TECHNICAL DOCUMENT

FLUXER
FLOOD CONTROL

VR·VS

Electric actuator

25Nm
300Nm

Indice de protection
IP68
Enclosure protection

Facteur de marche
50%
Duty cycle

Anticondensation intégrée
Anticondensation heater

Battery Backup
BBPR

Positionnement
POSI
Positioning

3
POSITIONS

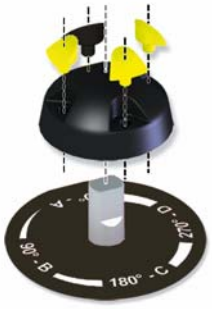
CE

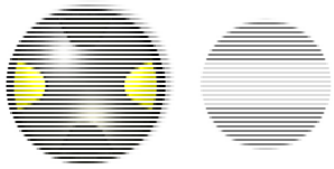
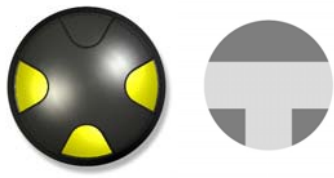
DSBA3400 • Rév. 12/06/2023

Position indicator

VR and 3-position models

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



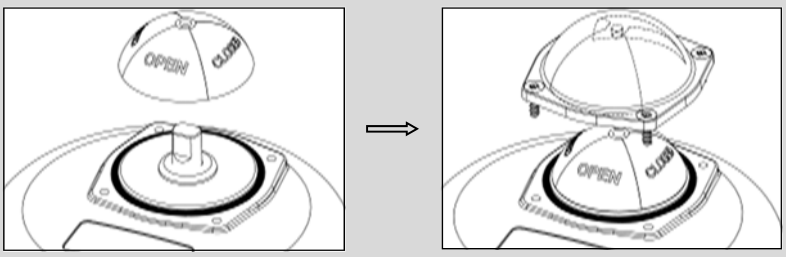
Valve	0°	90°	180°
2-way: 0° = closed 90° = open VR models			
3-way (L) : models : • VR • VS GF3 & GFS			
3-way (T) : Ex : T1 models : • VR • VS GF3 & GFS			

2-position VS models

2- position spherical indicator

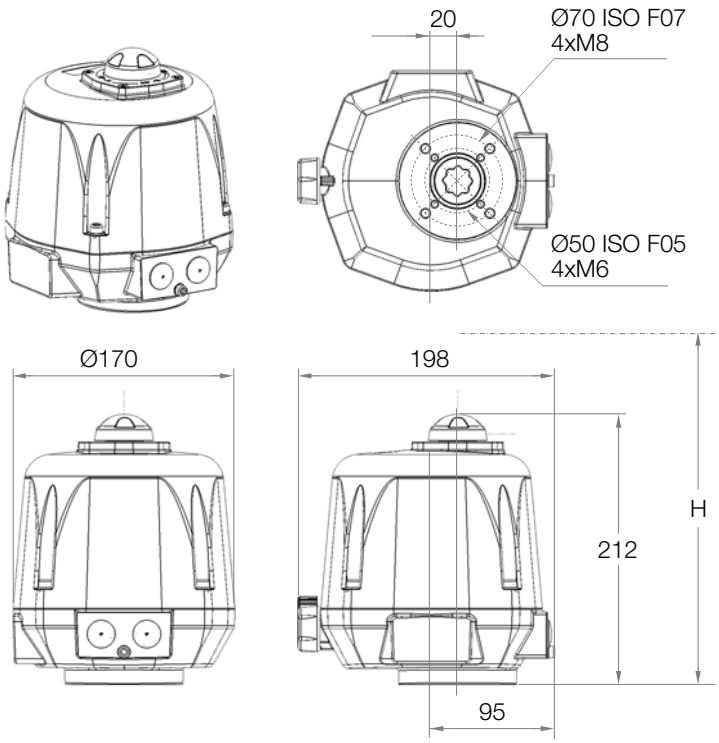
Sense of window for standard mounting:

Mounting of the position indicator (appendix p. 21 mark 1) : mount the seal ring and the indicator then the window with the 4 screws M4.



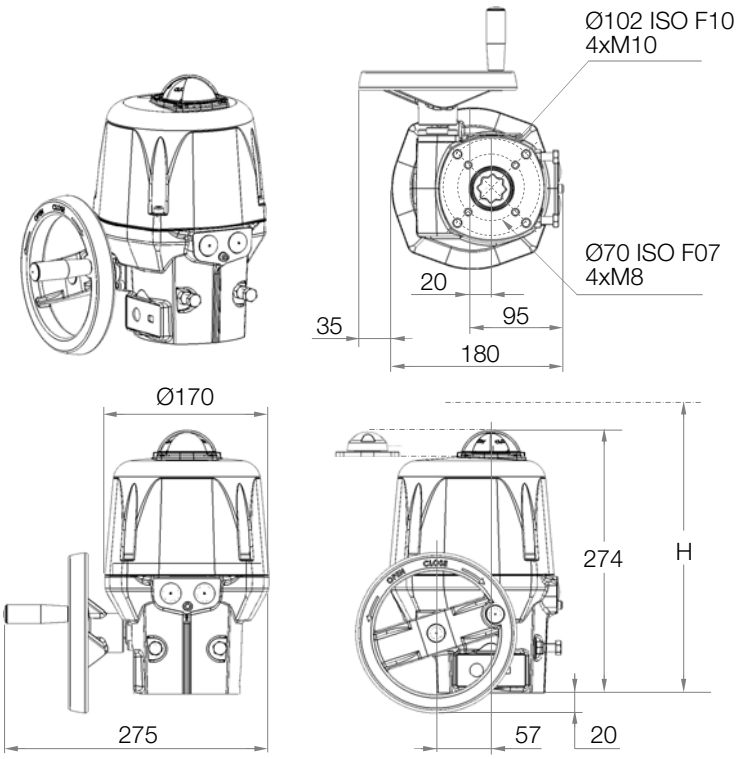
Dimensions

VR models



Square / Star	17mm	
Drive depth	19mm	
ISO5211 connection	F05	F07
Diameter	50 mm	70 mm
Taraudé M	M6	M8
Depth	15 mm	17 mm
Screw number	4	4
Screws maximal length (+ valve connection plate height)	10 mm	12 mm
Minimum distance above the valve for actuator mounting	H = 311 mm	

VS models



Square / Star	22 mm	
Drive depth	25 mm	
ISO5211 connection	F07	F10
Diameter	70 mm	102 mm
Taraudé M	M8	M10
Depth	19 mm	24 mm
Screw number	4	4
Screws maximal length (+ valve connection plate height)	14 mm	16 mm
Minimum distance above the valve for actuator mounting	H = 375 mm	

Mounting on valve

VR model:
Possible fixations : F05 (4xM6 with Ø50) and F07 (4xM8 with Ø70), star 17, depth 19mm.
Necessary height above the valve for the mounting of the actuator : H=311mm.

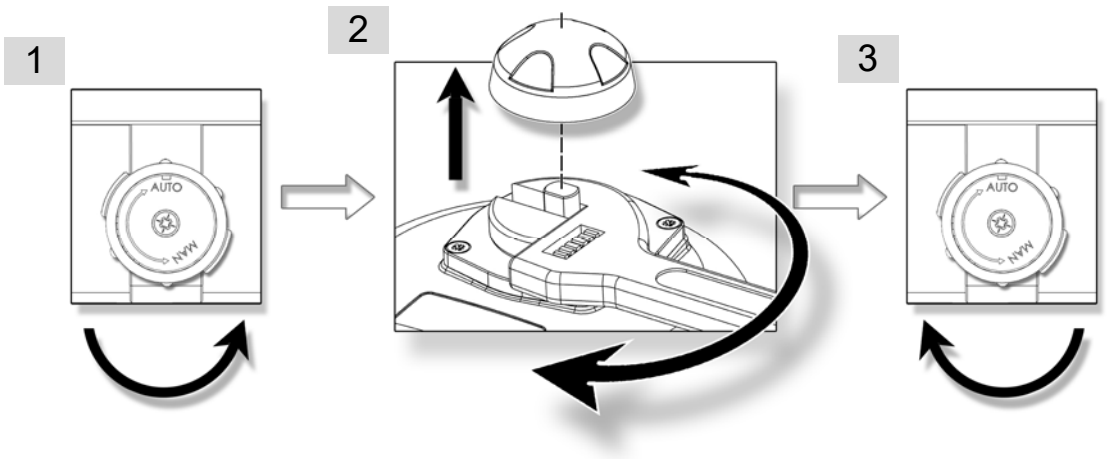
VR model:
Possible fixations : F07 (4xM8 with Ø70) and F10 (4xM8 with Ø102), star 22, depth 25mm.
Necessary height above the valve for the mounting of the actuator : H=375mm.

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. 21 mark 2) : make sure that the seal ring (appendix p. 21 mark 7) is correctly placed in its position, mount the cover and tighten the 4 screws M6 (appendix p. 19 mark 3, torque : max. 6 Nm).
Mounting of the position indicator for VR (appendix p. 21 mark 1) : fit the indicator onto the outgoing axle (according the diagram p. 2).
Mounting of the position indicator for VS (appendix p. 21 mark 1) : mount the seal ring and the indicator then the window with the 4 screws M4 (according the diagram p. 2).

Emergency manual override

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

VR model:

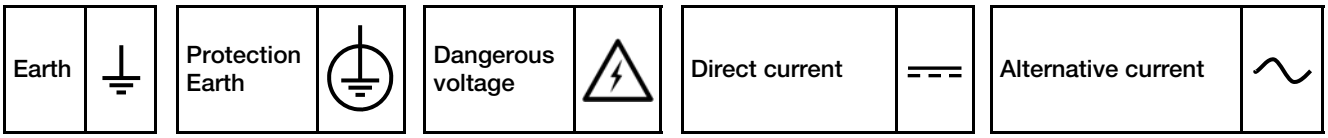


1. Turn the knob to position MAN (counter-clockwise) and hold it in position.
2. Turn the outgoing drive shaft of the actuator with the help of an adjusting spanner.
3. In order to re-engage the reduction, release the knob (spring return).

VS model:
No declutching is required, the hand wheel has simply to be turned (appendix p. 21 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. 21 mark 18) but you need to stick them again in order to en-sure a proper sealing.

Electric wiring

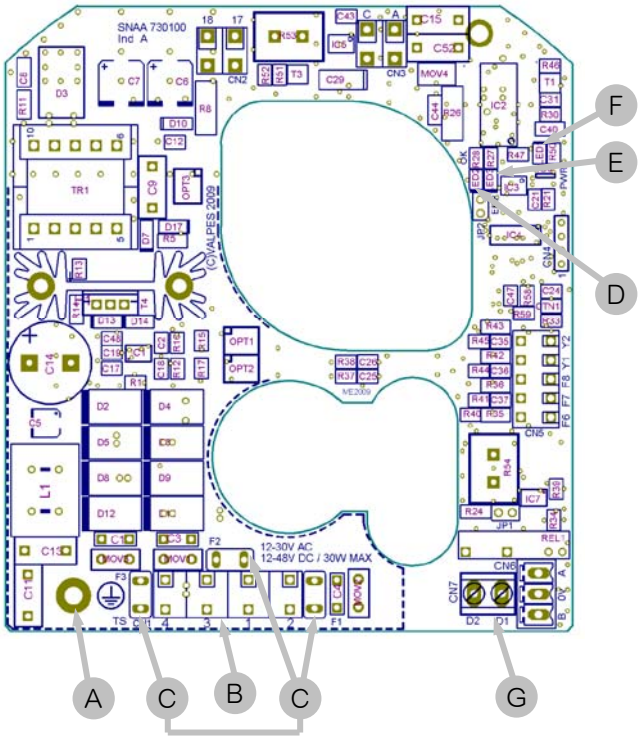
Warnings

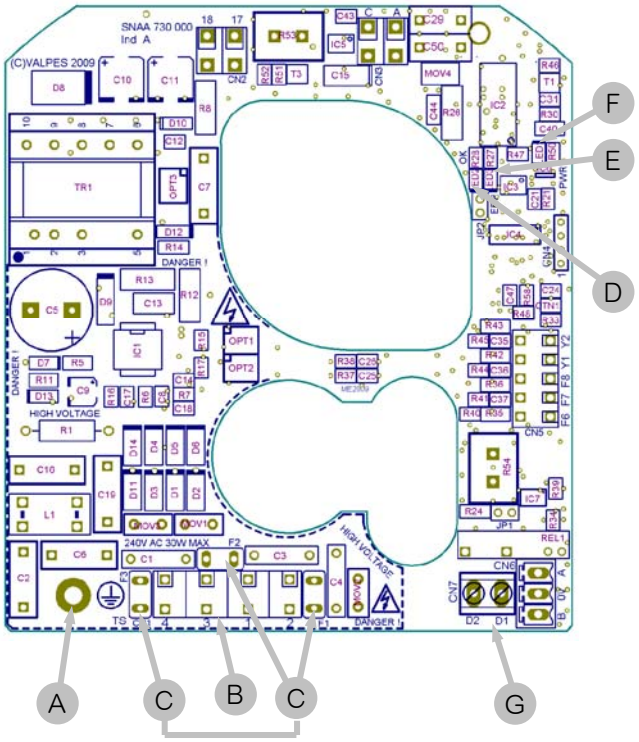


- Use only one relay for one actuator.
- As stipulated in the applicable regulation, the connection to earth contact is compulsory for devices with working voltages exceeding 42V.
- The actuator is being always under power, it must be connected to a disconnection system (switch, circuit breaker) to ensure 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 (standard: D1/D2, BBPR: D3/D4 and GPS: 67/68).
- 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 ± 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. The cables used must be of category UL 90 V-0.
- 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.
- 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 and use cables with a cross-section of 1.5 mm^2.
- The feedback switches must be powered with the same voltage. The reinforced insulation of the motor control allows voltages up to 250 V AC.
- Connection to feedback microswitches:
  - 4 to 24 V DC and 12 to 250 V AC
  - minimum current 100 mA
  - maximum current 5 A (resistive), 0.5 A (motor), 0.125 A (capacitive loads)
- 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.

Electronic boards

SNAA730100 15V-30V 50/60Hz (12V-48V DC)	SNAA730000 100 V-240 V 50/60Hz (100 V-350 V DC)





Rep.	Description	Rep.	Description
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 (24 V DC / 3A max)
D	LED 2 : microprocessor ok		

[1] **Fuses for multivolt card :**
- Card SNAA730100 : 5A / T 125 V (Littelfuse 39615000000)
- Card SNAA730000 : 3,15A / T 250 V (Multicomp MST 3,15A 250 V)

[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 overheat)
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 ±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. 8 & 9)
- To ensure the correct functioning of the anti-condensation heaters, the actuator must be permanently power supplied

EARTH WIRING

The connection to earth is mandatory if the applyed voltage is higher than 42 V. The cable used for earth connection must have the same cross-section as the power cables and be connected by means of a lug to the earth screw (see p. 21 item 17).

WIRING OF THE FEEDBACK SIGNAL (Except POSI: p.40 & GPS: p.46)

Our actuators are equipped with two simple limit switch contacts normally set either in open position, either in closed position (see DSBL0470 : 230 V and DSBL0497/DSBL0498: 400 V wiring diagrams inside the glover). 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 250 VAC.

- 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. 8 (230 V) or p. 9 (400 V).
- Tighten the cable gland (Ensure that it's well mounted to guaranty the proofness).

SETTING OF END LIMIT SWITCHES

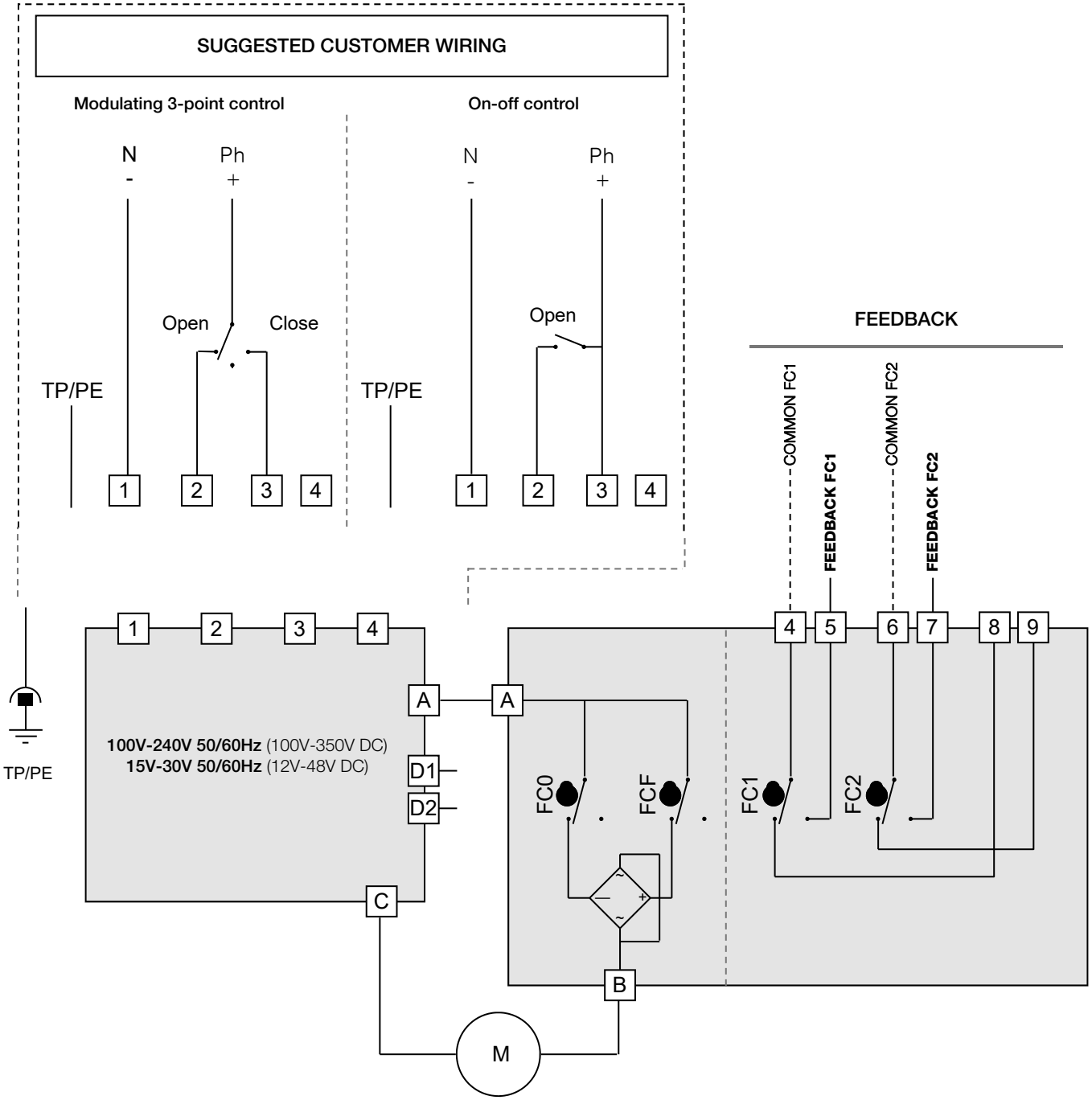
The actuator is pre-set in our factory. Do not touch the two lower cams in order to avoid any malfunctioning or even damage to the actuator.

- 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.

230 V electric diagram

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

- The terminal temperature can reach 90 °C
- The used wires must be rigid

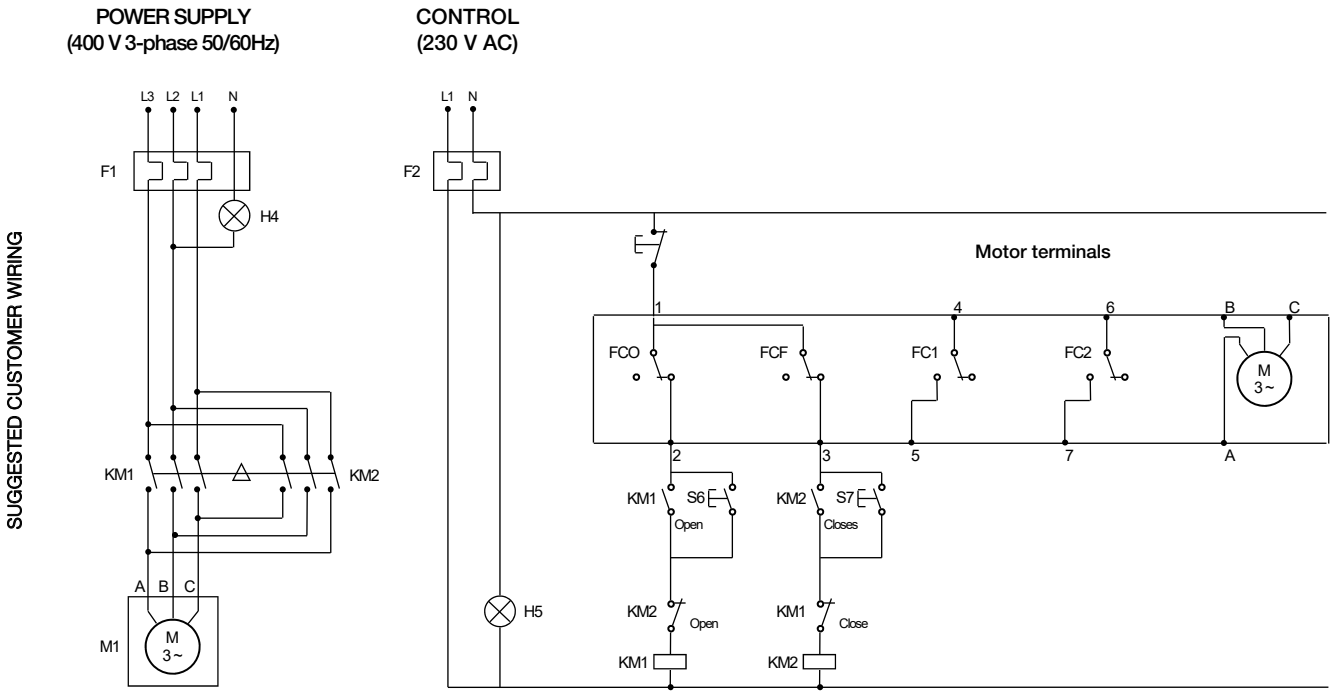


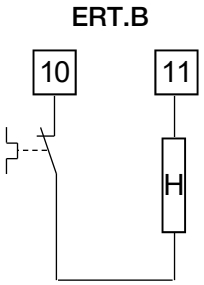
3-phase 400 V electric diagram

Rep.	Description	Rep.	Description	Rep.	Description
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

SUGGESTED CUSTOMER WIRING





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

BBPR models

Actuators with battery backup position recovery system (on-off wiring mandatory)

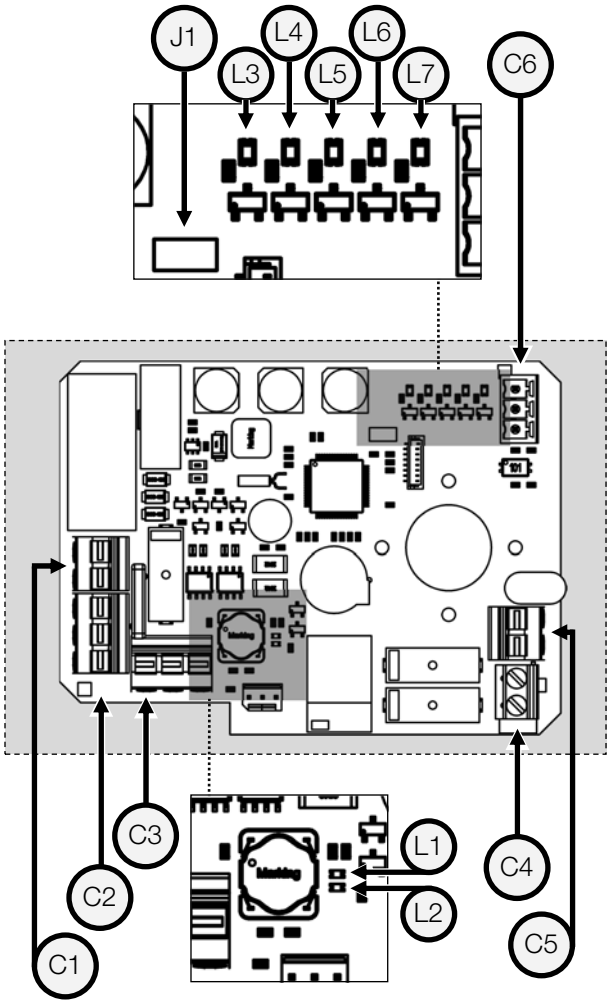
BBPR models integrate a battery pack monitored by an electronic board inside the actuator. Its function is to re-lay in case of power supply failure on terminal PIN 1, 2 and 3 of the actuator. The BBPR system can be set on different position like normally open (NO) or normally closed (NC). It depends on the 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 65 and 66 switch off. It's possible to use this contact to be aware that there is a failure on battery in the actuator without remove cover and plan the replacement.
BBPR option requires ON/OFF mode.

Loading electronic board

LED		DESCRIPTION
L1	D19 **green**	Actuator operating into opening
L2	D18 **red**	Actuator operating into closing
L3	ACT **green**	Battery status : –Slow blinking (1s) : battery charged. –Rapid blinking (0.5s) : battery charging
L4	ERROR **red**	Error detected: –Timestamp memory empty/scheduler selected –Clock failure –Excessive temperature –Excessive torque
L5	HORO **Orange**	Weekly scheduler functioning mode
L6	MANU **Orange**	manual / Bluetooth® functioning mode
L7	WIRE **Orange**	Electric wiring mode

CONNECTEUR		DESCRIPTION
C1	17 (-) · 18 (+)	power supply connector
C2	F (+) · F (-) · T (+)	Battery unit connector
C3	A · B · C	Motor connector
C4 [1)]	D3 · D4	Failure feedback connector
C5 [1)]	65 · 66	Charging feedback connector
C6	A · 0 · B	RS485 connector
J1	Bluetooth® activation jumper	

1) The auxiliary cables must be connected to inside installation only



Battery voltage	24 V DC
Battery capacity	600 mAh
Charging current	180 mA
initial battery charge duration	3,5 h
Charging status feedback relay (65/66)	24 V DC - 1 A max
Failure feedback relay (D3/D4)	24 V DC - 3 A max
Temperature	-10 °C to +40 °C

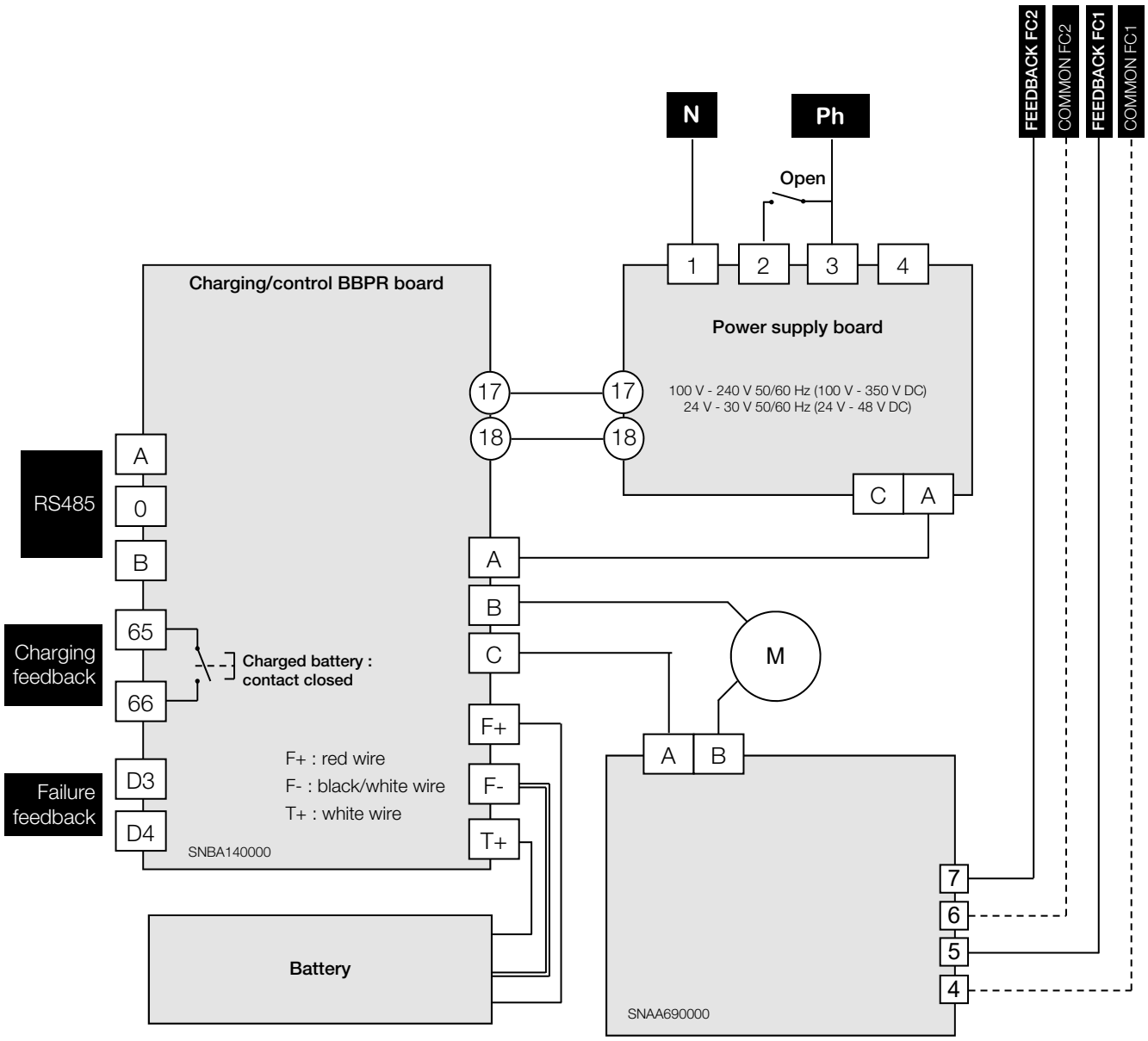
The factory default configuration is "normally closed"

Following a power failure, the BBPR unit will reset after 4 minutes

Thanks to **AXMART®** (via Bluetooth® connection), it's possible to set the backup position that the actuator will reach in case of power failure.
it's also possible to access to actuator parameters in real time, to schedule weekly tasks and to control it locally.

For any further information, refer to the operation manual with the reference **DSBA3304.**

BBPR : electric diagram



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

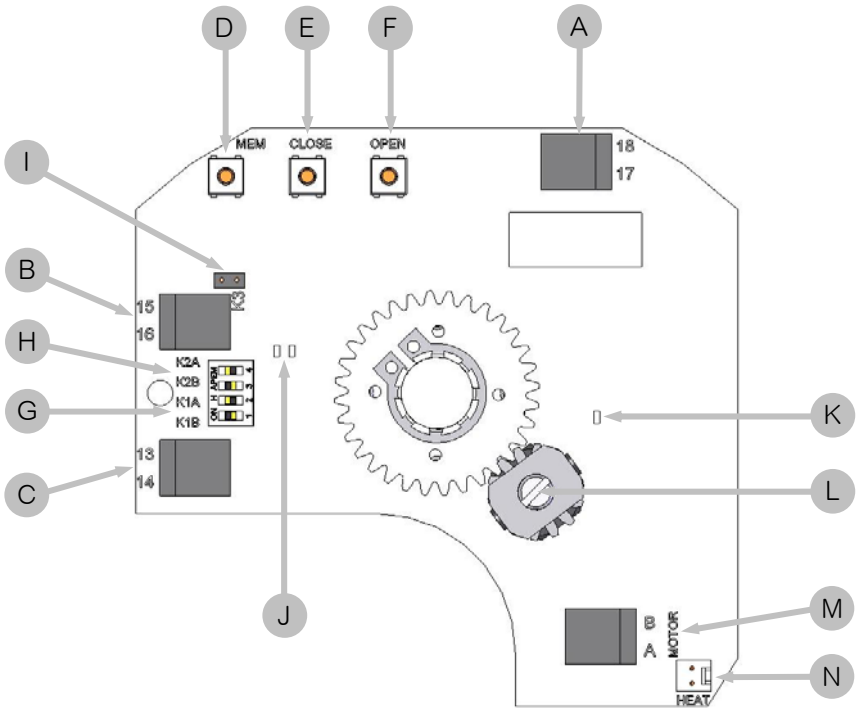
- Actuator pre-set in factory.
- In order to avoid electromagnetic perturbations, it is compulsory to use shielded cables (cables longer than 3m).

- Unscrew the right gland and pass the cable.
- Connect the input signal between terminals 15 and 16 (attached p. 13 mark.B). Terminal 15 is the negative po-larity (-) and terminal 16 is the positive polarity (+).
- Connect the output signal between terminals 13 and 14.(attached p. 13 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 15, "Parameter selection sequence".
To check the proper operation of the card : please see page 15, "Normal operating mode".

POSI: electronic board

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

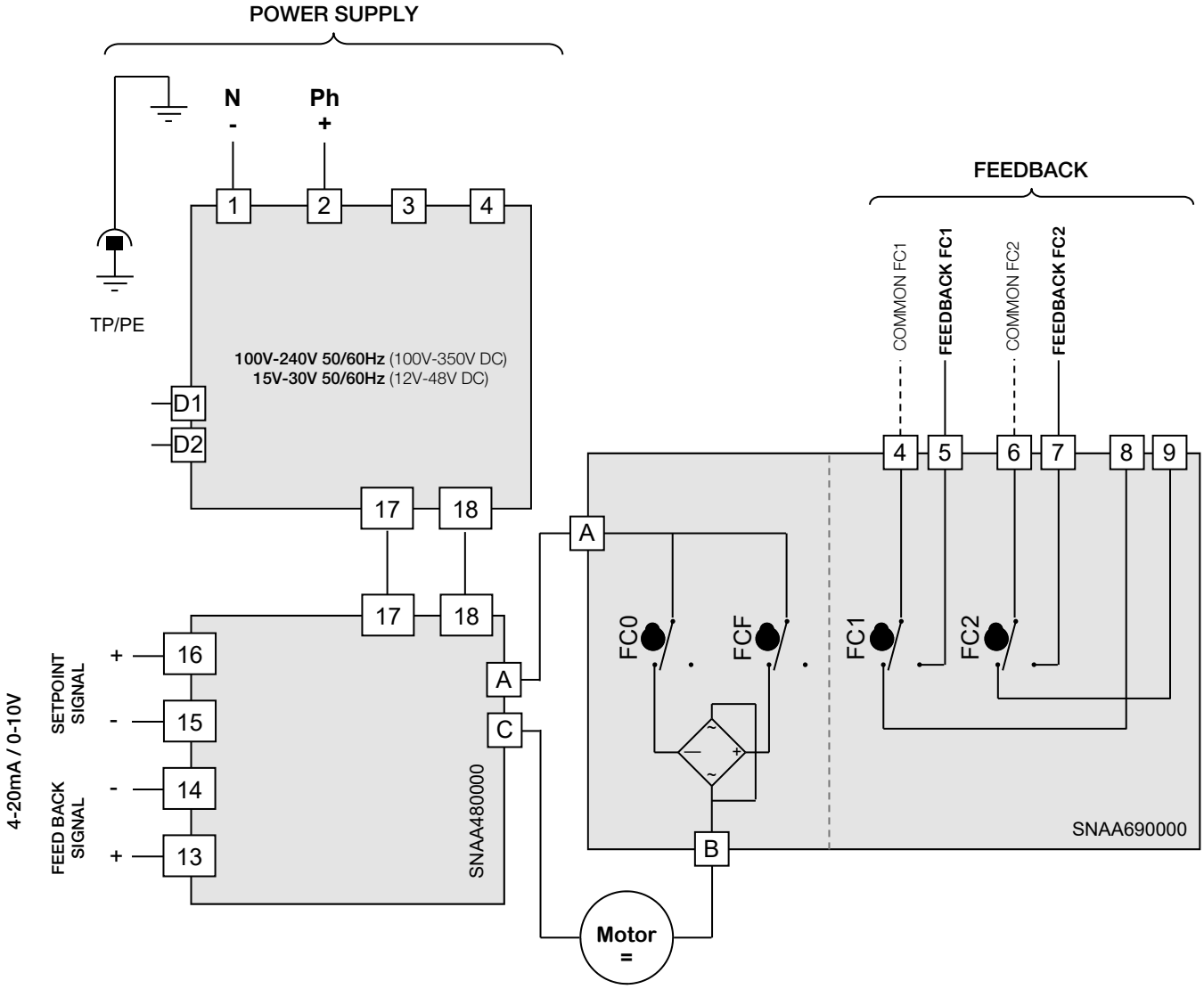


Rep.	Description	Rep.	Description
A	24 V AC/DC power supply terminal trip	H	K2 shunt
B	Instruction terminal trip	I	K3 shunt
C	Feed back terminal trip	J	Green and red LEDs
D	Adjustment button MEM	K	Yellow LED : power supply indication
E	Adjustment button CLOSE	L	Potentiometer
F	Adjustment button OPEN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

POSI: electric diagram

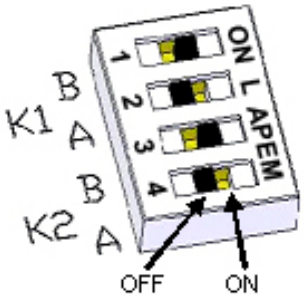
Rep.	Description	Rep.	Description
FC0	Open limit switch	FC1	Auxiliary limit switch 1
FCF	Close limit switch	FC2	Auxiliary limit switch 2
D1/D2	Failure report Terminal strip (24 V DC / 3A max)		

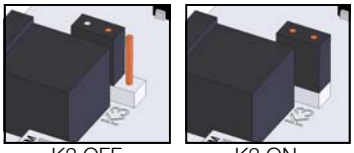
- **For GPS models, refer to the section p. 18 et 19.**
- The terminal temperature can reach 90 °C.
- The used wires must be rigid
- For a use with a long power supply wiring, the induction current generated by the wires mustn't be higher than 1mA.
- The control voltage must be S.E.L.V. (Safety Extra 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 (0-10 V) and 100 Ohm input impedance if control with current (0-20 mA or 4-20 mA)

POSI: parameter selection sequence





K3 OFF K3 ON

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**
0-20mA	0-10V	OFF	**ON**	**ON**	OFF	OFF
0-20mA	0-20mA	OFF	**ON**	OFF	**ON**	OFF
0-20mA	4-20mA	OFF	**ON**	OFF	**ON**	**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.

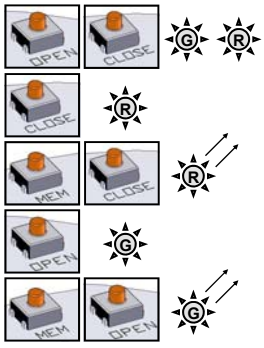
3.2 Current control signal 4-20mA (by default)

- 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.

3.3 Current control signal 0-20mA

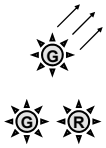
- Press the **MEM and OPEN** buttons and apply the operating voltage to the card while keeping these buttons pressed.
- The **red LED** will light up 3 times. Release these buttons.
- Disconnect the card.

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



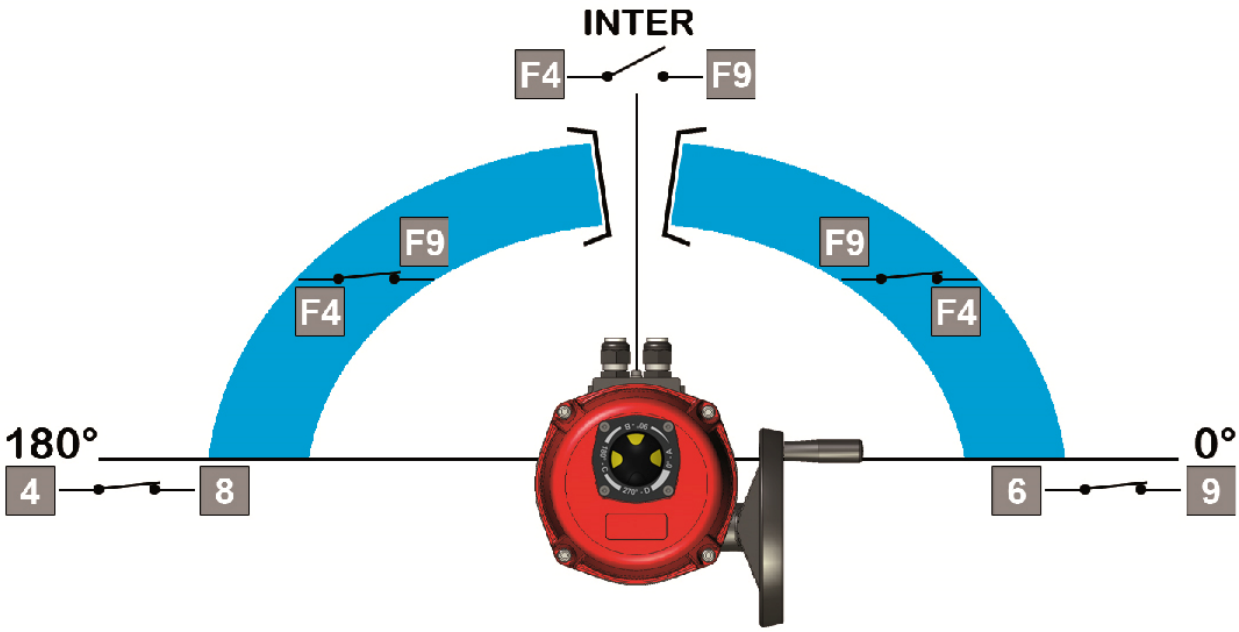
- Apply the operating voltage to the card. The **green LED** will light up 3 times.
- Under normal operating conditions, the **green LED** will light up when the drive motor opens the valve, and the **red LED** will light up when the drive motor closes it.
- If **both LEDs** remain ran out, it means 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 condition

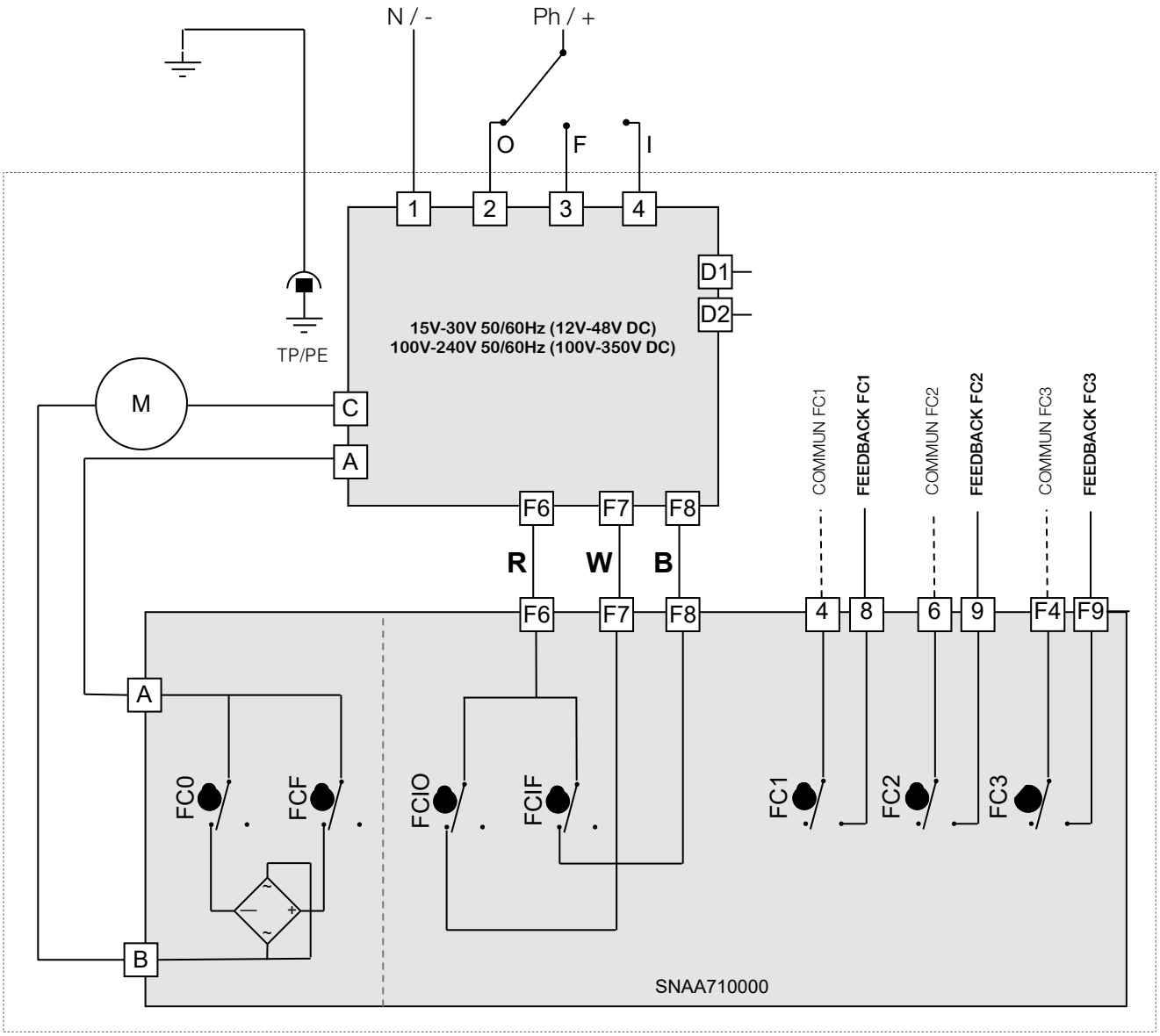


	Terminals		
	6 & 9	4 & 8	F4 & F9
0°	Closed	Open	Closed
inter	Open	Open	Open
180°	Open	Closed	Closed

3 positions: electric diagram

Rep.	Description	Rep.	Description
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	R	Red
W	White	B	Black
D1/D2	Failure report Terminal strip (24 V DC / 3A max)		

- The terminal temperature can reach 90 °C
- The used wires must be rigid



GPS : description

The GPS version includes BBPR and positioning function.

Thanks to **AXMART®** (via Bluetooth® connection), it's possible to set the backup position that the actuator will reach in case of power failure (BBPR function) as well as setpoint and feedback signal type (positioning function).
it's also possible to access to actuator parameters in real time, to schedule weekly tasks and to control it locally.

For any further information, refer to the operation manual (**DSBA3304).**

The factory default configuration is "normally closed"

Be sure you connect the terminal 15 (-) before the terminal 16 (+)

Following a power failure, the BBPR unit will reset after 4 minutes.

Voltage	24 V DC
Battery capacity	600 mAh
Charging current	180 mA
Maximum battery charge duration	3,5 h
Charging status feedback relay (65/66)	24 V DC - 1 A max
Failure feedback relay (67/68)	24 V DC - 3 A max
Temperature	-10 °C to +40 °C

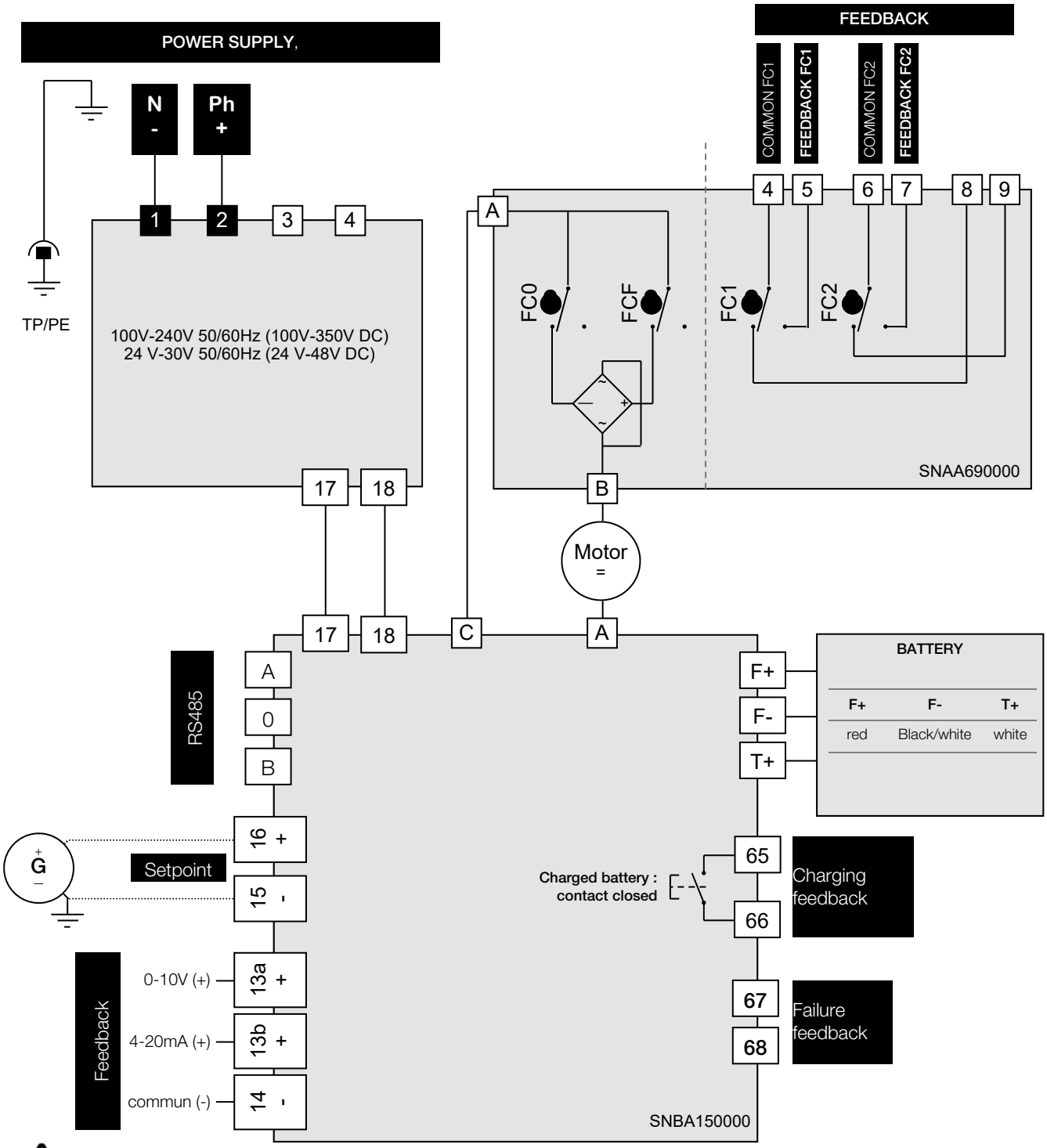
TERMINALS	DESCRIPTION
17(-)•18(+)	power supply connector
F(+)•F(-)•T(+)	Battery connector
65•66	Charging feedback connector
67•68	Failure feedback connector
A•0•B	RS485 connector
15(-)•16(+)	Positioning setpoint signal connector (0-10 V or 4-20 mA)
13A(+)•13B(+)•14(-)	Positioning feedback signal connector 13A=0-10 V et 13B=4-20 mA
CV1	Bluetooth® activation jumper

LED	DESCRIPTION
MANU	manual / Bluetooth® functioning mode
HORO	Weekly scheduler functioning mode
APPR	Learning mode selected
POSI	Positioning mode
ERROR	Error detected: – Timestamp memory empty/scheduler selected – Clock failure – Excessive temperature – Excessive torque
ACT	Power supply: – Slow blinking (1 s) : charged battery – Rapid blinking (0.5 s) : battery charging
APPR1	Open position stored (confirmation)
APPR2	Closed position stored (confirmation)

GPS : learning mode

- Switch on the actuator
- Press both **OPEN** and **CLOSE** buttons until the learning mode is selected, (**APPR** LED on).
- Press **CLOSE** button. The valve operate into closed position.
- When the valve is closed, press both **CLOSE** and **MEM** buttons during 2 seconds.
- The **APPR2** led blinks rapidly and then lights on. The closed position is stored.
- Press **OPEN** button. The valve operate into open position.
- When the valve is open, press both **OPEN** and **MEM** buttons during 2 seconds.
- The **APPR1** led blinks rapidly and then lights on. The closed position is stored
- Exit the learning mode by simultaneously pressing the **OPEN** and **CLOSE** buttons to the POSI mode.

GPS : electric diagram

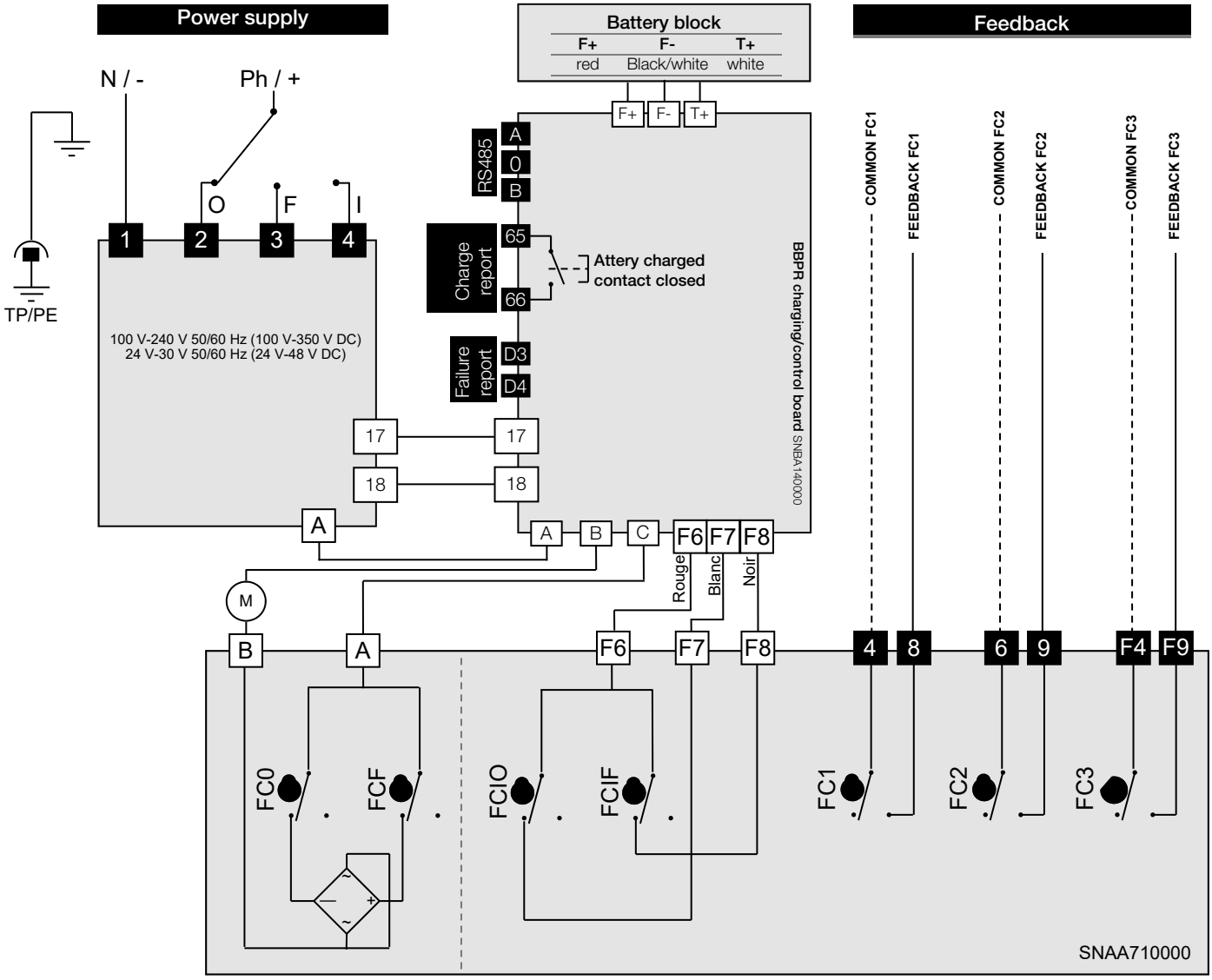


- The pin 15 (-) of the setpoint signal must be connected to earth
- The terminal temperature can reach 90 °C
- The used wires must be rigid
- The terminal switch 67 68 must be wired with positive DC current (24 V 3A max.).
- For a use with a long power supply wiring, the induction current generated 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

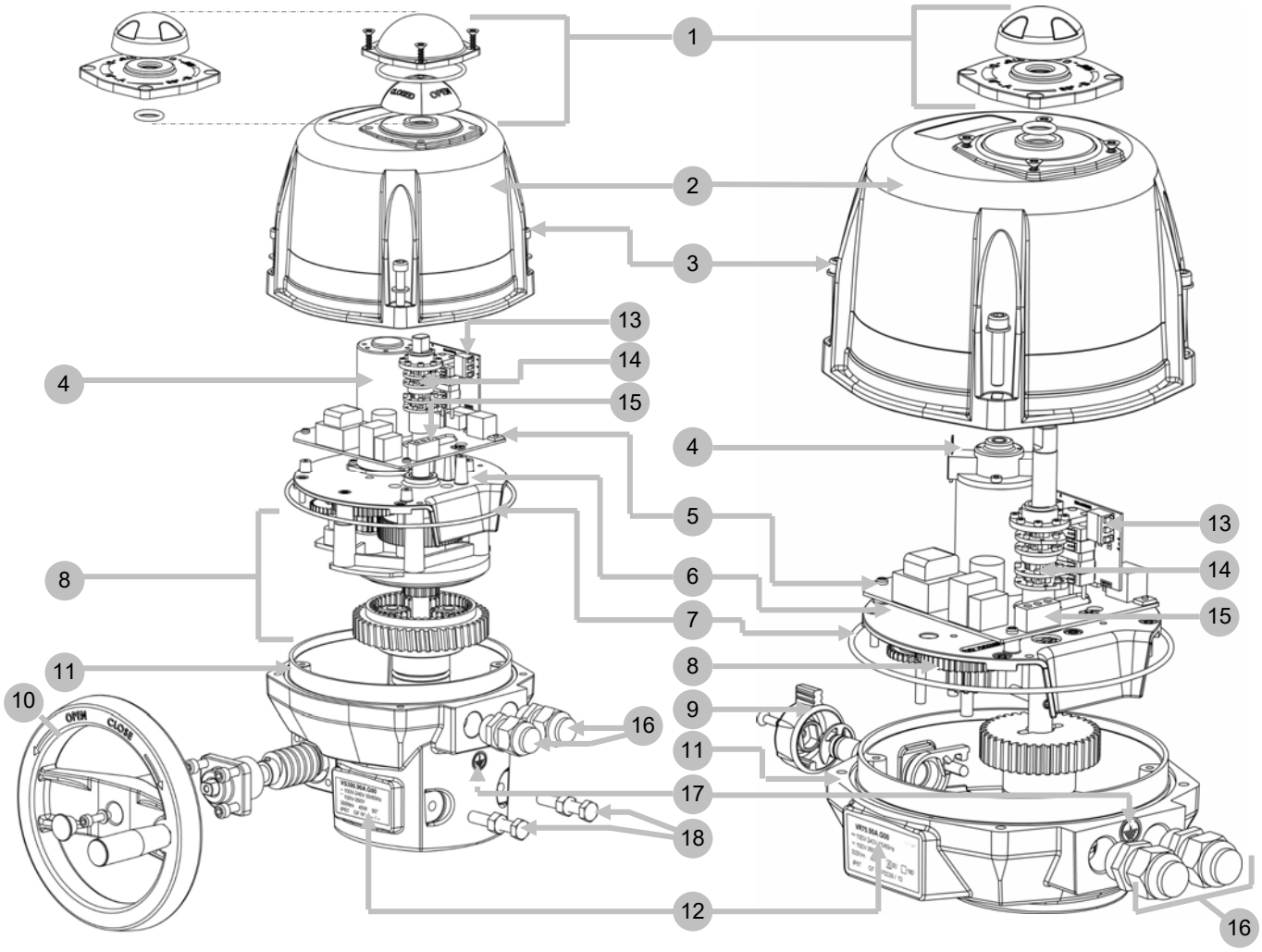
GFS model includes a BBPR unit and 3 positions



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	D3/D4	Failure report Terminal strip (24 V DC / 3A max)

- The terminal temperature can reach 90 °C
- The used wires must be rigid
- 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

VR technical specifications

	VR25	VR45	VR75
Installation			
IP protection (EN60529)	IP68 (5 m 72 h)		
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 à +70 °C (BBPR/GPS/GFS : -10 °C à +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 2 000 m		
Extended environmental conditions (IEC61010)	Use indoor, outdoor and in WET LOCATION		
Sound level	61 dB		
Weight	3,1 kg to 3.5 Kg max (4 Kg to 4,4 kg with aluminium cover)		
Mechanical specifications			
Nominal torque	20 Nm	35 Nm	60 Nm
Maximum torque	25 Nm	45 Nm	75 Nm
Operating time (90°)	7 s (400 V : 10 s)	15 s (400 V : 10 s)	20 s (400 V : 15 s)
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 specifications			
Voltage [1] (standard)	100 V to 240 V AC 50/60 Hz and 100 V to 350 V DC 15 V to 30 V AC 50/60 Hz and 12 V to 48 V DC 3-phase 400 V 50/60 Hz		
Voltage [1] (GP5 and GF3)	100 V to 240 V AC 50/60 Hz and 100 V to 350 V DC 15 V to 30 V AC 50/60 Hz and 12 V to 48 V DC		
Voltage [1] (GS6, GPS and GFS)	100 V to 240 V AC 50/60 Hz and 100 V to 350 V DC 24 V to 30 V AC 50/60 Hz and 24 V to 48 V DC		
Overvoltage category [2]	TRANSIENT OVERVOLTAGES up to the levels of OVERVOLTAGE CATEGORY II TEMPORARY OVERVOLTAGES occurring on the MAINS supply.		
Power consumption	45 W - (52 W for 400 V)		
Insulation motor class	Class B 400 V motors and class F for the others		
Torque limiter (except 400 V)	Electronic		
Duty cycle (IEC60034)	50 %		
Limit switches voltage	12 to 250 V AC and 4 to 24 V DC		
Limit switches current	Min. 100 mA Max. 5 A (resistive), 0.5 A (motor), 0.125 A (capacitive loads)		
Anticondensation heaters	10 W		
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.		

[1] The actuator tolerates voltage fluctuation of the electrical grid up to ± 10 % of its nominal system operating voltage
[2] The actuator tolerates temporary overvoltages of the electrical grid.

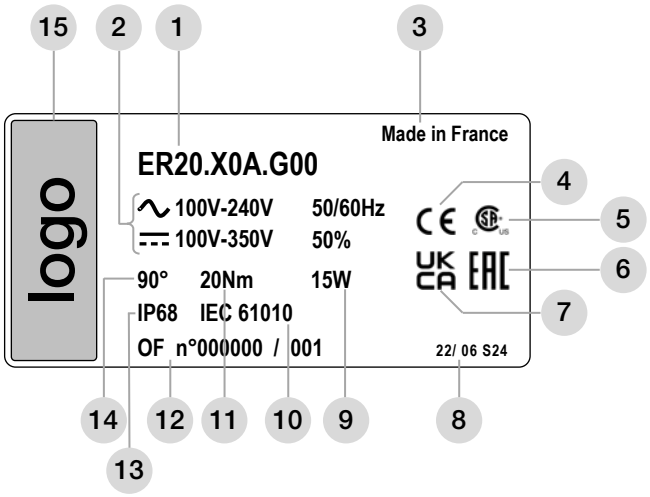
VS technical specifications

	VS100	VS150	VS300
Installation			
IP protection (EN60529)	IP68 (5 m 72 h)		
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 à +70 °C (BBPR/GPS/GFS : -10 °C à +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 2 000 m		
Extended environmental conditions (IEC61010)	Use indoor, outdoor and in WET LOCATION		
Sound level	61 dB		
Weight	5,1 kg to 5.5 Kg max (6 Kg to 6,4 kg with aluminium cover)		
Mechanical specifications			
Nominal torque	75 Nm	125 Nm	250 Nm
Maximum torque	100 Nm	150 Nm	300 Nm
Operating time (90°)	15 s (400 V : 10 s)	30 s (400 V : 20 s)	60 s (400 V : 35 s)
Drive ISO5211	Star 22 F07-F10		
Rotation angle	90° (others on request)		
Mechanical stops	90°		
Manual override	Wheel		
Direction of rotation	Anticlockwise to open		
Electrical specifications			
Voltage [1] (standard)	100 V to 240 V AC 50/60 Hz and 100 V to 350 V DC 15 V to 30 V AC 50/60 Hz and 12 V to 48 V DC 3-phase 400 V 50/60 Hz		
Voltage [1] (GP5 and GF3)	100 V to 240 V AC 50/60 Hz and 100 V to 350 V DC 15 V to 30 V AC 50/60 Hz and 12 V to 48 V DC		
Voltage [1] (GS6, GPS and GFS)	100 V to 240 V AC 50/60 Hz and 100 V to 350 V DC 24 V to 30 V AC 50/60 Hz and 24 V to 48 V DC		
Overvoltage category [2]	TRANSIENT OVERVOLTAGES up to the levels of OVERVOLTAGE CATEGORY II TEMPORARY OVERVOLTAGES occurring on the MAINS supply.		
Power consumption	45 W - (135 W for 400 V)		
Insulation motor class	Class B 400 V motors and class F for the others		
Torque limiter (except 400 V)	Electronic		
Duty cycle (IEC60034)	50 %		
Limit switches voltage	12 to 250 V AC and 4 to 24 V DC		
Limit switches current	Min. 100 mA Max. 5 A (resistive), 0.5 A (motor), 0.125 A (capacitive loads)		
Anticondensation heaters	10 W		
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.		

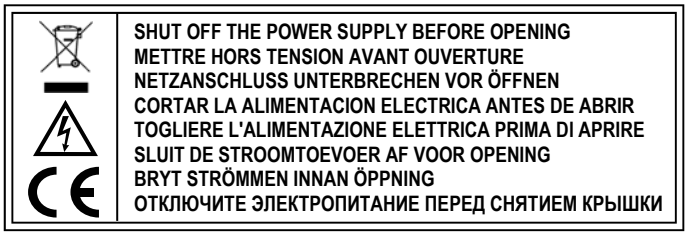
[1] L'actionneur accepte les fluctuations de la tension du RÉSEAU d'alimentation jusqu'à ±10 % de la tension nominale.
[2] Accepte les surtensions temporaires survenant sur le réseau d'alimentation.

Product marking

Product label (outside - cover)	
1	model
2	Input voltage (AC and DC)
3	Country of origin
4	CE compliance mark
5	CSA compliance mark
6	EAC compliance mark
7	UKCA compliance mark
8	Manufacturing year / month & week number
9	Power rating
10	Intended for industrial applications
11	Maximum torque rating
12	Lot number / unit number of lot
13	Ingress protection rating
14	Open-close rotation
15	manufacturer

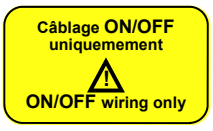


Warning label (outside - cover)



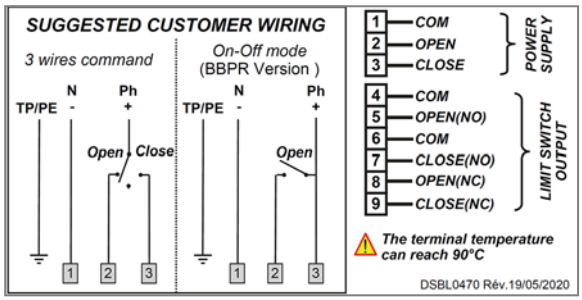
Motor power sujpply (inside - motor)

BBPR model wiring (outside - cover)

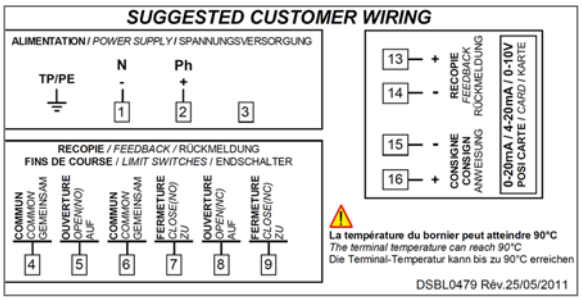


Electric wiring diagrams (inside - cover)

VR/VS multivolt (except POSI)



VR/VS multivolt POSI



VR/VS 3-phase 400 V