


VR•VS

Electric actuator



UK Installation and Operation Manual



25Nm ∇ 300Nm	Indice de protection IP68 Enclosure protection	Facteur de marche 50% Duty cycle	Anticondensation intégrée  Anticondensation heater	Système de sécurité FAIL SAFE Security system	Positionnement POSI Positioning	3 POSITIONS
----------------------------------	---	---	--	--	--	------------------------------

ARA[®]
PNEUMATIK
ul. Wyciągowa 38, 53-012 Wrocław
tel. 71 364 72 82, ara@arapneumatik.pl
www.arapneumatik.pl



Index

- General information 3**
 - Description
 - Transport and storage
 - Maintenance
 - Warranty
 - Return of goods
 - Safety instructions
- Position indicator 4**
- Dimensions 5**
- Mounting on valve 6**
- Emergency manual override 6**
- Electric wiring 7**
 - Warnings
 - Electronic boards
 - Wiring Instructions
 - 230V Electric diagram
 - 3-phase 400V Electric diagram
- FAILSAFE model 12**
 - Description
 - Electronic board
 - LED meaning
 - Electric diagram
- POSI model 14**
 - Description
 - Wiring Instructions
 - Electronic board
 - Electric diagram
 - Parameter selection sequence
- 3-position model 18**
 - Description
 - Contacts state
 - Electric diagram
- GPS model 20**
 - Description
 - Warnings
 - Parameter selection sequence
 - Electric diagram
- GFS model 22**
 - Description
 - Electric diagram
- Exploded view 23**
- Technical data 24**
 - VR specification
 - VS specification

This product meets the European Directive 2012/19/UE about electrical and electronic equipment (DEEE). It mustn't be mixed with common waste. Please, recycle or dispose of them according to your country laws.



DESCRIPTION

These electric actuators have been designed to perform the control of a valve with 90° rotation. Please consult us for any different application. We cannot be held responsible if the mentioned actuators are used in contradiction to this advice..

TRANSPORT AND STORAGE

- The forwarding agents being held as responsible for damages and delays of the delivered goods, the consignees are obliged to express if applicable their reserves, prior to accept the goods. The goods delivered directly ex works are subject to the same conditions.
- The transport to the place of destination is carried out by using rigid packing material.
- The products must be stored in clean, dry, and ventilated places preferably on appropriate palettes or shelves.

MAINTENANCE

- Maintenance is ensured by our factory. If the supplied unit does not work, please check the wiring according to the electric diagram as well as the power supply of the concerned electric actuator.
- For any question, please contact our after-sales service.
- To clean the outside of the actuator, use a lint and soapy water. **DO NOT USE CLEANING PRODUCT WITH SOLVENT OR ALCOHOL**

WARRANTY

- Our products are thoroughly tested and set in factory.
- These products are 3-year warranty from the manufacturing site delivery date or 50,000 actuations against all types of manufacturing and material faults (operating time and model class according to standard CEI34).
- The said guarantee covers solely replacement or – at our full sole discretion - repair, free of charge, of those components of the goods supplied which in our sole view present proven manufacturing defects.
- This warranty excludes any damage due to normal product usage or friction and does not include any modified or unauthorized repair for which we will not accept any request for damage (either direct or indirect) compensation (for full details see our website).
- The guarantee does not cover the consequences of breakdown and excludes any payments for indemnities. The accessories, consumables (batteries...) and adaptations are excluded from the guarantee. In the case where a customer has not proceeded to payments within the agreed period, our guarantee will be suspended until the delayed payments have been received and with the consequence that this suspension will not prolong the guarantee period in any case.
- All sales subject to our terms to be found on our website.

RETURN OF GOODS

- The customer is obliged to check the conformity of the goods with regard to their definition at the time of delivery.
- The acceptance of the goods by the purchaser disclaims the supplier of all responsibility if the purchaser discovers any non-conformity after the date of acceptance. In such case, the repair cost will be borne by the purchaser who will also exclusively bear all financial consequences of any resulting damage. Returned goods will only be accepted if our prior agreement has been given to this procedure : the goods must be sent free of all cost and being shipped solely and in their original packing. The returned goods will be credited to the purchaser with a reduction of 40% on the unit's price charged in accordance with the original invoice of the returned goods.

SAFETY INSTRUCTIONS



To be read prior to the installation of the product

- The electric power supply must be switched-off before any intervention on the electric actuator (i.e. prior demounting its cover or manipulating the manual override knob).
- Any intervention must only be carried out by a qualified electrician or other person instructed in accordance with the regulations of electric engineering, safety, and all other applicable directives.
- Strictly observe the wiring and set-up instructions as described in the manual: otherwise, the proper working of the actuator can not be guaranteed anymore. Verify that the indications given on the identification label of the actuator fully correspond to the characteristics of the electric supply.
- Respect all safety rules during fitting, dismantling and porting of this apparatus.



- Do not mount the actuator « upside down ». Risks:
 - Declutching mechanism failure
 - Possible flow of the grease on the electronic board
- Do not mount the actuator less than 30 cm of an electromagnetic disturbances source.
- Do not position the equipment so that it is difficult to operate the disconnecting device.

Position indicator

VR model

Modular position indicator with three removable position markers (3 yellow + 2 black), adjustable according the type of valve to be actuated.



Valve	0°		90°		180°	
2-way: 0° = closed 90° = open						
3-way (L) :						
3-way (T) : Ex : T1						

VS model

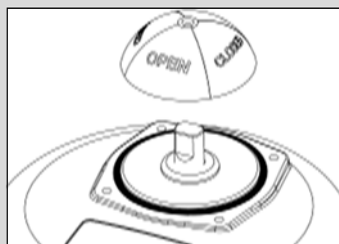
2- position spherical indicator



Sense of window for standard mounting:

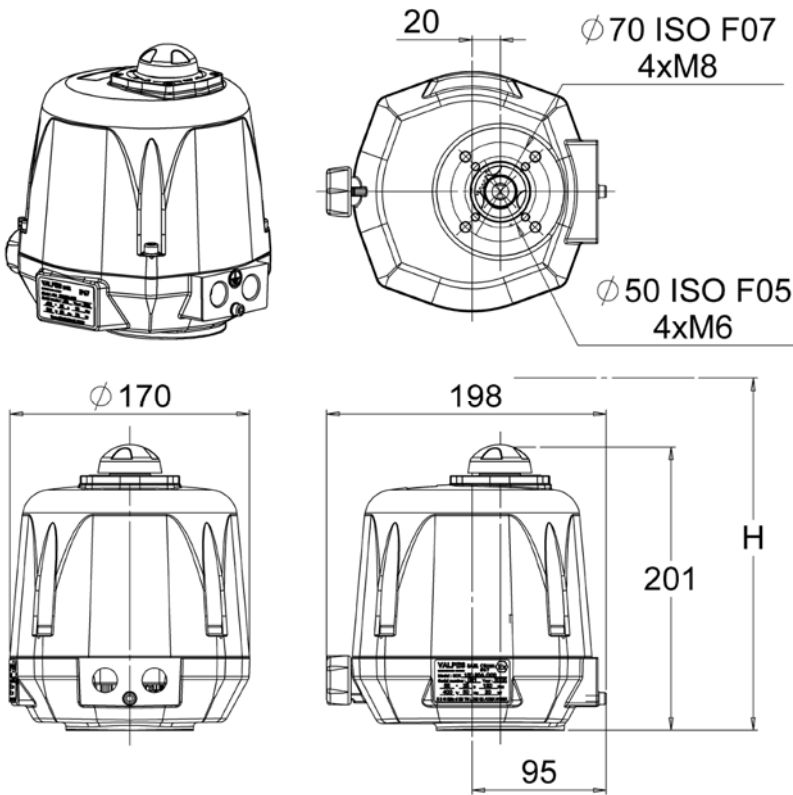


Mounting of the position indicator (appendix p.47 mark 1) : mount the seal ring and the indicator then the window with the 4 screws M4.



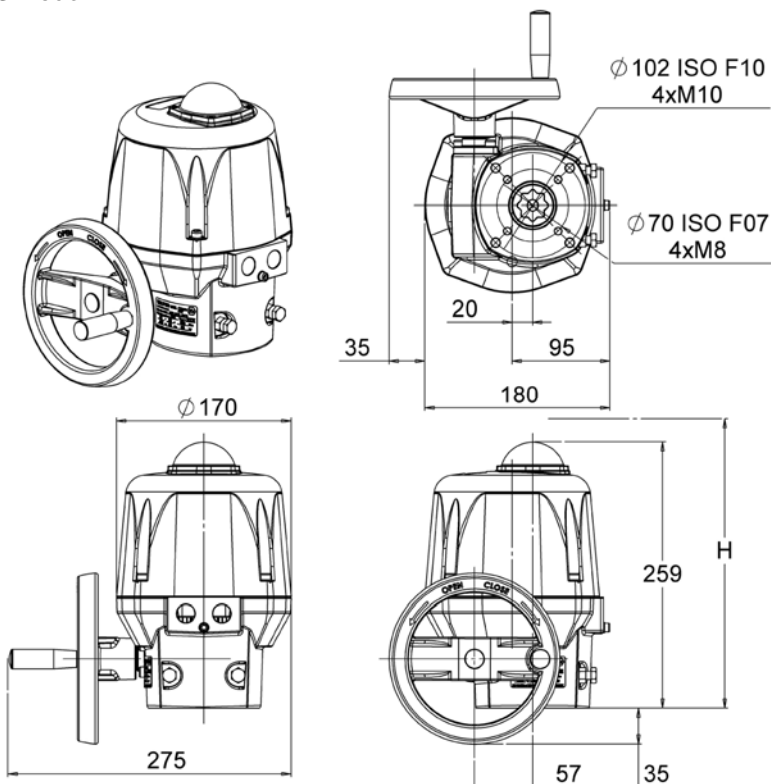
Dimensions

VR model



Square / Star	17mm	
Drive depth	19mm	
ISO5211 connection	F05	F07
Diameter	50mm	70mm
M threaded	M6	M8
Depth	15mm	17mm
Screw number	4	4
Screws maximal length (+ valve connection plate height)	10mm	12mm

VS model



Square / Star	22mm	
Drive depth	25mm	
ISO5211 connection	F07	F10
Diameter	70mm	102mm
M threaded	M8	M10
Depth	19mm	24mm
Screw number	4	4
Screws maximal length (+ valve connection plate height)	14mm	16mm

Mounting on valve

VR model:

Possible fixations : F05 (4xM6 with $\varnothing 50$) and F07 (4xM8 with $\varnothing 70$), star 17, depth 19mm.
Necessary height above the valve for the mounting of the actuator : H=300mm.

VR model:

Possible fixations : F07 (4xM8 with $\varnothing 70$) and F10 (4xM8 with $\varnothing 102$), star 22, depth 25mm.
Necessary height above the valve for the mounting of the actuator : H=360mm.

Mounting / disassembly of the cover and position indicator

For the wiring and setting of the actuator, it is necessary to remove the cover.

Mounting of the cover (appendix p.47 mark 2) : make sure that the seal ring (appendix p.47 mark 7) is correctly placed in its position, mount the cover and tighten the 4 screws M6 (appendix p.47 mark 3, torque : max. 6Nm).

Mounting of the position indicator for VR (appendix p.47 mark 1) : fit the indicator onto the outgoing axle (according the diagram p.28).

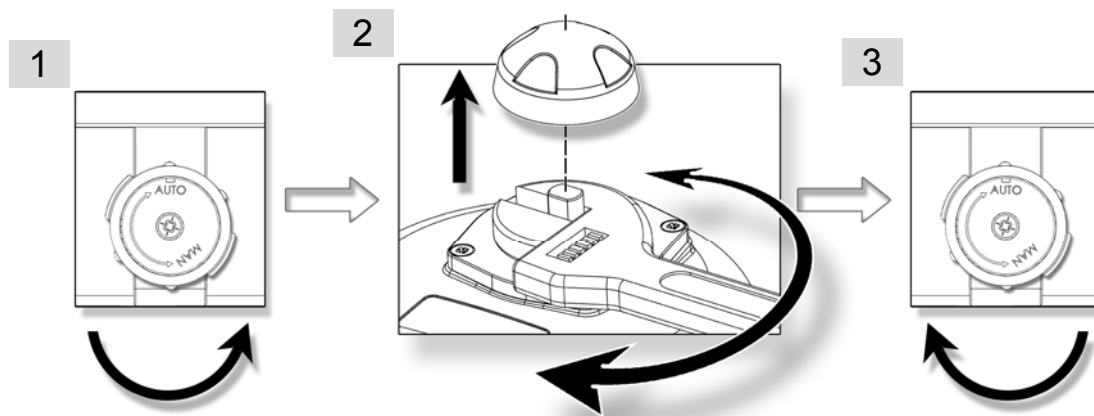
Mounting of the position indicator for VS (appendix p.47 mark 1) : mount the seal ring and the indicator then the window with the 4 screws M4 (according the diagram p.28).

Emergency manual override



The priority functioning mode of this actuator is electric. Be sure that the power supply is switched off before using the manual override.

VR model:



1. Turn the knob to position MAN (counter-clockwise) and hold it in position.
2. Turn the outgoing drive shaft of the actuator with the help of an adjusting spanner.
3. In order to re-engage the reduction, release the knob (spring return).

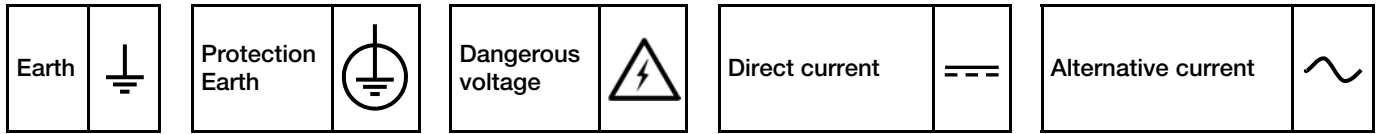
VS model:

No declutching is required, the hand wheel has simply to be turned (appendix p.47 mark 10).

The end mechanical stops are pre-set to 90° and stuck (Tubetanche Loctite 577 or equivalent). It is possible to adjust then by moving the 2 screws M8 (appendix p.47 mark 18) but you need to stick them again in order to ensure a proper sealing.

Electric wiring

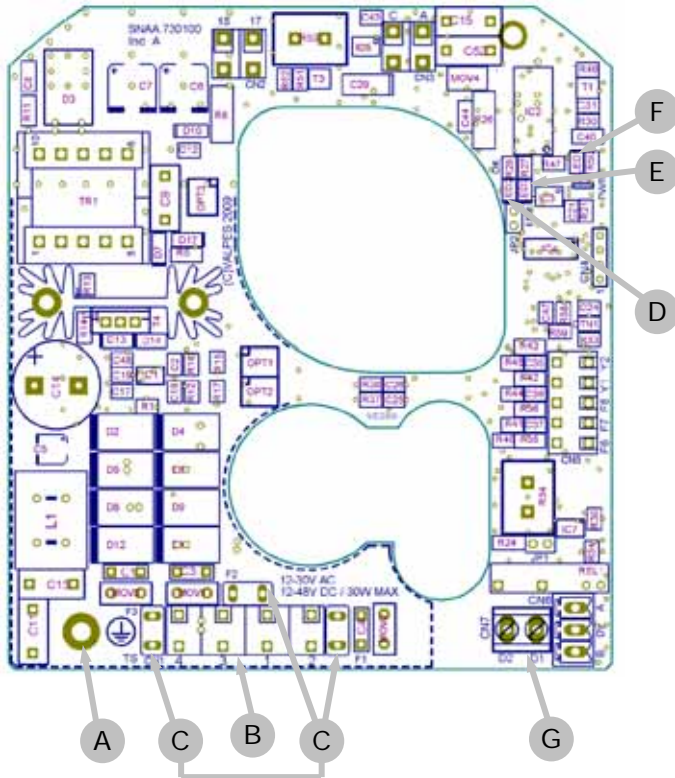
Warnings



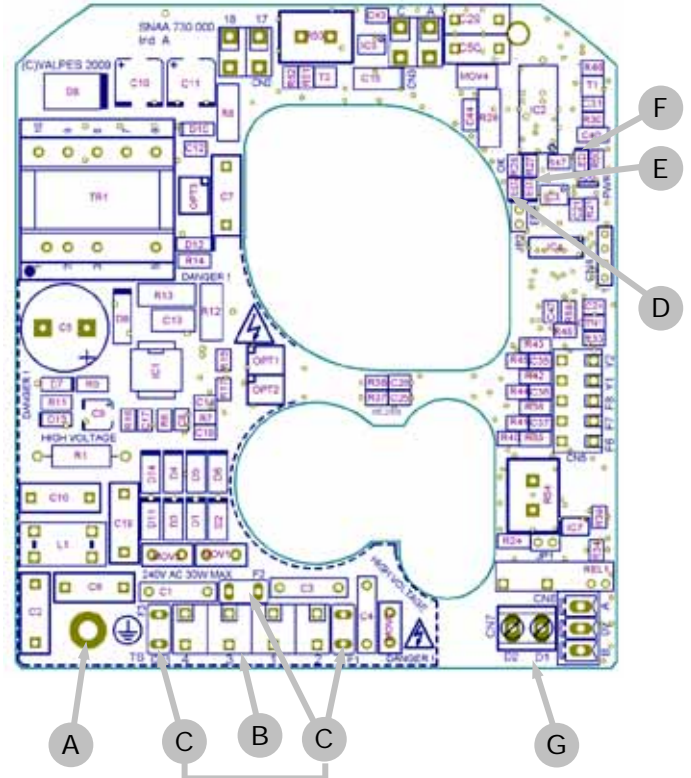
- Use only one relay for one actuator.
- As stipulated in the applicable regulation, the connection to earth contact is compulsory for devices with working voltages exceeding 42V.
- The actuator is being always under power, it must be connected to a disconnection system (switch, circuit breaker) to ensure the actuator's power cut. The latter must be closed to the actuator, easy to reach and marked as being the disconnecting device for the equipment.
- The temperature of the terminal can reach 90 °C.
- To optimize the installation security, please connect the failure feedback signal (D1 and D2).
- In case of long cables, please note the induction current shall not exceed 1mA.
- The actuator can tolerate temporary overvoltage of the electrical grid up to $\pm 10\%$ of its nominal system operating voltage.
- The selection of the cables and cable glands: the maximal operating temperature of the cables and cable-glands must be at least 110 °C.
- It is necessary to connect all actuators to an electrical cabinet. The power supply cables must have the RATED diameter for the maximum current supported by the actuator and comply with IEC 60227 or IEC 60245 standards.
- In order to ensure the IP68 tightness, the cable glands must be used (7 to 12mm cable). Otherwise, the cable glands must be replaced by a ISO M20 IP68 cap. A cable gland is tight when it has been tighten by one turn ahead of contact between rubber seal and nut.
- The auxiliary limit switches must be connected with rigid wires. If the applied voltage is higher than 42V, the user must foresee a fuse in the power supply line.
- The feedback switches must be powered with the same voltage. The reinforced insulation of the motor control allows voltages up to 250V AC/DC.

Electronic boards

SNA730100
15V-30V 50/60Hz (12V-48V DC)



SNA730000
100V-240V 50/60Hz (100V-350V DC)



Rep.	Designation	Rep.	Designation
A	Earth screw	E ²⁾	LED 3 : Detected failure
B	Pilot and power supply terminals	F	LED 1 : Power presence
C ¹⁾	Card protection fuses	G	Failure report terminal strip (24V DC / 3A max)
D	LED 2 : microprocessor ok		

1) Fuses for multivolt card :

- Card SNA730100 : 5A / T 125V (Littelfuse 39615000000)
- Card SNA730000 : 3,15A / T 250V (Multicomp MST 3,15A 250V)

2) Possible defects : limitation of current, thermic limitation or program error

- => check that the valve torque is not superior to the maximum torque stand by the actuator
- => check that the actuator do not exceed the duty cycle indicated (possible overhear)
- To re-start the actuator, reverse the sense of rotation or switch the power off and on.

Wiring Instructions

Our cable glands are designed for cables with a diameter between 7mm and 12mm.
The actuator can support MAINS supply voltage fluctuations up to $\pm 10\%$ of the nominal voltage.
It is necessary to connect all actuators to an electrical cabinet

- Remove the position indicator, unscrew the four screws and take off the cover.

SUPPLY AND CONTROL WIRING

- Ensure that the voltage indicated on the actuator ID label corresponds to the voltage supply.
- Connect the wires to the connector in accordance with the required control mode. (see diagram p.34 & 35)
- To ensure the correct functioning of the anti-condensation heaters, the actuator must be permanently power supplied

WIRING OF THE FEEDBACK SIGNAL (Except POSI: p.38 & GPS: p.44)

Our actuators are equipped with two simple limit switch contacts normally set either in open position, either in closed position (see DSBL0470 : 230V and DSBL0497•DSBL0498: 400V wiring diagrams inside the glove). As per factory setting, the white cam is used to detect the open position (FC1) and the black cam is used to detect the closed position (FC2).

The auxiliary limit switches must be connect with rigid wires. If the applied voltage is higher than 42V, the user must foresee a fuse in the power supply line.

The voltages applied to each feedback switch (FC1 and FC2, SNAA690000 electronic board) must be exactly the same .The reinforced insulation between the feedback signal and the motor control authorizes voltages up to 250V AC/ DC.

- Unscrew the right cable gland and insert the cable.
- Remove 25mm of the cable sheath and strip each wire by 8mm.
- Connect the wires to the terminal strip in accordance with the diagram p.34 (230V) or p.35 (400V).
- Tighten the cable gland (Ensure that it's well mounted to guaranty the proofness).

SETTING OF END LIMIT SWITCHES

The actuator is pre-set in our factory. Do not touch the two lower cams in order to avoid any malfunctioning or even damage to the actuator.

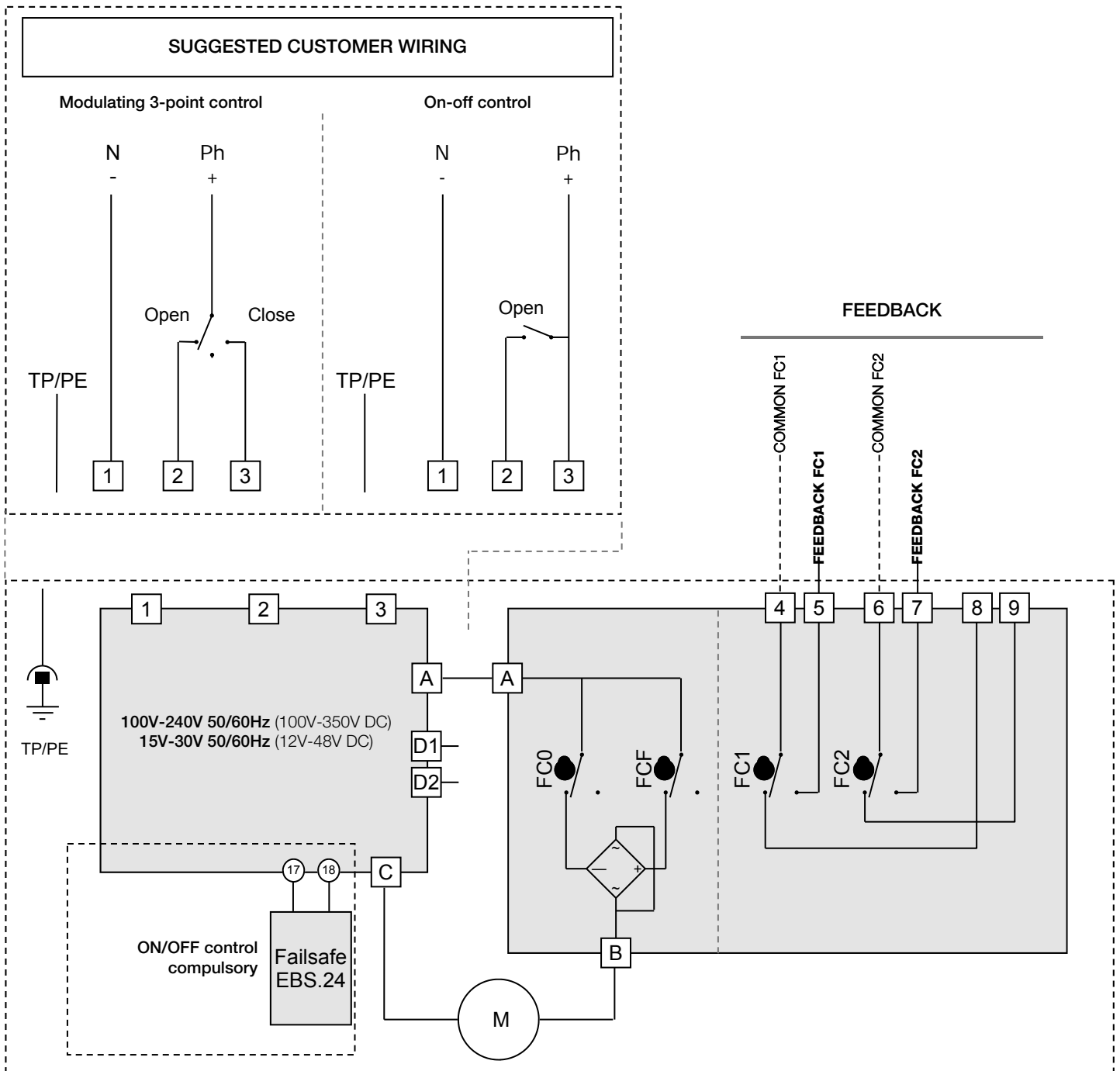
- To adjust the position of the auxiliary contacts, make rotate the two superior cams by using the appropriate wrench.
- Re-mount the cover, fasten the four screws and attach the position indicator.

230V electric diagram

Rep.	Designation	Rep.	Designation
FCO	Open limit switch	FC1	Auxiliary limit switch 1
FCF	Close limit switch	FC2	Auxiliary limit switch 2
D1/D2	Failure report Terminal strip (24V DC / 3A max)		



- The terminal temperature can reach 90 °C
- The used wires must be rigid (feedback voltages: 4 to 250V AC/DC)



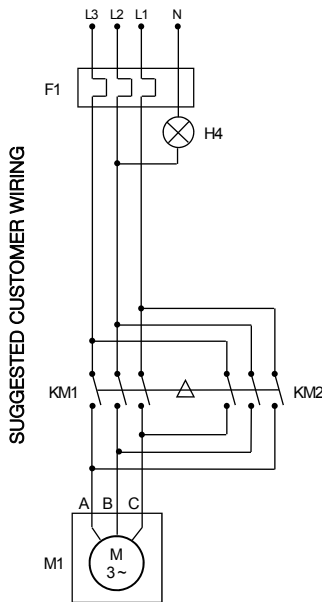
3-phase 400V electric diagram

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		

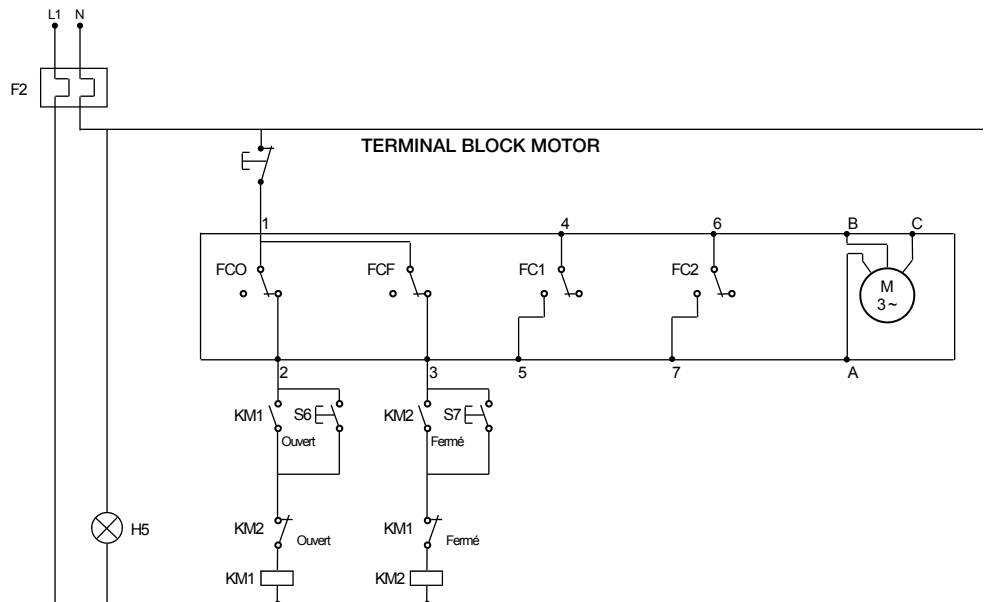


- The terminal temperature can reach 90 °C
- The used wires must be rigid (feedback voltages: 4 to 250V AC/DC)

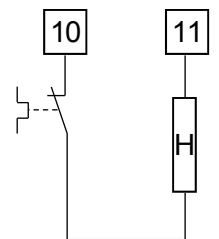
POWER SUPPLY (400V 3-phase 50/60Hz)



CONTROL (230V AC)



ERT.B



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

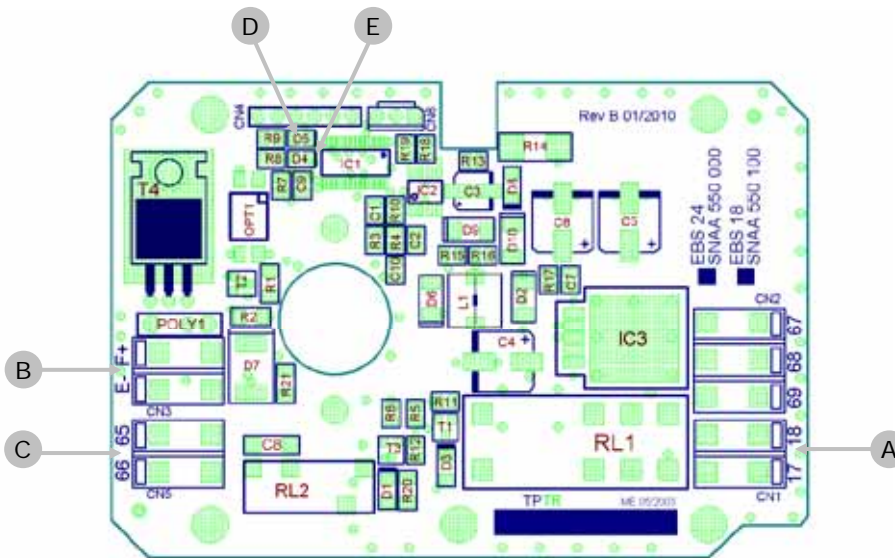
FAILSAFE: description



Following a power failure, the Failsafe unit will reset after 3 minutes.

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. Failsafe option required ON/OFF mode.

FAILSAFE: electronic board



Rep.	Designation
A	24V DC terminal strip
B	Block battery terminal strip
C	State feedback terminal strip (load or battery failure)
D	Green LED
E	Red LED

Voltage	24V DC
Rates current	0,8A
Maximal current	2,4A
Initial loading time	14h max.
Load state feedback relay	24V DC - 1A max
Temperature	-20 °C to +40 °C

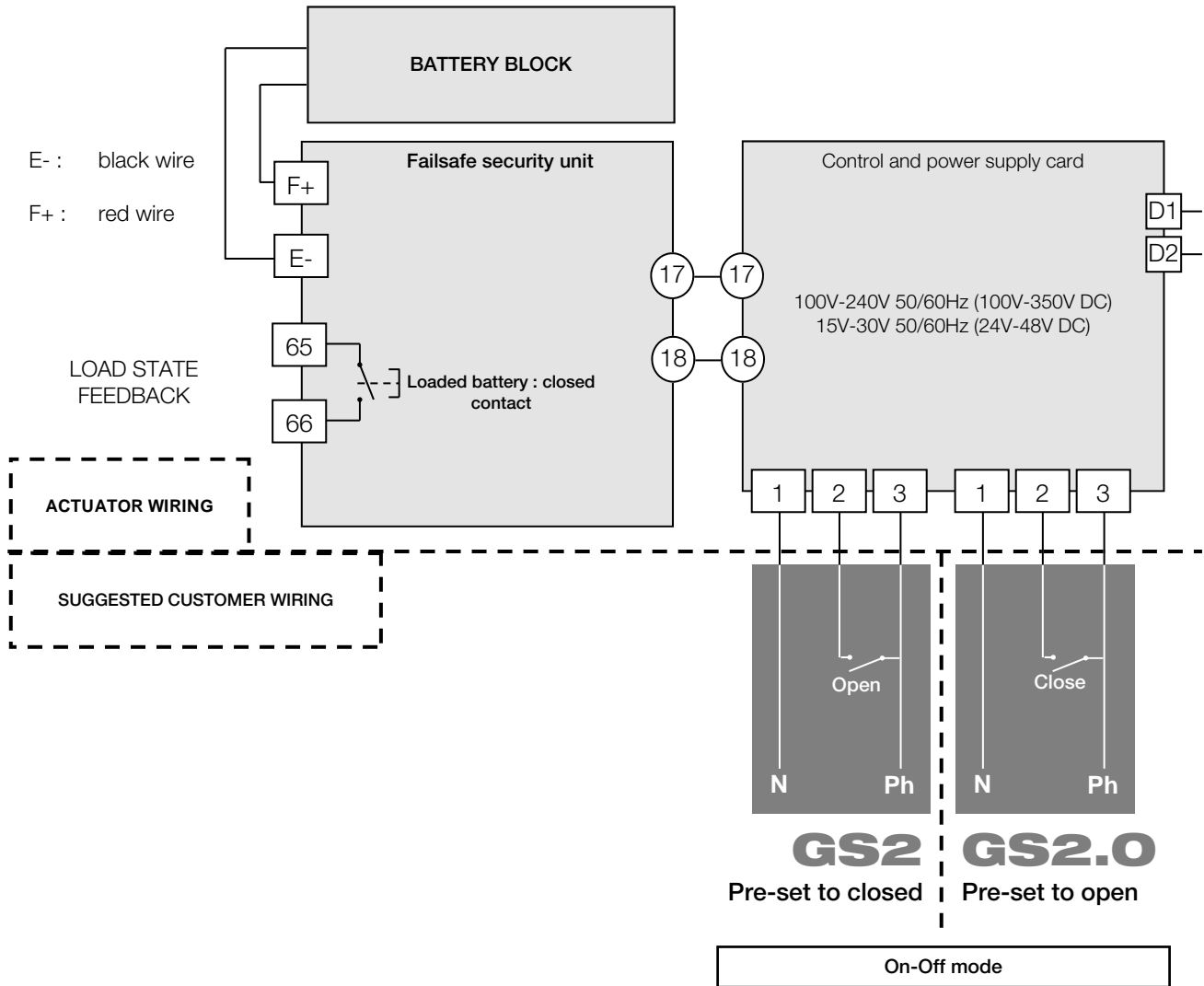
FAILSAFE: led meaning

Led				
Red	D5		Blinks/off/Blinks...	Battery disconnected or out of service
Green	D4		Off	
Red	D5		Blinks	Battery loading cycle in progress (max 14h)
Green	D4		On	
Red	D5		Off	Battery loading cycle finished
Green	D4		On	
Red	D5		Off	Actuator electrical supply during 3 minutes (failure mode)
Green	D4		Blinks rapidly	
Red	D5		Blinks rapidly	Microcontroller failure
Green	D4		Off	

FAILSAFE: electric diagram



- The terminal temperature can reach 90 °C
- The used wires must be rigid (feedback voltages: 4 to 250V AC/DC)
- 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.



POSI: description

Various control types (control signal on terminals N°15 and N°16)

On request, our cards can be set in factory. The consign and the feedback signal can have different forms (current or voltage). Without any information from the customer, the cards are set for current 4-20mA (control + feedback signal).

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.

POSI: wiring instructions



- Actuator pre-set in factory.
- In order to avoid electromagnetic perturbations, it is compulsory to use shielded cables (cables longer than 3m).

- Unscrew the right gland and pass the cable.
- Connect the input signal between terminals 15 and 16 (attached p.47 mark.B). Terminal 15 is the negative polarity (-) and terminal 16 is the positive polarity (+).
- Connect the output signal between terminals 13 and 14.(attached p.47 mark.C). Terminal 13 is the positive polarity (+) and terminal 14 is the negative polarity (-).
- Tighten the cable gland (Ensure that it's well mounted to guaranty the proofness).

The feedback must be connect with rigid wires. If the applied voltage is higher than 42V, the user must foresee a fuse in the power supply line.

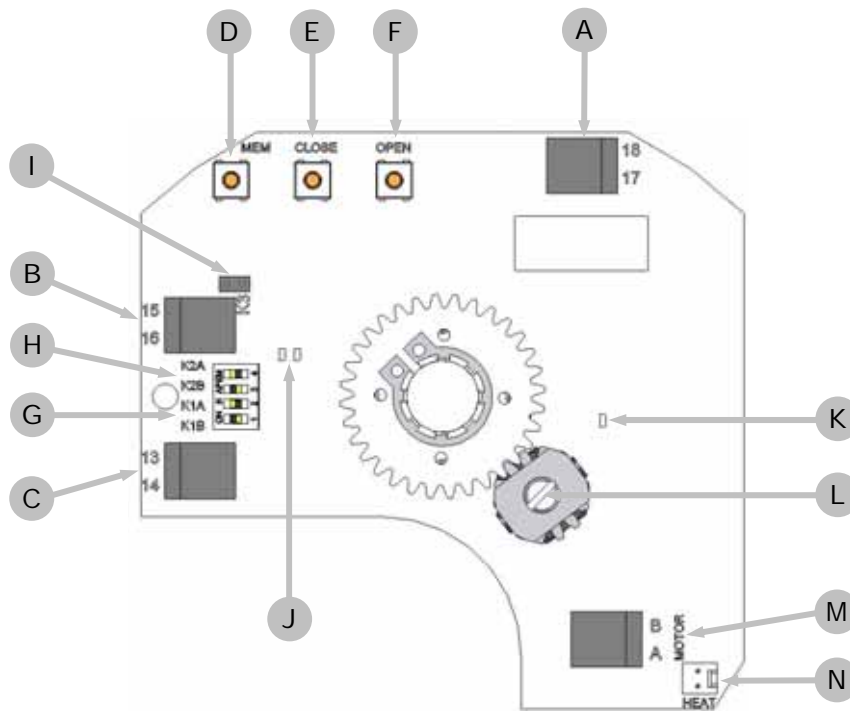
Factory setting : by default, 4-20mA input and output signals with normal rotation sense.

To proceed to a new setting of the card : please see page 41, "Parameter selection sequence".

To check the proper operation of the card : please see page 41, "Normal operating mode".

POSI: electronic board

P5 positioning board 4-20mA / 0-10V
(0-20mA on request)



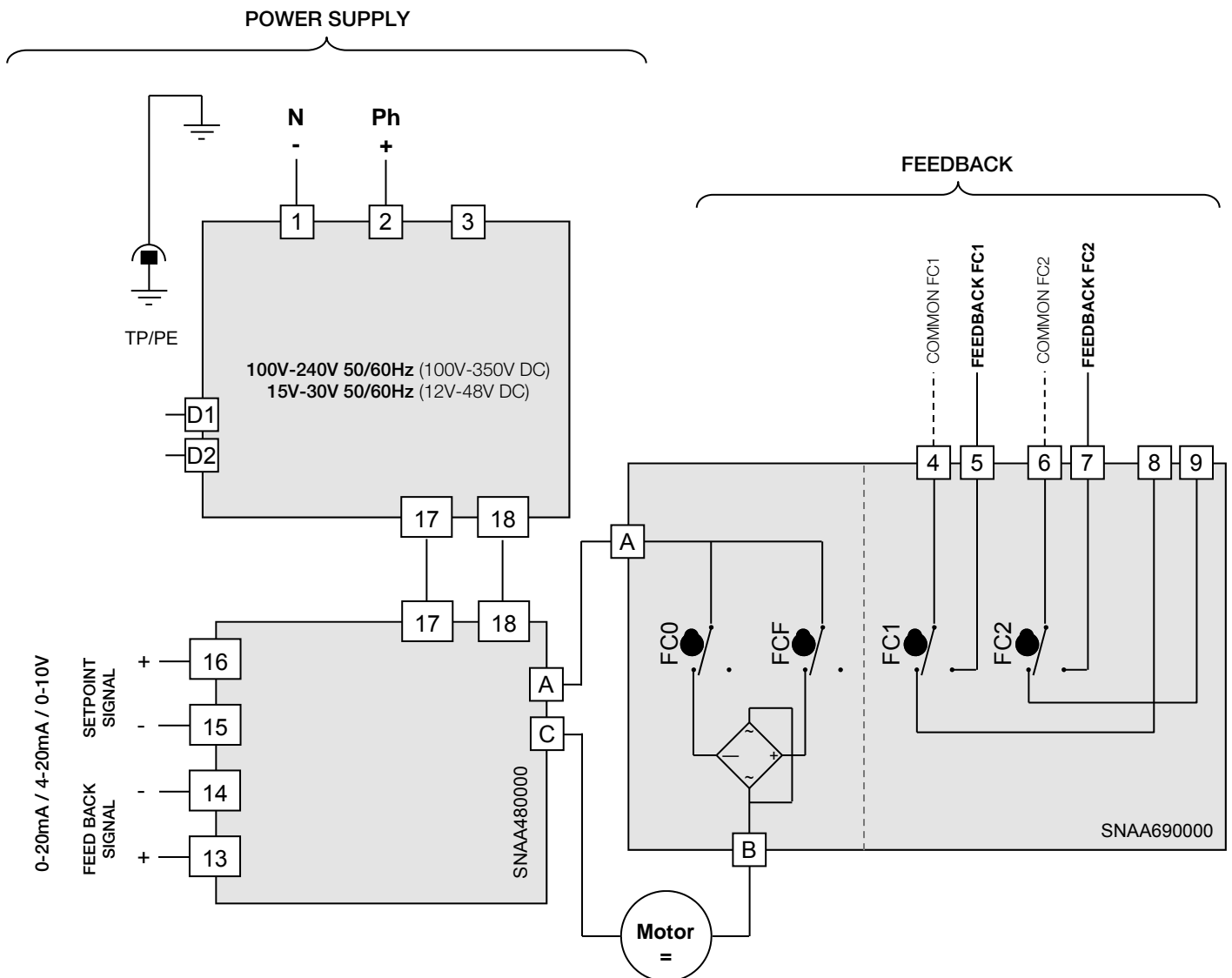
Rep.	Designation	Rep.	Designation
A	24V AC/DC power supply terminal trip	H	K2 shunt
B	Instruction terminal trip	I	K3 shunt
C	Feed back terminal trip	J	Green and red LEDs
D	Adjustment button MEM	K	Yellow LED : power supply indication
E	Adjustment button CLOSE	L	Potentiometer
F	Adjustment button OPEN	M	Motor connexion
G	K1 shunt	N	Heating resistor connector

POSI: electric diagram

Rep.	Designation	Rep.	Designation
FC0	Open limit switch	FC1	Auxiliary limit switch 1
FCF	Close limit switch	FC2	Auxiliary limit switch 2
D1/D2	Failure report Terminal strip (24V DC / 3A max)		



- For GPS models, refer to the section p.44 et 45.
- 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 power supply wiring, the induction current generated by the wires mustn't be higher than 1mA.
- The control voltage must be S.E.L.V. (Safety Extra Low Voltage).
- No common earth/ground connexion between the control (input and output signal) and the alimentation. (Type 0-20 or 4-20mA : 5V DC max.)



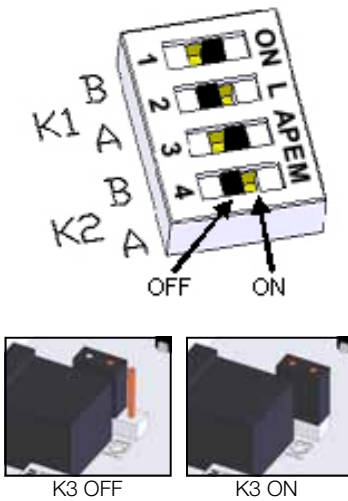
- The card resolution is 1°
- 10 kOhm input impedance if control with voltage (0-10V) and 100 Ohm input impedance if control with current (0-20mA ou 4-20mA)

! Before programming the Positioning unit make sure you take into consideration the GPS specific parameters as detailed in pages 44 to 45.

POSI: parameter selection sequence

1 K1, K2 and K3 shunts positioning

Position the shunts as follows (before modification, switch off the card):



Setpoint signal	Feedback signal	Schunt K1		Schunt K2		Schunt K3
		A	B	A	B	
0-10V	0-10V	ON	OFF	ON	OFF	OFF
0-10V	0-20mA	ON	OFF	OFF	ON	OFF
0-10V	4-20mA	ON	OFF	OFF	ON	ON
4-20mA	0-10v	OFF	ON	ON	OFF	OFF
4-20mA	0-20mA	OFF	ON	OFF	ON	OFF
4-20mA	4-20mA	OFF	ON	OFF	ON	ON
4-20mA	For GPS models only	0-10V	OFF	ON	OFF	OFF
4-20mA		0-20mA	OFF	ON	OFF	ON
4-20mA		4-20mA	OFF	ON	OFF	ON

2 2 Selection of the flow direction of the valve

2.1 Normal flow direction (by default)

- Press the **OPEN** button and apply the operating voltage to the card while keeping this button pressed.
- The **green LED** lights up. Release the **OPEN** button.
- Disconnect the card.



2.2 Inverse flow direction

- Press the **CLOSE** button and apply the operating voltage to the card while keeping this button pressed.
- The **red LED** lights up. Release the **CLOSE** button.
- Disconnect the card.



3 Selection of the type of input control signal

3.1 Voltage control signal 0-10V

- Press the **MEM** button and apply the operating voltage to the card while keeping this button pressed.
- The **red LED** will light up 3 times. Release this button.
- Disconnect the card.



3.2 Current control signal 4-20mA (GPS only)

- Press the **MEM** and **OPEN** buttons and apply the operating voltage to the card while keeping these buttons pressed.
- The **red LED** will light up 3 times. Release these buttons.
- Disconnect the card.



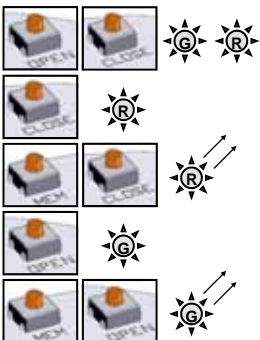
3.3 Current control signal 4-20mA (by default / except GPS)

- Press the **MEM** and **CLOSE** buttons and apply the operating voltage to the card while keeping these buttons pressed.
- The **red LED** will light up 3 times. Release these buttons.
- Disconnect the card.



4 Learning mode

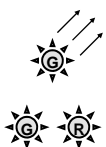
- Press the **OPEN** and **CLOSE** buttons and apply the operating voltage to the card while keeping these buttons pressed.
- The **2 LEDs** will light up. Release these buttons and the **2 LEDs** will run out. The card is now in the learning mode.
- Press the **CLOSE** button to put the valve in its closed position. The **red LED** will light up.
- Store this selected closed position by pushing **MEM + CLOSE**, the **red LED** will light up 2 times as a confirmation of acknowledgement.
- Press the **OPEN** button to put the valve in its open position. The **green LED** will light up.
- Store this selected open position by pushing **MEM + OPEN**, the **green LED** will light up 2 times as a confirmation of acknowledgement.
- Now, the positions selected have been stored. Disconnect the card.



NORMAL OPERATING MODE

- Apply the operating voltage to the card. The **green LED** will light up 3 times.
- Under normal operating conditions, the **green LED** will light up when the drive motor opens the valve, and the **red LED** will light up when the drive motor closes it.
- If **both LEDs** remain ran out, it means that the drive motor has not been triggered.

In the case of an over torque, the motor stops and the **2 LEDs** lights then together to indicate the action of the torque limiter. To re-start it, you must either reverse the sense of rotation, either switch the power off and on.



3 positions: description

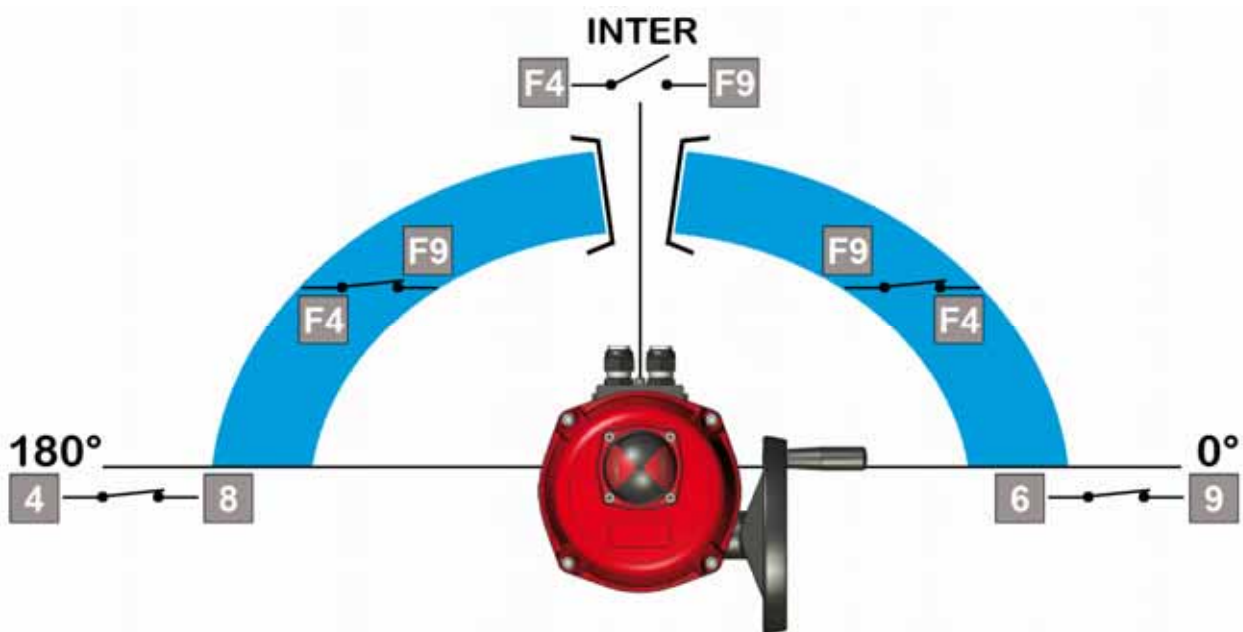
Actuator with a third position

GF3 option allow actuator to be drive and stop in 3 positions. These 3 positions could be between 0° to 180°. In standard actuators are setting in our workshop at 0° 90° 180° that's fit with standard 3 ways ball valve. Others positions still available but customer have to price on the order witch position is request.

These 3 positions are controlled by 4 switches (FCO,FCF,FCIO and FCIF) and 3 switches for feed back signal

Switches FC1,FC2 are NO contact (close the circuit in extreme position) and FC3 is a NC contact (open the circuit in intermediate position).

3 positions: contacts state



	Terminals		
	6 & 9	4 & 8	F4 & F9
0°	Closed	Open	Closed
inter	Open	Open	Open
180°	Open	Closed	Closed

GPS: description

GPS models include a Failsafe unit and a Positioning unit (GS2 connected to GP5).

There are two available settings: 0-10V and 4-20mA.

- Normally closed: 0-10V : 0° \square 0V / 90° \square 10V and 4-20mA : 0° \square 4mA / 90° \square 20mA
- Normally open: 0-10V : 90° \square 0V / 0° \square 10V et 4-20mA : 90° \square 4mA / 0° \square 20mA

GPS: warnings



- Do not connect the input signal directly to terminals 15 & 16 of the Positioning unit (SNAA480000) of the GPS model. The input signal positive (+) must first be connected in series with terminals 67 & 68 of the Failsafe unit (SNAA550000) to ensure the actuator closes in case of power failure. This contact must be wired with positive DC only.
- Be sure you connect the terminal 15 (-) before the terminal 16 (+)
- Following a power failure, the Failsafe unit will reset after 3 minutes.

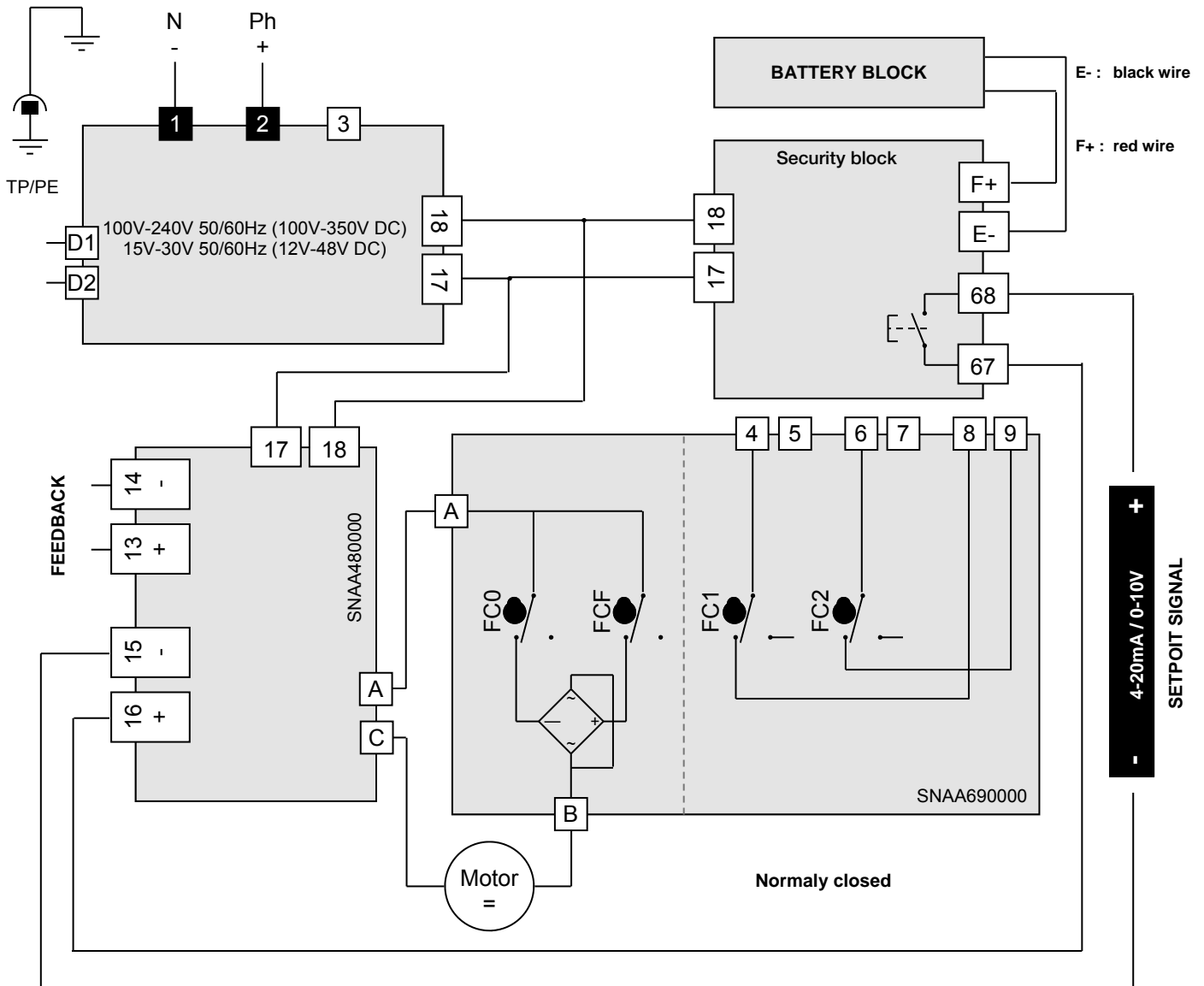
GPS : setup



Terminals 17 & 18 of the Failsafe unit (SNAA550000) must be disconnected prior to any programming of the Positioning unit. Isolate these cables to prevent short-circuits

To proceed at the setup of the card, refer to page 41

GPS: electric diagram



Rep.	Designation	Rep.	Designation
FC0	Open limit switch	FC1	Auxiliary limit switch 1
FCF	Close limit switch	FC2	Auxiliary limit switch 2
D1/D2	Failure report Terminal strip (24V DC / 3A max)		



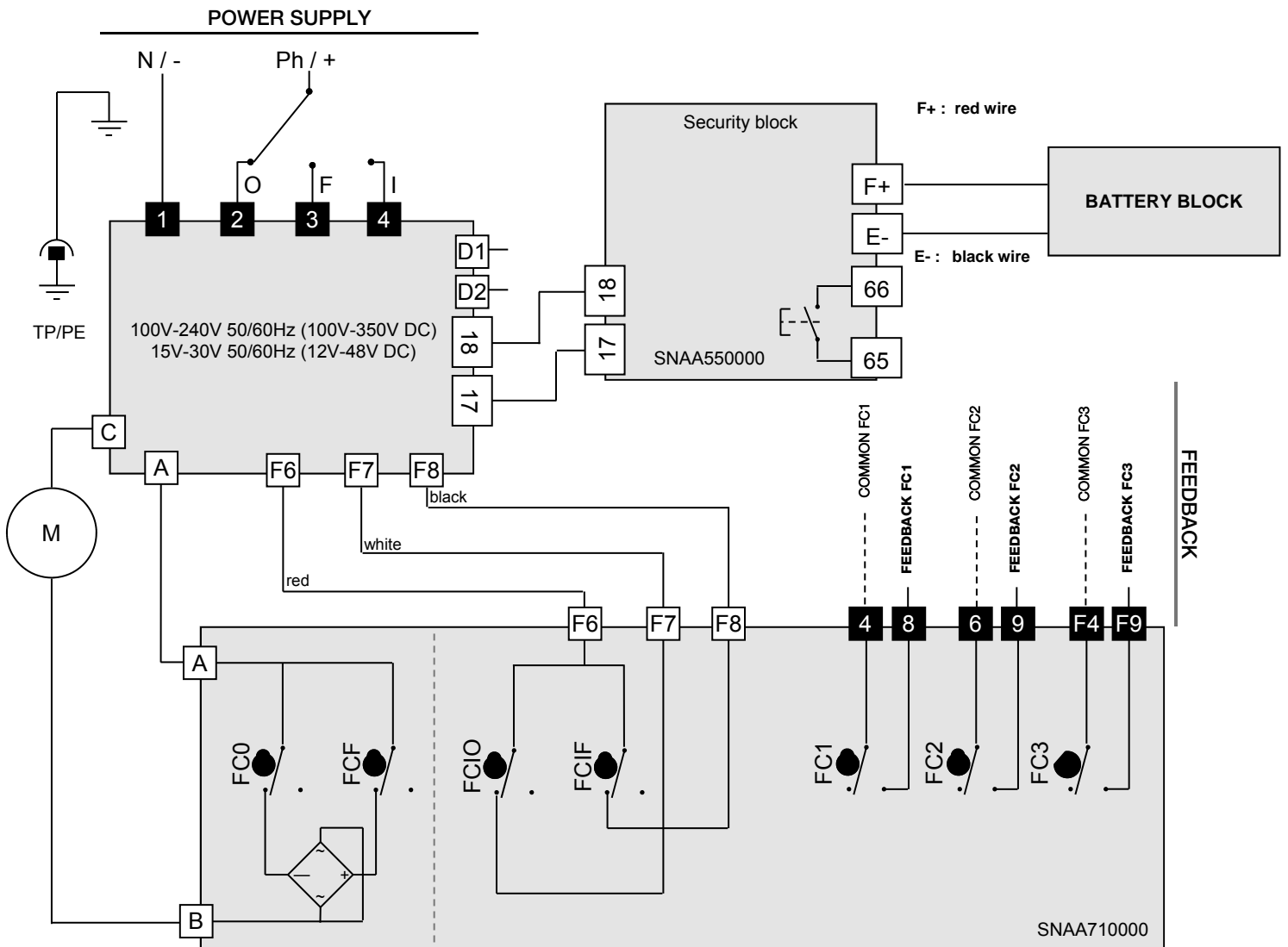
- The terminal temperature can reach 90 °C
- The used wires must be rigid (feedback voltages: 4 to 250V AC/DC)
- The terminal switch 67 68 must be wired with positive DC current (24V 3A max.).
- For a use with a long power supply wiring, the induction current generated by the wires mustn't be higher than 1mA.
- The control voltage must be S.E.L.V. (Safety Extra Low Voltage).
- No common earth/ground connexion between the control (input and output signal) and the alimentation. (Type 4-20mA: 5V DC max.)



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

GFS: description & electric diagram

GFS model includes a Failsafe unit and a GF3 (3-position unit).

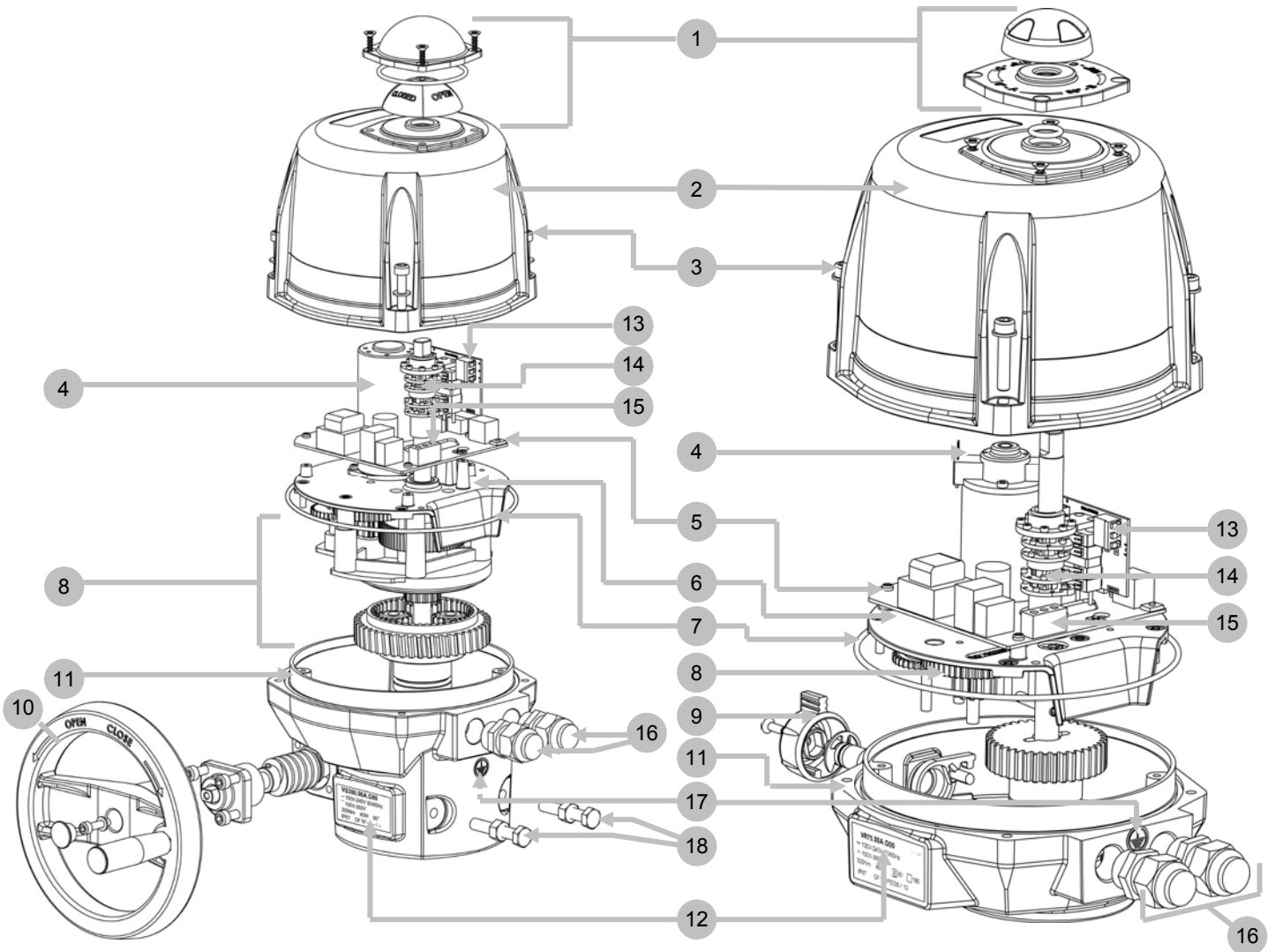


Rep.	Designation	Rep.	Designation
FC0	Open limit switch	FC1	Auxiliary limit switch 1
FCF	Close limit switch	FC2	Auxiliary limit switch 2
FCIO	Intermediate open limit switch	FC3	Auxiliary limit switch 3
FCIF	Intermediate close limit switch	D1/D2	Failure report Terminal strip (24V DC / 3A max)



- 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 power supply wiring, the induction current generated by the wires mustn't be higher than 1mA.

Exploded view



Rep.	Designation	Rep.	Designation
1	Visual position indicator	10	Hand wheel
2	Cover	11	Housing
3	Stainless steel screws	12	Identification label
4	Motor	13	Auxiliary limit switch terminal
5	Pilot and power supply card	14	Cams
6	Gear box plate	15	Pilot and power supply terminal
7	O ring	16	ISO M20 gland
8	Gear box	17	Earth screw
9	Clutch knob	18	Mechanical end stops

TECHNICAL DATA

Type (1/4 turn electric actuator)	VR25	VR45	VR75
IP protection (EN60529)	IP68		
Corrosion resistance (outdoor and indoor use)	Housing: Aluminium + EPOXY paint / cover: PA6 UL 94 V-0 or Aluminium + EPOXY paint Drive : Steel + Zn treatment / Axles and screws : Stainless steel		
Temperature	-20 °C to +70 °C (FAILSAFE GS2 : -20 °C to +40 °C)		
Hygrometry	maximum relative humidity 80 % for temperatures up to 31 °C decreasing linearly to 50 % relative humidity at 40 °C		
Pollution degree	Applicable POLLUTION DEGREE of the intended environment is 2 (in most cases).		
Altitude	altitude up to 2 000m		
Extended environmental conditions	Outdoor use and in WET LOCATION		
Sound level	61 dB		
Weight	3,1kg to 3.5Kg max (4Kg to 4,4kg with aluminium cover)		

MECHANICAL DATA

Nominal torque	20Nm	35Nm	60Nm
Maximum torque	25Nm	45Nm	75Nm
Operating time (90°)	7s to 20s		
Drive ISO5211	Star 17 F05-F07		
Rotation angle	90° (others on request)		
Mechanical stops	90° or 180°		
Manual override	External shaft		
Direction of rotation	Anticlockwise to open		

ELECTRICAL DATA

Voltage ±10%	15V to 30V AC 50/60Hz or 100V to 240V AC 50/60Hz 12V to 48V DC (FAILSAFE : 24V to 48V DC) or 100V to 350V DC 3-phase 400V		
Frequency	50/60Hz		
Power consumption	45W - (52W for 400V)		
Overvoltage category	TRANSIENT OVERVOLTAGES up to the levels of OVERVOLTAGE CATEGORY II TEMPORARY OVERVOLTAGES occurring on the MAINS supply.		
Insulation motor class	Class B 400V motors and class F for the others		
Torque limiter	Electronical		
Duty cycle (CEI34)	50%		
Limit switches maximal voltage	4 to 250V AC/DC (Overvoltage category II)		
Limit switches maximal current	1mA to 5A max		
Anticondensation heaters	10W		
Inrush current	Circuit breaker type D, nominal current according the number of actuators (max. 4 actuators) or use a inrush current limiter at the output of the circuit breaker.		

TECHNICAL DATA			
Type (1/4 turn electric actuator)	VS100	VS150	VS300
IP protection (EN60529)	IP68		
Corrosion resistance (outdoor and indoor use)	Housing: Aluminium + EPOXY paint / cover: PA6 UL 94 V-0 or Aluminium + EPOXY paint Drive : Steel + Zn treatment / Axles and screws : Stainless steel		
Temperature	-20 °C to +70 °C (FAILSAFE GS2 : -20 °C to +40 °C)		
Hygrometry	maximum relative humidity 80 % for temperatures up to 31 °C decreasing linearly to 50 % relative humidity at 40 °C		
Pollution degree	Applicable POLLUTION DEGREE of the intended environment is 2 (in most cases).		
Altitude	altitude up to 2 000m		
Extended environmental conditions	Outdoor use and in WET LOCATION		
Sound level	61 dB		
Weight	5,1kg to 5.5Kg max (6Kg to 6,4kg with aluminium cover)		
MECHANICAL DATA			
Nominal torque	75Nm	125Nm	250Nm
Maximum torque	100Nm	150Nm	300Nm
Operating time (90°)	10s to 60s		
Drive ISO5211	Star 22 F07-F10		
Rotation angle	90° (others on request)		
Mechanical stops	90°		
Manual override	Hand wheel		
Direction of rotation	Anticlockwise to open		
ELECTRICAL DATA			
Voltage ±10%	15V to 30V AC 50/60Hz or 100V to 240V AC 50/60Hz 12V to 48V DC (FAILSAFE : 24V to 48V DC) or 100V to 350V DC 3-phase 400V		
Frequency	50/60Hz		
Power consumption	45W - (135W for 400V)		
Overvoltage category	TRANSIENT OVERVOLTAGES up to the levels of OVERVOLTAGE CATEGORY II TEMPORARY OVERVOLTAGES occurring on the MAINS supply.		
Insulation motor class	Class B 400V motors and class F for the others		
Torque limiter	Electronical		
Duty cycle (CEI34)	50%		
Limit switches maximal voltage	4 to 250V AC/DC (Overvoltage category II)		
Limit switches maximal current	1mA to 5A max		
Anticondensation heaters	10W		
Inrush current	Circuit breaker type D, nominal current according the number of actuators (max. 4 actuators) or use a inrush current limiter at the output of the circuit breaker.		