentricity or alignment of the centerline of the output drive to the centerline of the valve stem is accurate. The purpose is to make sure the mechanical hysteresis ≤ 10° , otherwise the actuator will not work. Inaccuracy in concentricity of the drive and driven component will induce side loading of the stem which can result in premature failure of the integrity of the stem seal. Resulting damage is not covered under the warranty.

4. We recommend assembling with the actuator in the OPEN position. Ensure that the valve is also in the OPEN position on assembly*. Should the valve have mechanical stops (typically high-performance butterfly and ledge/step seat butterfly valves), ensure that the valve rotates away from the seat when opening away from the CLOSED position. Do not install 'upside down'. Vertical and horizontal installation is fine.

5. Always function test following assembly to ensure that the actuated valve functions correctly to specification. Before testing electrically, ensure that the voltage to be used conforms to the voltage shown on the BASIKS actuator's nameplate/ID label. Applying an incorrect voltage is likely to cause irreparable damage and such damage is not covered under warranty.

6. BASIKS Actuators purchased with the Anti-Condensation Heater option must always be in the "power-on" state to eliminate internal condensate.

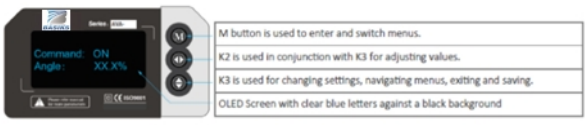
7. BASIKS Actuators do not require you to remove the cover at any point. Removing the cover will invalidate the warranty.

8. BASIKS Actuators are IP67 housed so they are suitable to be used both internally and externally. The actuator is weatherproof and according to its IP rating, can withstand being submerged in 1m water for a short period of time. If unsure of the suitability of your application with an BASIKS actuator, please contact our technical team.

9. BASIKS Actuators are NOT ATEX rated and are not designed for use in hazardous areas.

*Note: When assembling valve into piping system, please consult the valve manufacturer's installation requirements.

For actuators equipped with an OLED screen see the local control diagram below:



•The smart actuator has an OLED screen that displays actuator status (input command, status, and position) and an internal menu system. Do not put any force onto the screen and DO NOT remove the clear cover over the screen and buttons.

•Hold down the bottom button to display a flashing K3 – after 5 seconds the actuator will be put into manual local control. You can now control the actuator open/close independent of the input command. For some models this option will be password protected. To come out of this mode, simply press the "M" button or wait for around 20 seconds and the unit will time out. The actuator WILL NOT stay in MANUAL.

•The top button, labeled "M", will take you to the internal menu system. The menu varies between actuators but is generally used to set working angle, close position adjustment, and working speed. For failsafe actuators, you can select if the actuator will fail open or fail close upon power fail. Modulating actuators have their own options as well.

•If your actuator displays "ALERT", there is an issue with the actuator. If fitted to a valve, check that the torque is not more than the actuator can output. If the valve is jammed, free the blockage and re-power the actuator. If the actuator is not fitted to a valve, check the power supply. If "ALERT" remains on the screen, call technical support.

If the actuator shows "NO CTRL" – this means there is no modulating control signal. Check wiring.
If the actuator shows "PWR CUT" – this means the actuator cannot see a live voltage. Check wiring.
For complete menu instructions, please see the specific actuator datasheet.

FAULT FINDING GUIDE

1	No response from actuator	Power is not connected	Check wiring, supply, fuses, cables, terminals, connections.
		Insufficient Voltage	Check that the voltage is in accordance with the actuator nameplate/ ID label
		Motor overload protection active	Indicates that the valve is blocked or jammed, or that the actuator is undersized
2	No position confirmation	Power is not connected	Check wiring, supply, fuses, cables, terminals, connections.
		Faulty micro-switch	Test switch, if faulty, change.
3	Valve not fully closed when actuator stops	Using feedback (end of travel position confirmation) signal to control the actuator	The position confirmation cam strikes its switch before the final motor stop cam, so using the feedback signal to stop the motor results in an incomplete CLOSE cycle. Do not use the feedback signal to control the motor
		Poor assembly where excessive tolerance exists in the drive between the actuator and valve stem	Resolve poor assembly so that the connecting tolerance between the actuator output drive and valve stem is correct (no "play")
4	Water ingress in actuator	Cover screws loose	Tighten cover screws (but do not over-tighten - see earlier warnings in this regard)
		Cover seal damaged or incorrectly fitted	Removal of cover will void warranty, please contact the factory for assistance.
		Actuator has been hosed down, pressure washed, or deluged in water	Actuator damaged beyond repair. Such damage is not covered by the warranty.
		Actuator has been submerged beyond its tolerance of IP67	Actuator damaged beyond repair. Such damage is not covered by the warranty.

Note: These points are offered as a guide only based on experience and are neither exclusive nor conclusive. It is the users' responsibility to ensure that the correct power is being correctly applied to the BASIKS actuator, and that all external components comply with local electrical laws or regulations. We strongly recommend that only people qualified in electrical circuits size and design the power and signaling circuits to be used with BASIKS actuators, and specify or select components to be used, and that only qualified electricians be involved in the connecting of BASIKS actuators to these circuits.

OPERATING PROCEDURE FOR MANUAL OVERRIDE: All BASIKS actuators are supplied with a hexagon spanner (Allen wrench) that is in a clip fixed to the actuator. This can be used to manually turn the actuator in either direction when power is not being supplied.

ANTI-CONDENSATION HEATER (STANDARD UNLESS OTHERWISE SPECIFIED): BASIKS actuators equipped with an anti-condensation heater maintain the internal housing at approx. 25° C ± 20%

ELECTRONIC TORQUE LIMITER: All BASIKS actuators are protected against the possible mechanical drive train damage caused by a valve blockage or jam. This protection is provided by an electronic torque limiter (ETL) in an internal microchip that is programmed to constantly measure and compare the motor load against a factory set maximum.

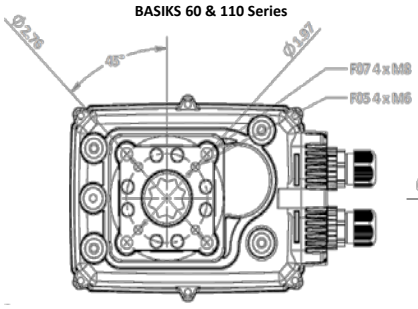
As torque is directly proportioned to motor load, as the torque increases the motor load increases. The ETL closely monitors the rate of increase in motor load as the valve starts to come to rest at the jam, and as this occurs the motor load exceeds the factory set maximum and the ETL is activated, instantly cutting power supply to the motor.

MAINTENANCE INSTRUCTIONS: BASIKS electronic actuators are generally maintenance free. There are no internal parts that require maintenance. The gearbox is lubricated for life when built at the factory. The housing may be cleaned with a cloth and warm soapy water. Do not use solvents .

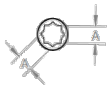
⚠ DO NOT PRESSURE WASH. Pressure washing will invalidate any warranty.

Dimensional Drawings:

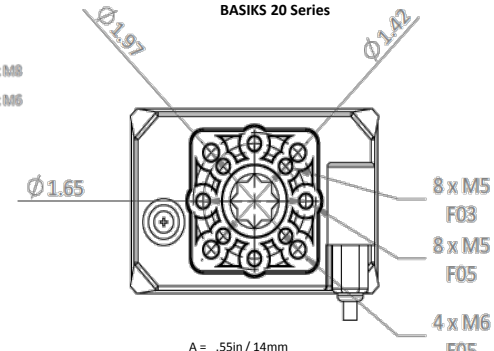
BASIKS 60 & 110 Series



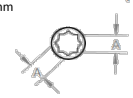
A = .67in / 17mm
Hole depth = .83in / 21mm



BASIKS 20 Series



A = .55in / 14mm
Hole depth = .67in / 17mm



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