



VALPES VRX/VSX RANGE

IECEx Zone 1 Exd



Overview

The VRX-VSX multi-voltage electric valve actuator from the European electric actuator manufacturer VALPES offers an impressive list of standard features that include multi-voltage capability, protection against damage from over-torque or condensation, and emergency hand operation facility in a Zone 1 rated IECEx flameproof actuator.

This range has an aluminium base containing the gearbox and internal components, the standard cover is polyamide (plastic) with an aluminium option.

The VRX range offers 3 models providing up to 664in.lbs, the 3 model VSX range then provides torque outputs of up to 2655in.lbs.

VALPES VRX-VSX ATEX Electric Actuator Specifications

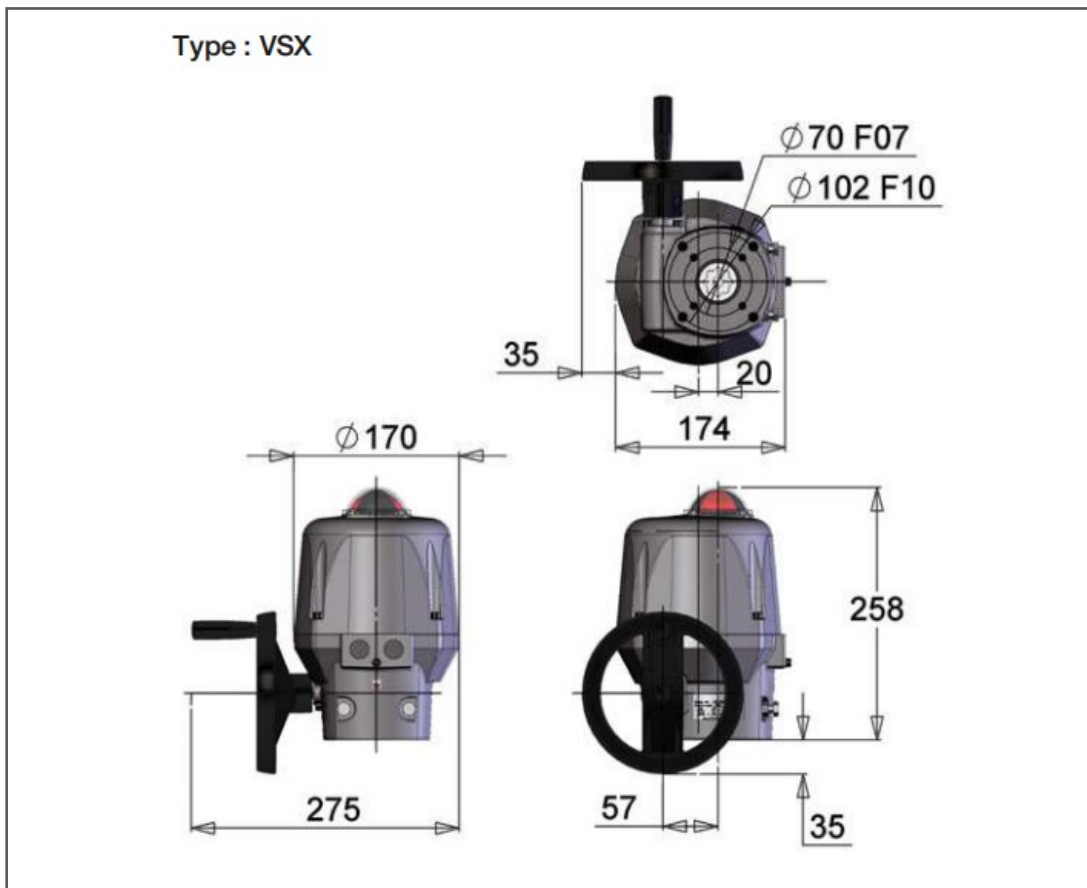
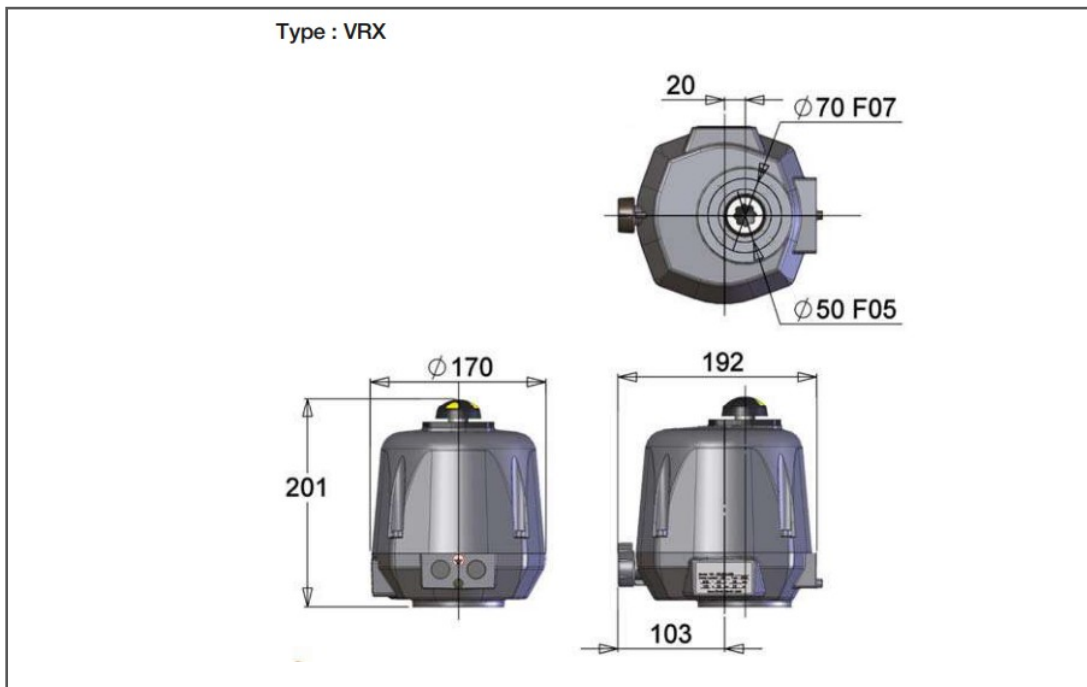
Visual position indicator	Modular (VRX Series) or Spherical (VSX Series)
Control	On-Off or 3 position
Voltages	Low: 15-30V AC 1ph, 12-48V DC High: 100-240V AC 1ph, 100-350V DC, 400V AC 3ph.
Duty rating	Service S4 - 50% (IEC34 Standard)
Maximum break torque	221-2655in.lbs (25Nm to 300Nm)
IP Rating (IEC 60529)	Similar to NEMA 7X (IP68)
Working angle Standard (on request)	90 Degrees (180 and 270 degree options)
Number of starts per hour	150
Motor switches	2
End of travel confirmation (volt free)	2
Emergency hand operation	Dec clutchable system with external shaft (VRX) or handwheel (VSX)
Heater	Yes, thermostatic
Ambient temperature range	-4 to +158F (-20C to +70C) for On-Off, +14 to +104F (-10C to +40C) for Failsafe
Electrical connections	2 x ISO-M20
Fault Relay	Advises failure (Torque, temperature etc)
ISO Mounting	F05 & F07 (VRX), F07 & F10 (VSX) Female star output drive.
Weight	8.8lbs to 9.7lbs (4.0 to 4.4kg) for VRX, 13.2lbs to 14.1lbs (6.0 to 6.4kg) for VSX

How this VALPES VRX-VSX electric 1/4 turn valve actuator works (on-off)

Electrically operated valves are driven by an electric actuator containing a motor and gearbox. On receipt of a continuous voltage signal (not pulse) the motor runs and, via a gearbox in the electric actuator, rotates the valve stem. The motor stops at the desired position (usually 0° or 90°) by an internal cam striking a micro-switch. The valve actuator remains in this position, with the voltage still applied continuously, until switched and a continuous voltage reversing signal (not pulse) is applied, which runs the motor in the opposite direction, reversing the rotation until a separate internal cam strikes a separate micro-switch and stop the motor. The Valpes VRX-VSX actuator is designed to have the external power continuously applied, and power must not be switched off when end of travel is achieved.

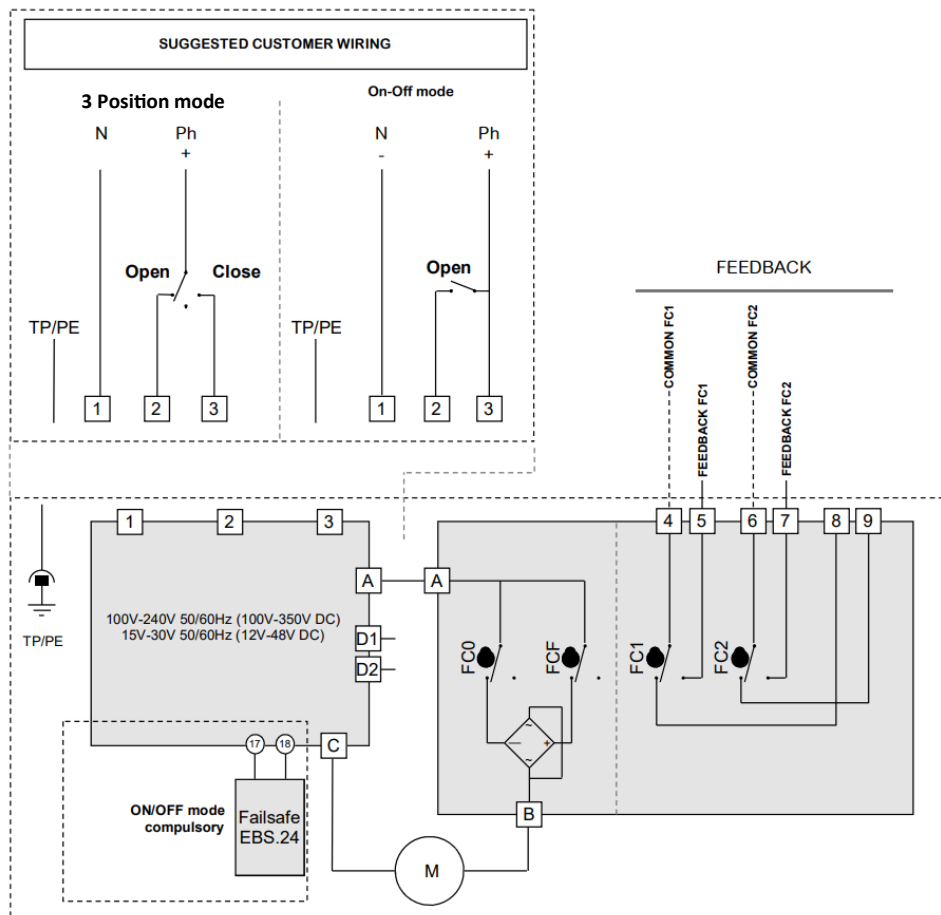
Available with actuator function: **POWER OPEN - POWER CLOSE, FAILSAFE, MODULATING, FAILSAFE MODULATING**

VRX-VSX RANGE - DIMENSIONS



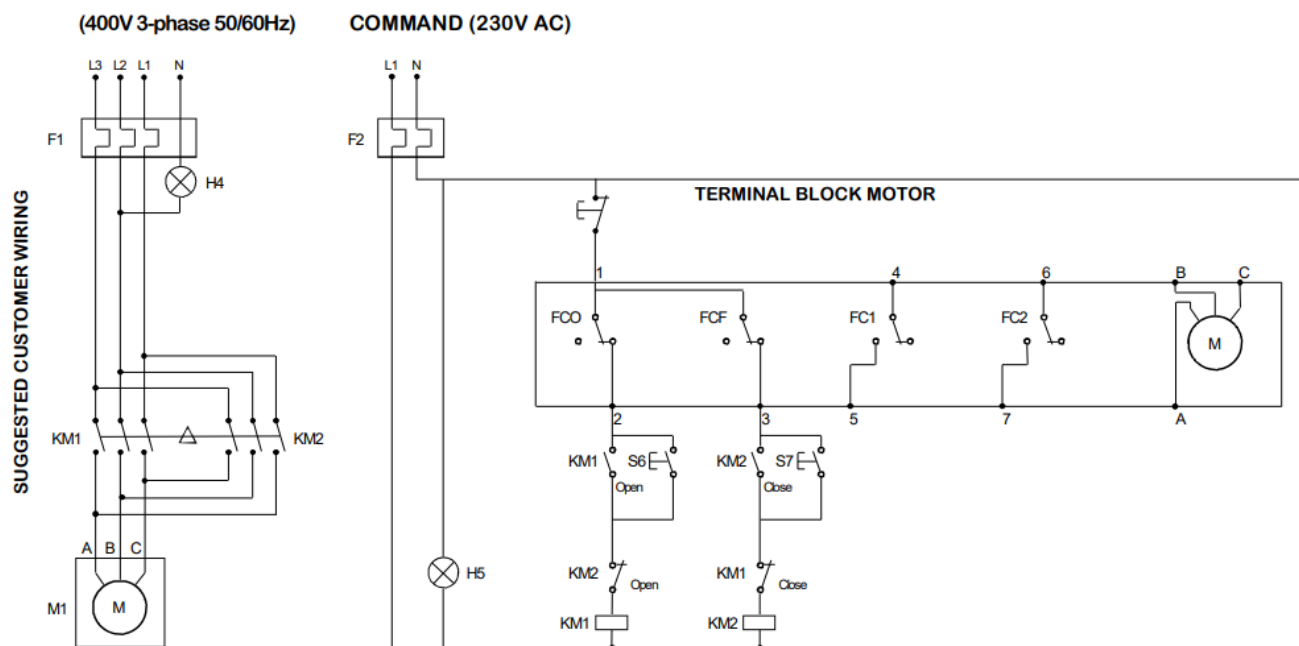
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VRX- VSX WIRING DIAGRAM - Single phase electric actuators



FCO	Open position limit switch
FCF	Closed position limit switch
FC1	Open indication limit switch
FC2	Closed indication limit switch
D1/D2	Fault Relay terminals 24VDC 5A Max

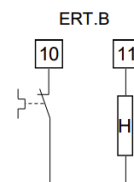
VRX/ VSX WIRING DIAGRAM - 3 phase electric actuators



Rep.	Designation	Rep.	Designation	Rep.	Designation
FC0	Open limit switch	H4	Motor supply indication	S5	Stop button
FCF	Close limit switch	H5	Control supply indication	S6	Opening button
FC1	Auxiliary limit switch 1	KM1	Opening switch	S7	Closing button
FC2	Auxiliary limit switch 2	KM2	Closing switch	H	Heating resistor
F1 / F2	Thermal switch	M	Motor		



The motor power supply is wired on bistable three-phase relay (not delivered)
If working inverted, invert 2 phases of motor



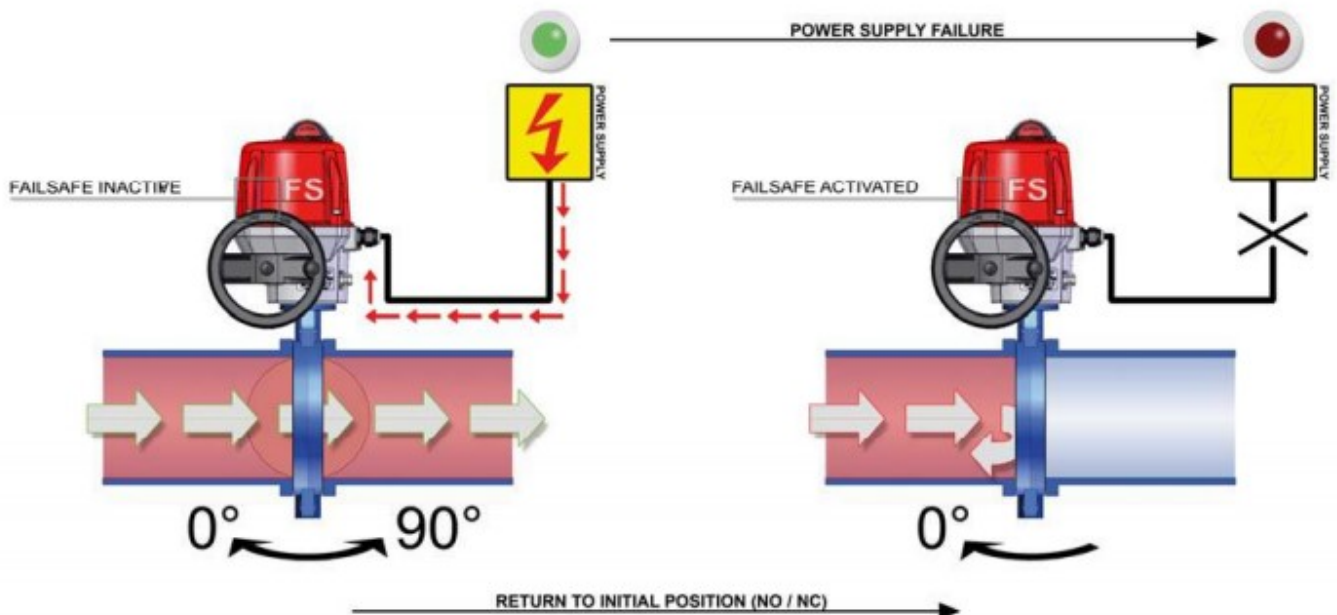
VRX- VSX FAILSAFE ELECTRIC ACTUATORS

Description

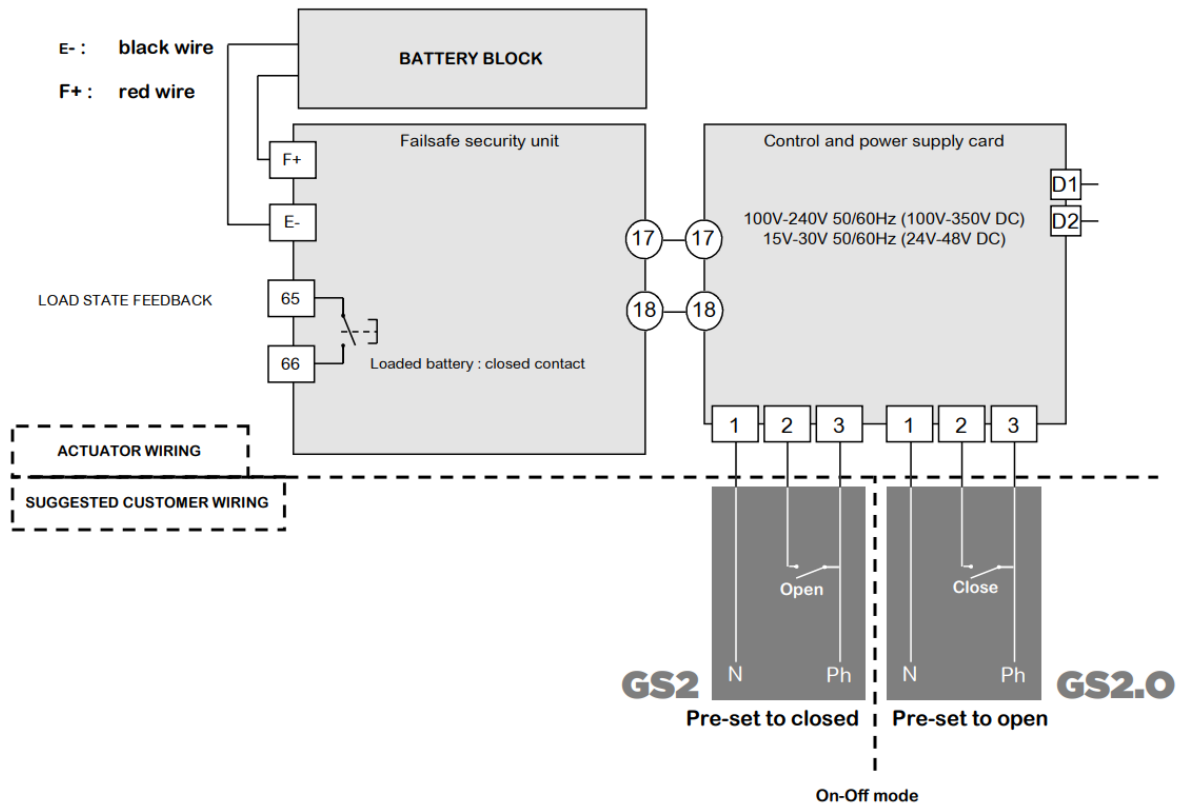
Failsafe actuators integrate battery pack monitored by electronic board in the actuator. Its function is to relay in case of power supply failure on terminal PIN 1, 2 and 3 of the actuator. The failsafe actuators can be set on different position like normally open (NO) or normally close (NC) depends on customer application. The electronic board monitors the battery pack and check the status of battery (cycle load and failure). If a battery failure is detected, a contact on PIN 66 and 66 switch off. If customer use this contact he could be aware that there is a failure on battery in the actuator without remove cover and plan the replacement. Failsafe option required ON/OFF mode.

Advantages

- All in one: no additional wiring required
- Cost effective
- Battery gauge active 24H/24H
- Power shut off after 2 mn to avoid battery discharging
- Quick and easy replacement of the battery
- 2 initial position settings: "normally open" or "normally closed"
- Battery failure feedback relai



VRX- VSX FAILSAFE ELECTRIC ACTUATORS - WIRING



The terminal temperature can reach 90°C

The two functioning modes « pre-set to closed » and « pre-set to open » are two different products (pre-set in factory) and can't be interchangeable.

Available with actuator function: **POWER OPEN - POWER CLOSE, FAILSAFE, MODULATING, FAILSAFE MODULATING**

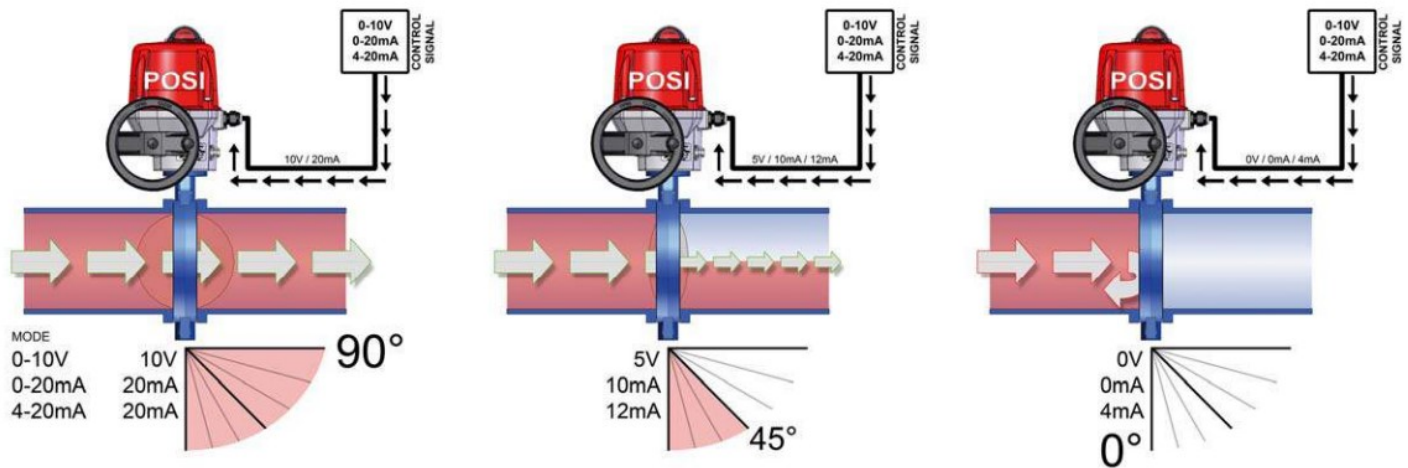
VRX- VSX MODULATING ELECTRIC ACTUATORS WITH POSI

Description

Actuator V series with advanced and friendly positioning solution, allowing the control of a valve with a signal: 0-10V, 4-20mA or 0-20mA. For applications like dosing, modulating, flow control, filling up (increases the accuracy in the last stage), mixing...

Advantages

- All in one: no additional wiring required
- Cost effective
- Microprocessor base
- Secured process (memorization loops)
- Self configurable (0-20mA/4-20mA/0-10V)
- Reversible (exemple : 20-4mA)
- Training mode
- Anti condensation heater
- Electronic torque limiter
- Failure feedback relay
- Rotation up to 180° or 270° (on request)
- Preset from factory



Please consider 1.5 safety factor (and 2.0 safety factor for POSI version) when sizing the actuator

Control in 0-10V modes:

In case of outside event, absence of control signal (accidental wires cut for example) but in presence of power, the actuator will travel to defined position (open or closed valve).

In standard our actuators will close themselves in absence of control signal but there are other possibilities on request.

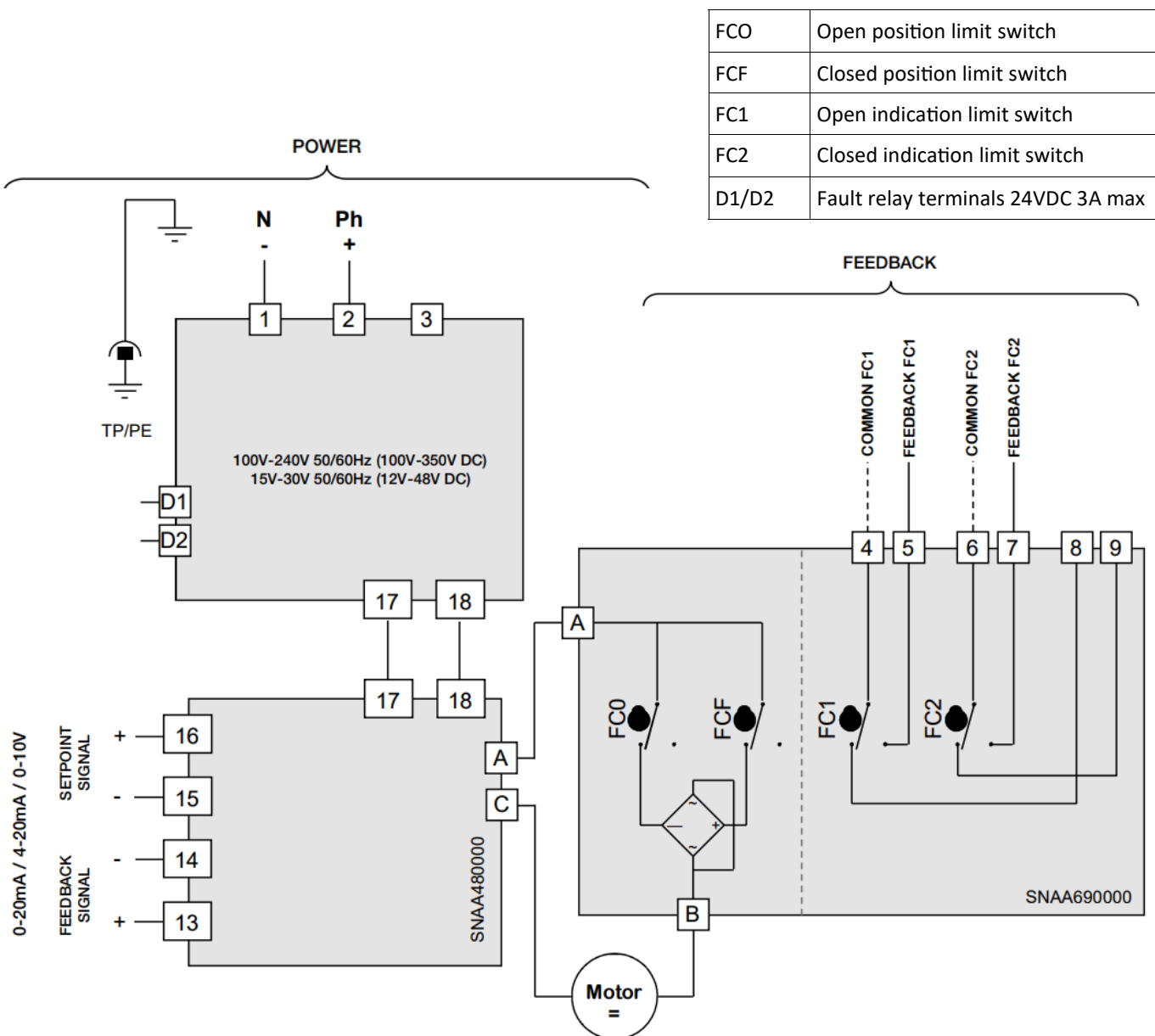
Control in 4-20mA mode:

In case of outside event, absence of control signal (accidental wires cut for example) but in presence of power, the actuator will stay in its position.

In the both cases, when the control signal is restored, the actuator reach automatically the position corresponding to control signal value.

Available with actuator function: **POWER OPEN - POWER CLOSE, FAILSAFE, MODULATING, FAILSAFE MODULATING**

VRX- VSX MODULATING ELECTRIC ACTUATORS WITH POSI - WIRING



- The card resolution is 1°
- 10 KOhm input impedance if control with voltage (0-10V) / 100 Ohm input impedance if control with current (0-20mA ou 4-20mA)



- The terminal temperature can reach 90°C
- The used wires must be rigid (feedback voltages : 4 to 250V AC/DC)
- For a use with a long wiring, the induction current generated by the wires mustn't be higher than 1mA
- La tension de pilotage doit être de type T.B.T.S. (Très Basse Tension de Sécurité)
- No common earth/ground connexion between the control (input and output signal) and the alimentation. (Type 0-20 or 4-20mA : 5V DC max.)

VR and VS POSI-SAFE actuators

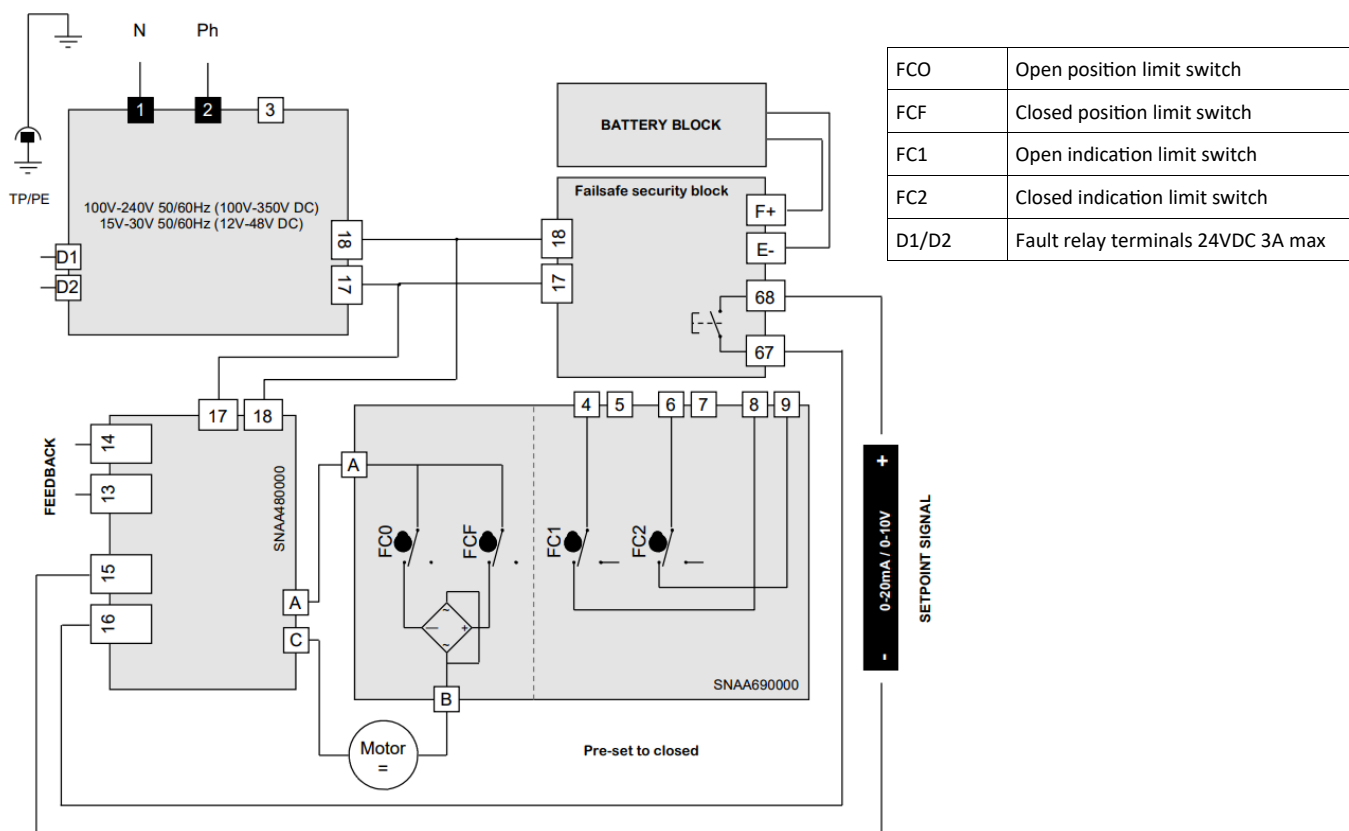
Description

The VR and VS (polyamide cover only) GPS models incorporate a FAILSAFE security module and a positioning electronic card (GS2 model coupled with GP5 model).

Advantages

- All in one: no additional wiring
- Compact, reduced overall dimensions
- One unique IP68 for 2 functions
- No additional wiring
- User friendly connecting and servicing
- Cost effective
- Battery gauge
- Power shut off after 2mn to avoid battery discharging
- Quick and easy replacement of the battery
- 2 initial position settings: "normally open" or "normally closed"
- Microprocessor base
- Secured process (memorization loops)
- Self configurable (4-20mA/0-10V)
- Reversible (example: 20-4mA)
- Feedback signal 4-20mA or 0-10V
- Training mode
- Anti condensation heater
- Electronic torque limiter
- Failure feedback relay
- Rotation up to 180° or 270° (on request)
- Preset in factory

VRX-VSX MODULATING ELECTRIC ACTUATORS WITH POSI - WIRING



Available with actuator function: **POWER OPEN - POWER CLOSE, FAILSAFE, MODULATING, FAILSAFE MODULATING**

VR and VS POSI-SAFE actuators



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- For a use with a long wiring, the induction current generated by the wires mustn't be higher than 1mA
- La tension de pilotage doit être de type T.B.T.S. (Très Basse Tension de Sécurité)
- No common earth/ground connexion between the control (input and output signal) and the alimentation. (Type 0-20 or 4-20mA : 5V DC max.)
- The terminal switch 67 68 must be wired with positive DC current (24V 3A max.).