

### VALPES ER20 PLUS



#### Overview

The ER20 PLUS 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.

#### ER20 PLUS VALPES Electric Actuator Specifications

Voltage range / Duty rating	Low voltage version	12V - 48V DC / 50% 15V - 30V AC (1ph) or DC / 50%
	High voltage version	100 - 240V AC (1ph) / 50% 100 - 350V DC / 50%
Operating time (0-90° no load)	With load	12 seconds
Maximum break torque	Max including safety	176 lb. Ins (20 Nm)
IP Rating (IEC 60529)		Similar to NEMA 4X (IP66)
Working angle Standard (on request)		90°
Mounting ISO:5211 x DIN 3337		F03, F04 & F05 x 14 (std)
Motor switches		2 x SPDT micro switches (5A Max)
End of travel confirmation (volt free)		2 x SPDT micro switches (5A Max)
Heater		Yes
Ambient temperature range		14 to +131°F (-10° to +55°C )
Electrical connections		1 x DIN Plug & 1 x M20
Weight		2.2lbs (1.0 kg)
<b>Consumption</b>		
Power		15W

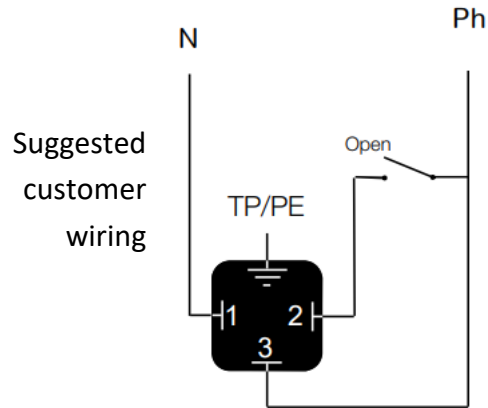
#### How this ER20 PLUS electric 1/4 turn valve actuator works (on-off)

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 ER20 PLUS actuator is designed to have the external power continuously applied, and power must not be switched off when end of travel is achieved.

### ER20 PLUS ON - OFF ELECTRIC ACTUATOR

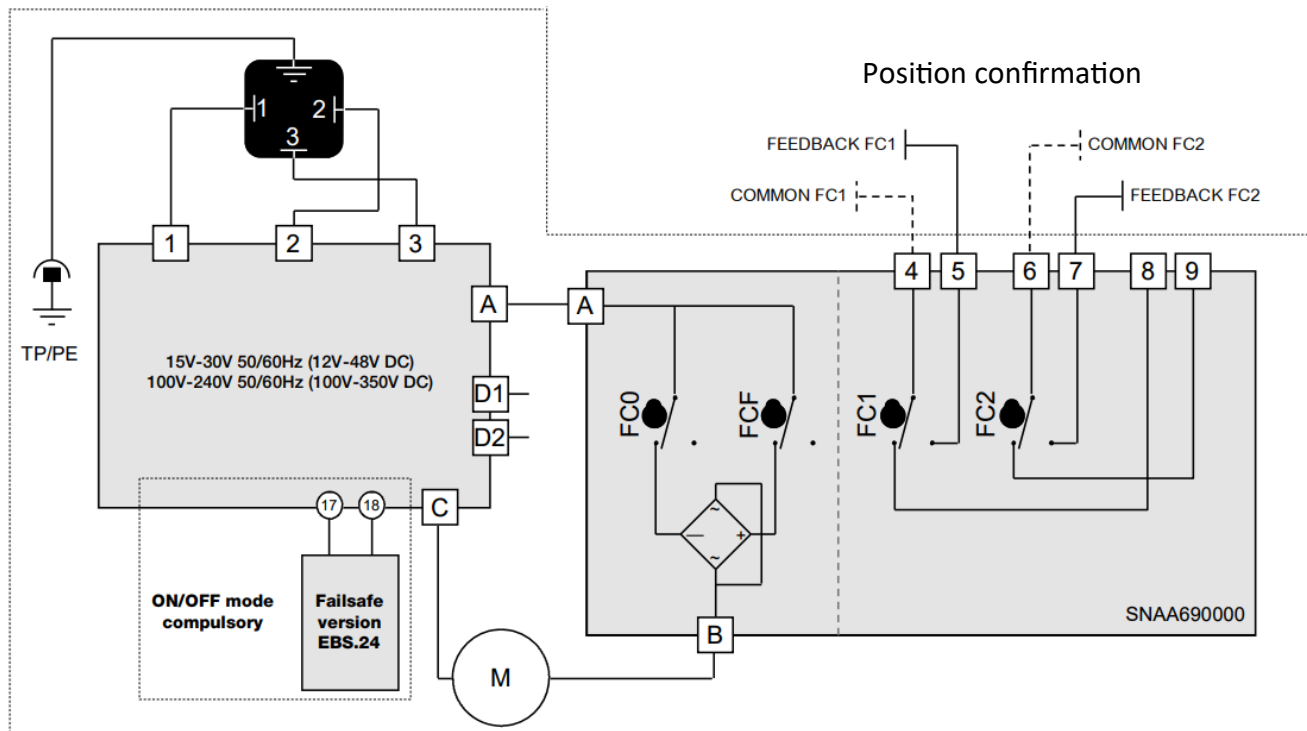
Power open, power close, stays put on loss of external power.

#### ON/OFF Mode



#### Electrical Connections

FCO	Open position limit switch
FCF	Closed position limit switch
FC1	Open indication limit switch
FC2	Closed indication limit switch
D1/D2	Failure report terminals (Max 24VDC 3A)



### ER20 PLUS FAILSAFE ELECTRIC ACTUATOR

Power open, power close, fails safe on loss of external power.

Failsafe function is achieved with a factory fitted internal rechargeable industrial battery that provides alternate energy to power the actuator's motor should external power not be available. The failsafe version can be ordered as either fail open or fail close on loss of power.

The status of the battery is monitored and terminals are provided so that a battery fault warning can be received from the actuator.

#### Advantages:

Battery back-up is internal and requires no additional wiring (unless fault relay is utilised).

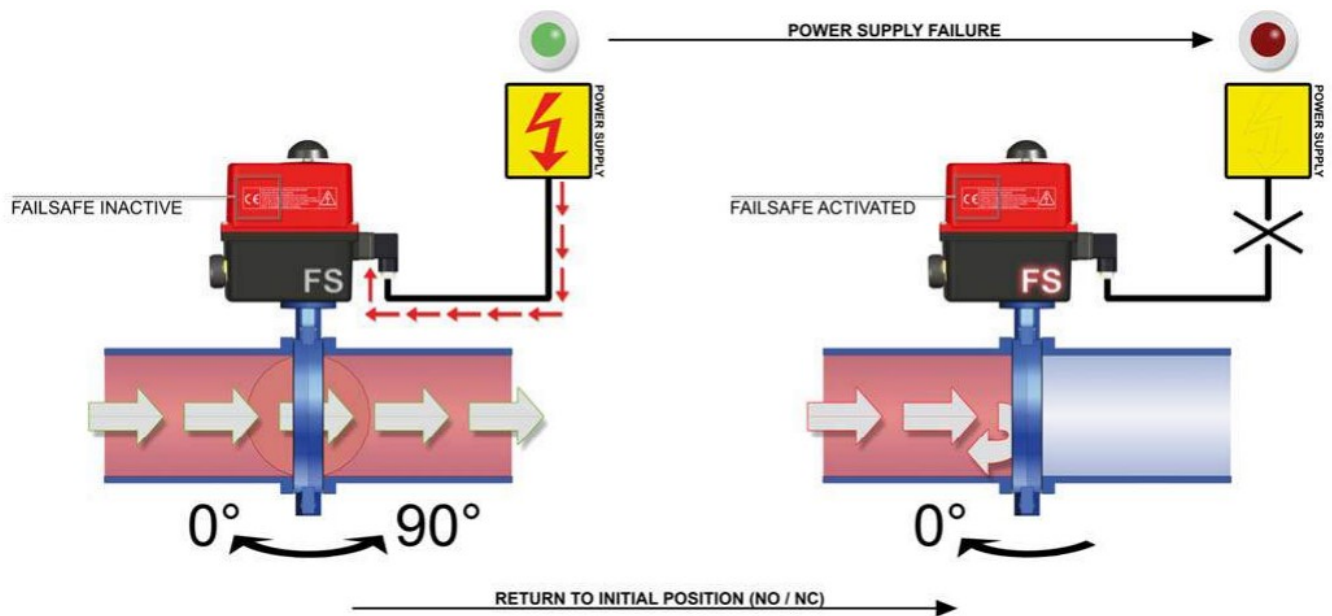
Cost effective failsafe solution

Continuous battery status monitoring

Quick and easy replacement of the battery for routine maintenance

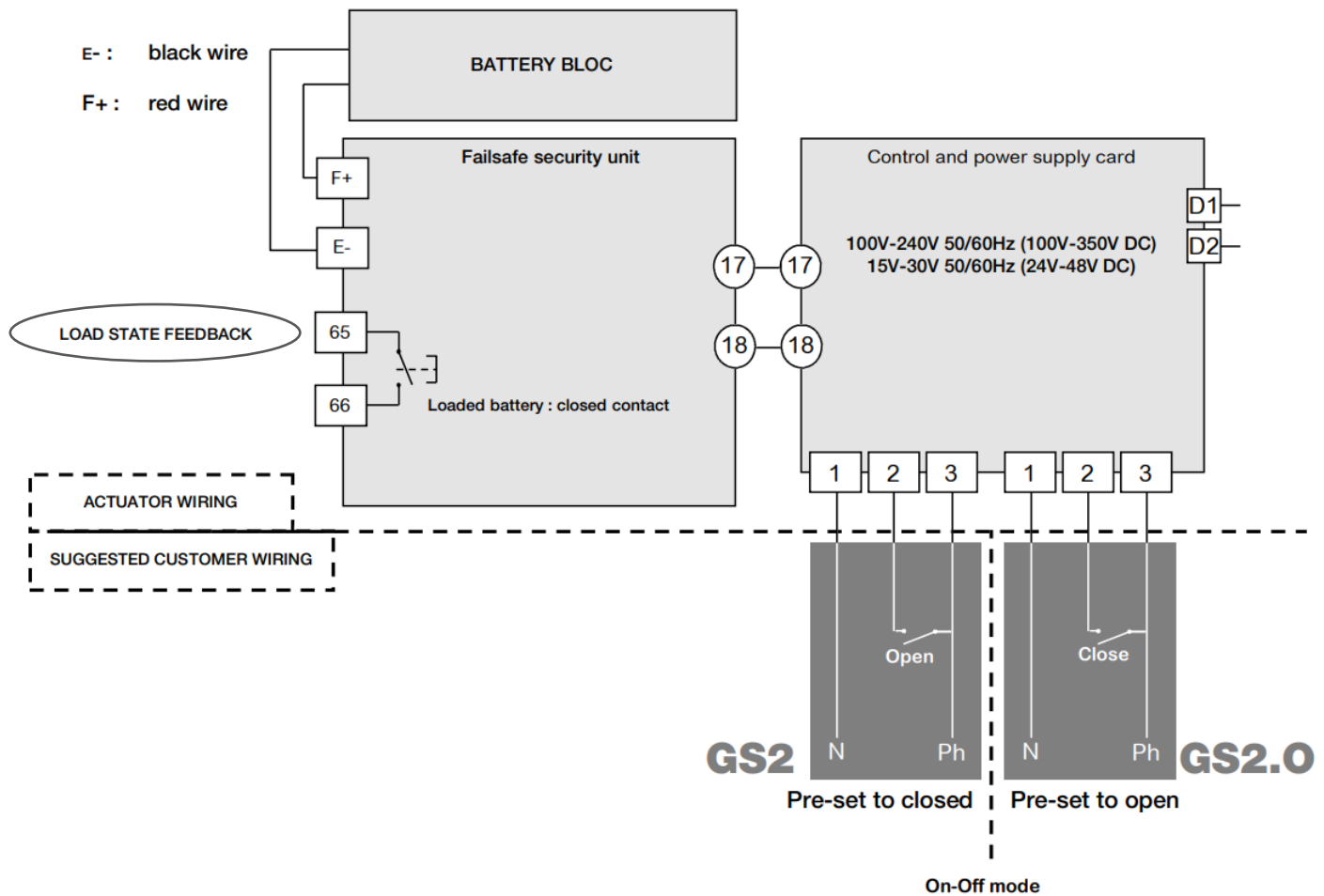
Can be ordered as fail closed, or fail open

Battery failure feedback relay



### ER20 PLUS FAILSAFE ELECTRIC ACTUATOR

Power open, power close, fails safe on loss of external power.



Note: Pre set position is factory set and can not be changed within the actuator, fail open and fail closed versions are different actuators.

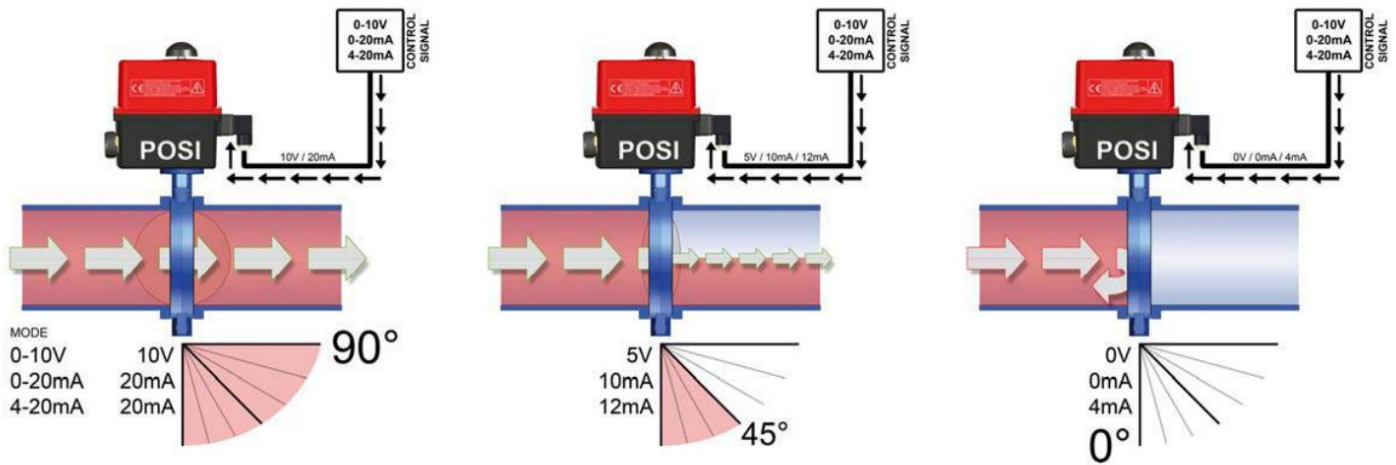
### ER20 PLUS MODULATING ELECTRIC ACTUATOR

Power permanently applied, proportional control

Modulating function is achieved by the internal positioner which compares an analogue input signal with that physical position of the output drive shaft. Movement between 0-90 degrees is based proportionally on the input signal. If a difference exists between the position of the drive shaft relative to the input signal, the positioner drives the actuator to 'zero' the difference. An output signal is provided for closed loop control.

#### Advantages:

- Positioner is internal and requires no additional wiring
- Cost effective modulating solution
- Microprocessor positioner
- Customer configurable control input (0-20mA, 4-20mA or 0-10V)
- Can be configured reverse acting
- Training mode
- Failure feedback relay
- Factory installed positioner



Note: Allow a safety factor of torque x 2 when sizing Valpes modulating actuators

#### Loss of signal with 0-10V control:

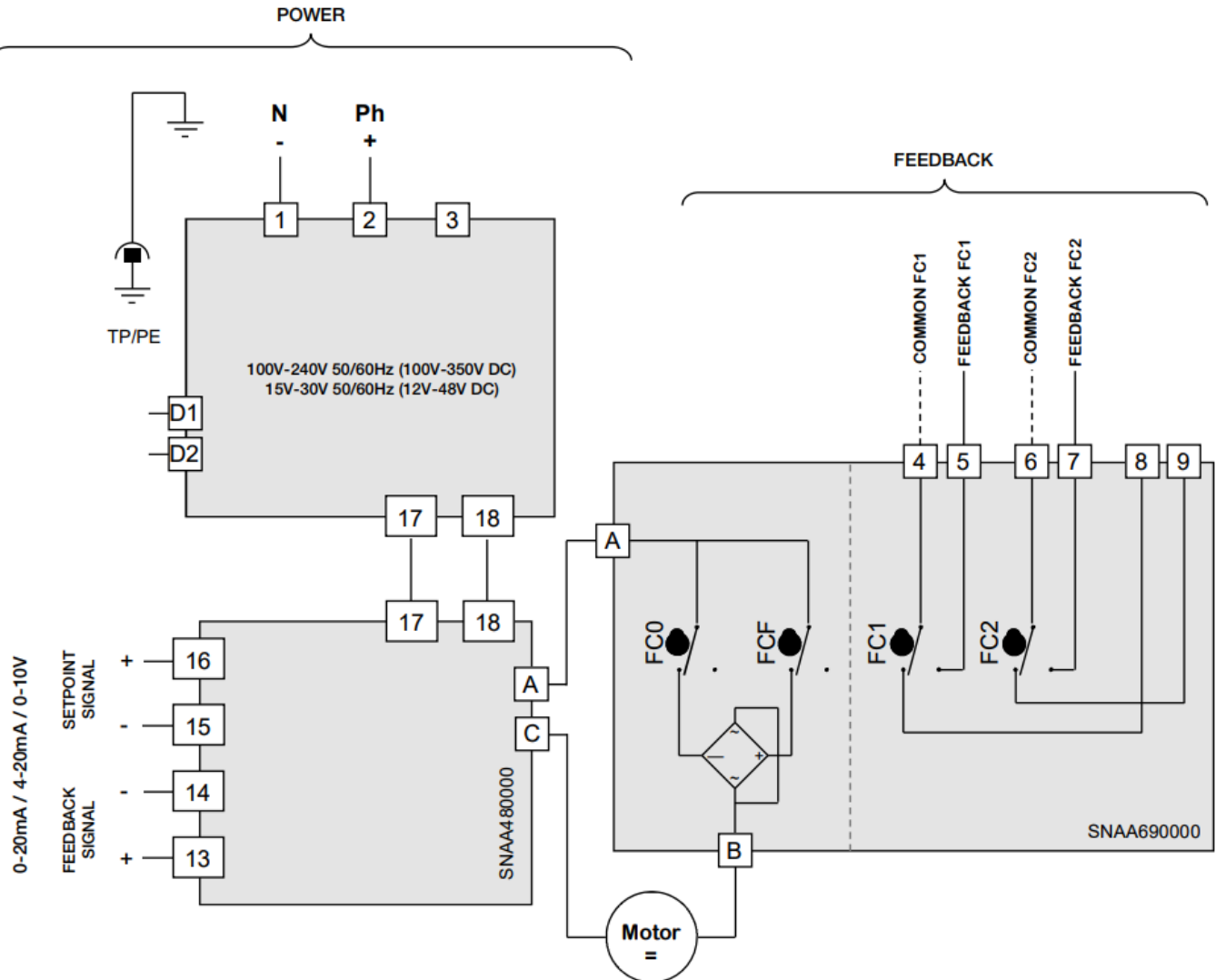
The actuator can be configured to close on loss of control signal, or open.

#### Loss of signal with 4-20mA control:

The actuator will stay put on loss of control signal.

### ER20 PLUS MODULATING ELECTRIC ACTUATOR

Power permanently applied, proportional control



#### NOTES:

Positioner accuracy is 1°.

Input impedance for 0-10V control = 10kOhm.

Input impedance for 4-20mA control = 100 Ohm.

For long cable runs, induction current in cable must be < 1mA.

There **MUST NOT** be a ground/ earth connection between the power and control signal terminals.

Terminal temperatures can reach +90C.

FCO	Open position limit switch
FCF	Closed position limit switch
FC1	Open indication limit switch
FC2	Closed indication limit switch
D1/D2	Failure report terminals (Max 24VDC 3A)

**ER PLUS Series Dimensions (mm)**

