

**READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLING OR CONNECTING POWER TO THE ACTUATOR. THE ACTUATOR MUST BE INSTALLED, COMMISSIONED, OPERATED AND REPAIRED BY QUALIFIED PERSONNEL. COMPLY WITH ALL APPLICABLE CODES, STANDARDS AND SAFETY REGULATIONS.**

#### STORAGE

Actuators should be stored in a clean, dry environment at all times. Do not install the actuator outdoors or in humid environments without immediately supplying power to activate the internal heater. The thermostatically controlled heater will help prevent possible damage caused by condensation build up inside the actuator.

#### INTRODUCTION

This document provides installation, operation and maintenance instructions for Valworx 5618 series electric on/off actuators. These actuators are typically used to operate quarter-turn valves. Every actuator has been fully tested prior to shipment to ensure trouble free operation.

#### MOUNTING

The actuator can be mounted in any orientation. Allow enough room around actuator for manual operation as well as any maintenance. Valves can be direct mounted to the actuator using standard ISO5211 international mounting pad.



Standard ISO5211 valve mounting interface

#### TEMPERATURE RATING

Operating temperature range of the actuator is -13 to +131°F (-25 to +55°C). Heat from the working medium (fluid) should not allow actuator to exceed these temperature limits. Optional high temperature valve mounting kits are available to increase the allowable media (fluid) working temperature.

#### ENCLOSURE RATING

The rugged aluminum housing is rated Type 4X and IP67 weatherproof. These actuators should not be used in explosion proof or hazardous applications.

#### VISUAL POSITION INDICATOR

Actuators are supplied with a local visual valve position indicator. This indicator is yellow and located on top of the actuator. Indicator will show the open and closed (on-off) position of the quarter-turn actuator (valve).

Visual position indicator



Standard heater and position confirmation limit switches under this cover



Conforms to  
UL Std 429

Certified to  
CSA Std C22.2  
No. 139

EN 60204-1:2006



#### ANTI-CONDENSATION HEATER

The actuator has a standard integral thermostatically controlled 4 watt anti-condensation heater. Power should be maintained either in the open or closed position to activate internal heater. This heater will help prevent condensation build-up inside the actuator.

#### DUTY CYCLE AND MOTOR PROTECTION

The rugged 5618 series actuators are rated 70% duty cycle. Actuators are equipped with thermal overload protection with automatic reset to guard against over torque situations.

#### POSITION CONFIRMATION SWITCHES AND MECHANICAL STOPS

Two auxiliary limit switches are provided to confirm the actuator (valve) open and closed positions. (use of these switches is optional). In addition, rotation of the output drive is limited by adjustable mechanical stops. These stops are preset at the factory, no adjustment required.

#### MANUAL OVERRIDE

Valworx 5618 series electric actuators have a manual override for use during setup or loss of electrical power. To operate the manual override, first "REMOVE ALL ELECTRICAL POWER TO THE ACTUATOR" then open the manual override protective cover located on the side of the actuator. Insert a hex wrench (provided) and rotate to open (counter-clockwise) or close as required.



**WARNING:** Disconnect electrical power prior to operating manual override, removing covers or service.

#### MAINTENANCE

There are no internal parts that require regular maintenance. The gear drive is pre-lubricated for life. The housing may be cleaned with warm soapy water (no solvents). The actuator should be cycled at least once per month. **DO NOT PRESSURE WASH.**

## ELECTRICAL WIRING

Confirm the actuator VOLTAGE is correct, then remove the terminal box cover and connect wiring to terminal strip according to appropriate wiring diagram.

For convenience, wiring diagrams for each actuator are attached to the inside of the terminal box cover.

User/installer to supply a three way switch, control relay, PLC outputs, or other suitable switching device to control the actuator position. Actuator should have its own fused and isolated circuit. Do not connect actuators in parallel.

Power should be maintained either in the open or closed position to activate the internal heater. This heater will help prevent condensation build-up inside the actuator.

## CABLE OR CONDUIT INSTALLATION

**Cable Connection:** When using the supplied cable connectors for wiring to the actuator, outside diameter of the cable should be 9 to 11mm. Cable smaller than this may allow water to enter the actuator causing damage.

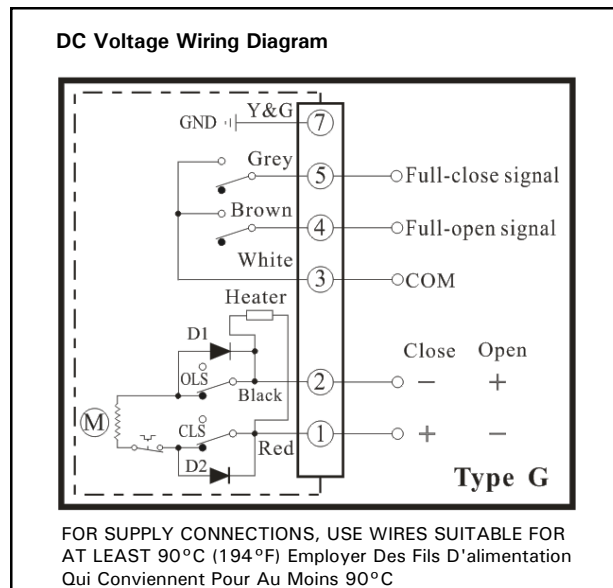
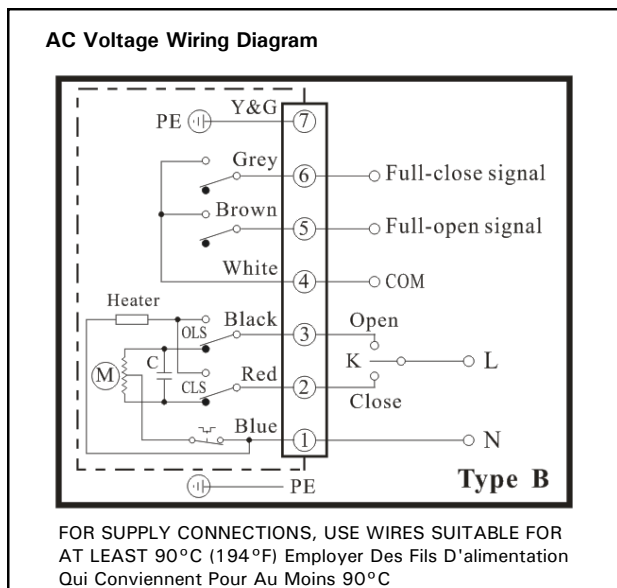
**Conduit Connection:** Optional 1/2" NPT Conduit fittings are available. Threads should be sealed water tight. Conduit should be installed with a drop loop, if necessary, to make sure condensation within the conduit does not get inside the actuator and cause damage.



Before connecting power, confirm correct VOLTAGE is being applied. Incorrect voltage may damage actuator and void the warranty.

## OPERATION

Standard on/off electric actuator uses power-to-open and power-to-close, stays in the last known position with loss of power. On receipt of a continuous voltage signal, the motor runs and via a rugged gear system rotates the actuator output (valve) 90 degrees. The motor is automatically stopped by internal cams striking limit switches. On receipt of a reversing continuous signal, the motor turns in the opposite direction reversing the actuator position.



### AC Voltage Wiring:

[User/Installer to Supply Relay or 3-way Switch (K)]

Terminal 1: Power Neutral (N)

Terminal 2: Power (L) to terminal 2 - Actuator OFF or CLOSED

Terminal 3: Power (L) to terminal 3 - Actuator ON or OPEN

### Auxiliary Position Confirmation Limit Switches

Terminal 4: Common

Terminal 5: Open status confirmation signal

Terminal 6: Closed status confirmation signal

### Ground PE

Terminal 7: Earth Ground

### DC Voltage Wiring:

[User/Installer to Supply Reversing Relay or Switch]

Terminal 1: Power Positive (+) to close, power Negative (-) to open

Terminal 2: Power Negative (-) to close, power Positive (+) to open

### Auxiliary Position Confirmation Limit Switches

Terminal 3: Common

Terminal 4: Open status confirmation signal

Terminal 5: Closed status confirmation signal

### Ground PE

Terminal 7: Earth Ground

**NOTES:** 1. Auxiliary limit switches are rated 3A@125/250VAC, 30VDC resistive load. 2. Actuator should have its own fused and isolated circuit. Do not wire actuators in parallel.