VT+

Electric actuator

valpes
A WATTS Brand

CE

UK Installation and Operation Manual

600Nm
2400Nm

Facteur de marche
50%
Duty cycle

Indice de protection
IP68
Enclosure protection

Anticondensation intégrée
Anticondensation Heater

BLUETOOTH®

Positionnement
POSI
Positioning

Powered by AXMART®

ARA®
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www.arapneumatik.pl

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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 for any other purpose.

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. Actuators should not be stored upside down.

MAINTENANCE

- Maintenance is ensured by our factory. If the supplied product does not work, please check the wiring according to the electric diagram as well as the power supply of the electric actuator in question.
- 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 ANY 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

- When the actuator receives his actuator, he must check its conformity according to its definition.
- 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 damages. 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.

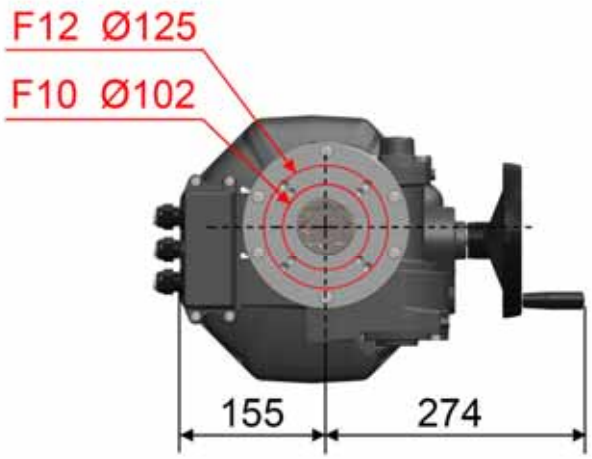
SAFETY INSTRUCTIONS ⚠ (To be read prior to the installation of the product)

- 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 persons instructed in accordance with the regulations of electric engineering, safety, and all other applicable directives.
- Strictly observe the wiring and operation 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.
- Any other use than that described by the manufacturer jeopardizes the protection provided by this apparatus.

MOUNTING INSTRUCTIONS ⚠ (To be read prior to the installation of the product)

- Do not mount the actuator less than 30 cm from an electromagnetic disturbance source.
- Do not position the equipment so that it is difficult to operate the disconnecting device.
- Respect all safety rules during fitting, dismantling and porting of this apparatus.

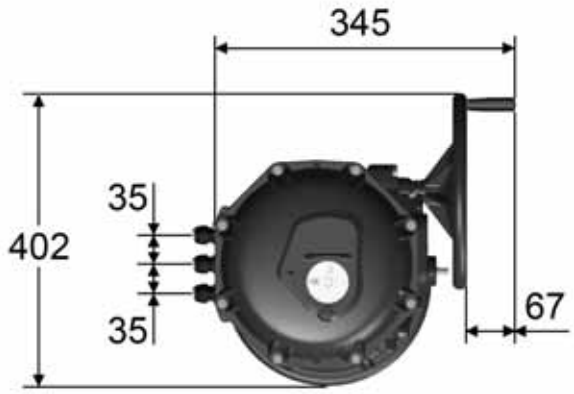
Dimensions : 600 and 1000Nm models

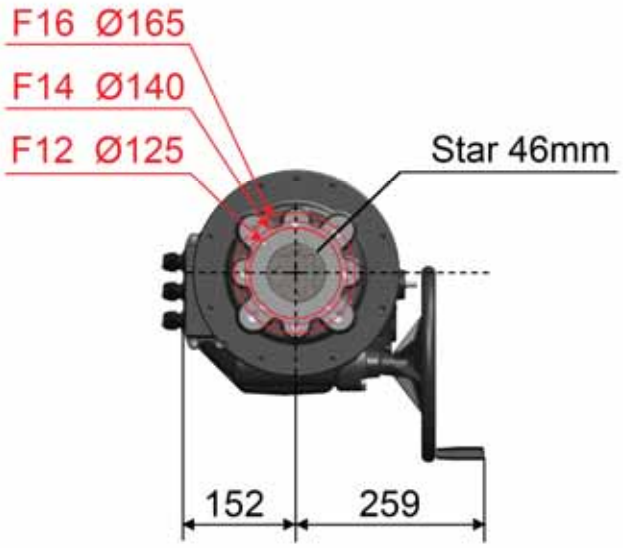


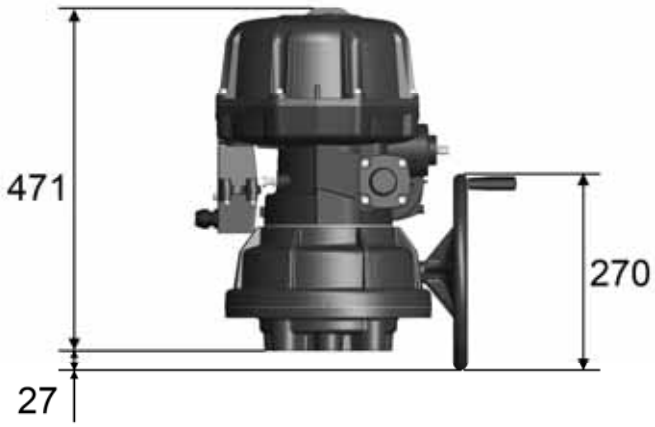
Star (mm)	Depth (mm)
36	41

ISO 5211 connection	Diameter (mm)	M threated	Depth (mm)	Screw number
F10	102	M10	25	4
F12	125	M12	30	4

Dimensions : 1500 and 2400Nm models



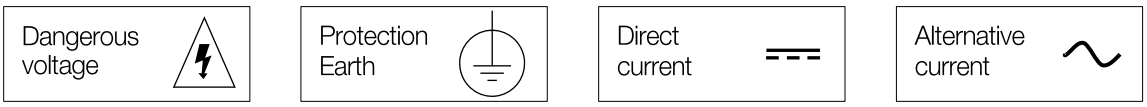




Star (mm)	Depth (mm)
46	50

ISO 5211 connection	Diameter (mm)	M threated	Depth (mm)	Screw number
F12	125	M12	20	4
F14	140	M16	25	4
F16	165	M20	30	4

Electric wiring: warnings

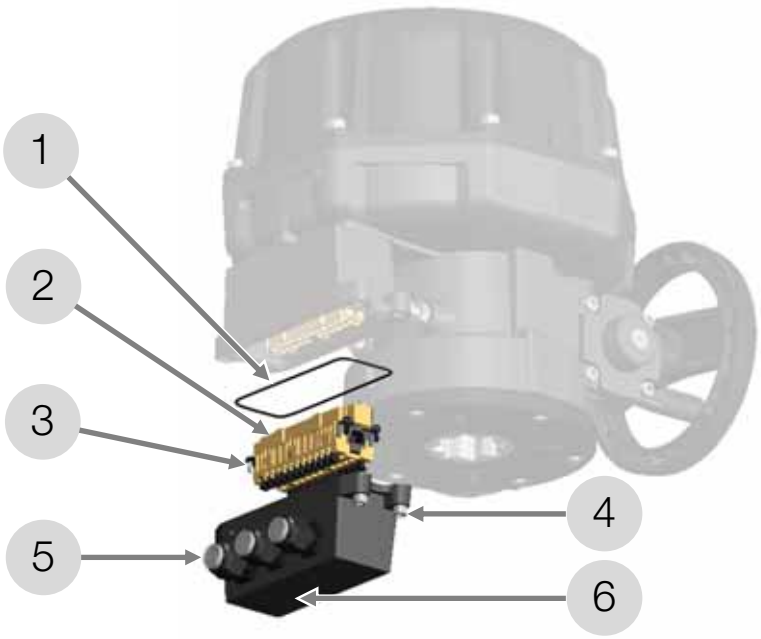


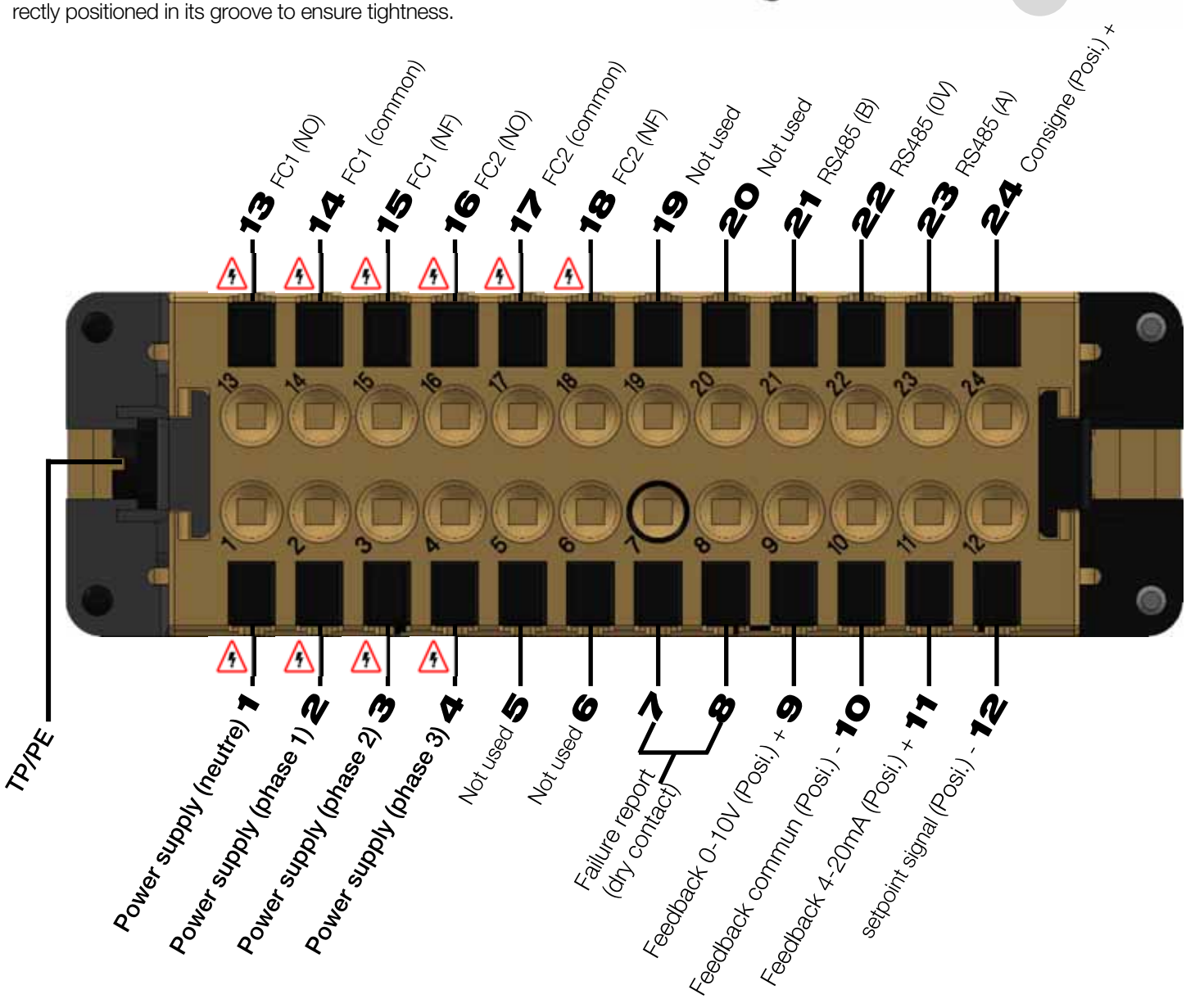
- As stipulated in the applicable regulation, the connection to earth contact is compulsory for devices with working voltages exceeding 42V.
- The actuator is being always under power, it must be connected to a disconnection system (switch, circuit breaker) to ensure the actuator's power cut. The latter 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.
- In case of long cables, please note the induction current shall not exceed 1mA.
- To optimize the installation security, please connect the failure feedback signal (terminals 7 & 8).
- The actuator can tolerate temporary overvoltage of the electrical grid up to ± 10 % of its nominal system operating voltage.
- 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 selection of the cables and cable glands: the maximal operating temperature of the cables and cable-glands must be at least 110°C.
- In order to ensure the IP68 tightness, the cable gland for feedback wiring must be used (7 to 12mm cable). Otherwise, the cable gland 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.

Multipin connector

1	Seal
2	Male connector
3	4 x M3x10 screws
4	4 x CHC M6x30 Stainless steel A2 screws
5	3 x ISO M20 x 1,5 cable glands
6	Connector cover

To wire the actuator, unscrew the 4 CHC M6x30 screws, and the 4 M3x10 screws. The wiring can be realized without tool, just raising the strips in front of each pin.
For the reassembly, make sure that the seal is correctly positioned in its groove to ensure tightness.

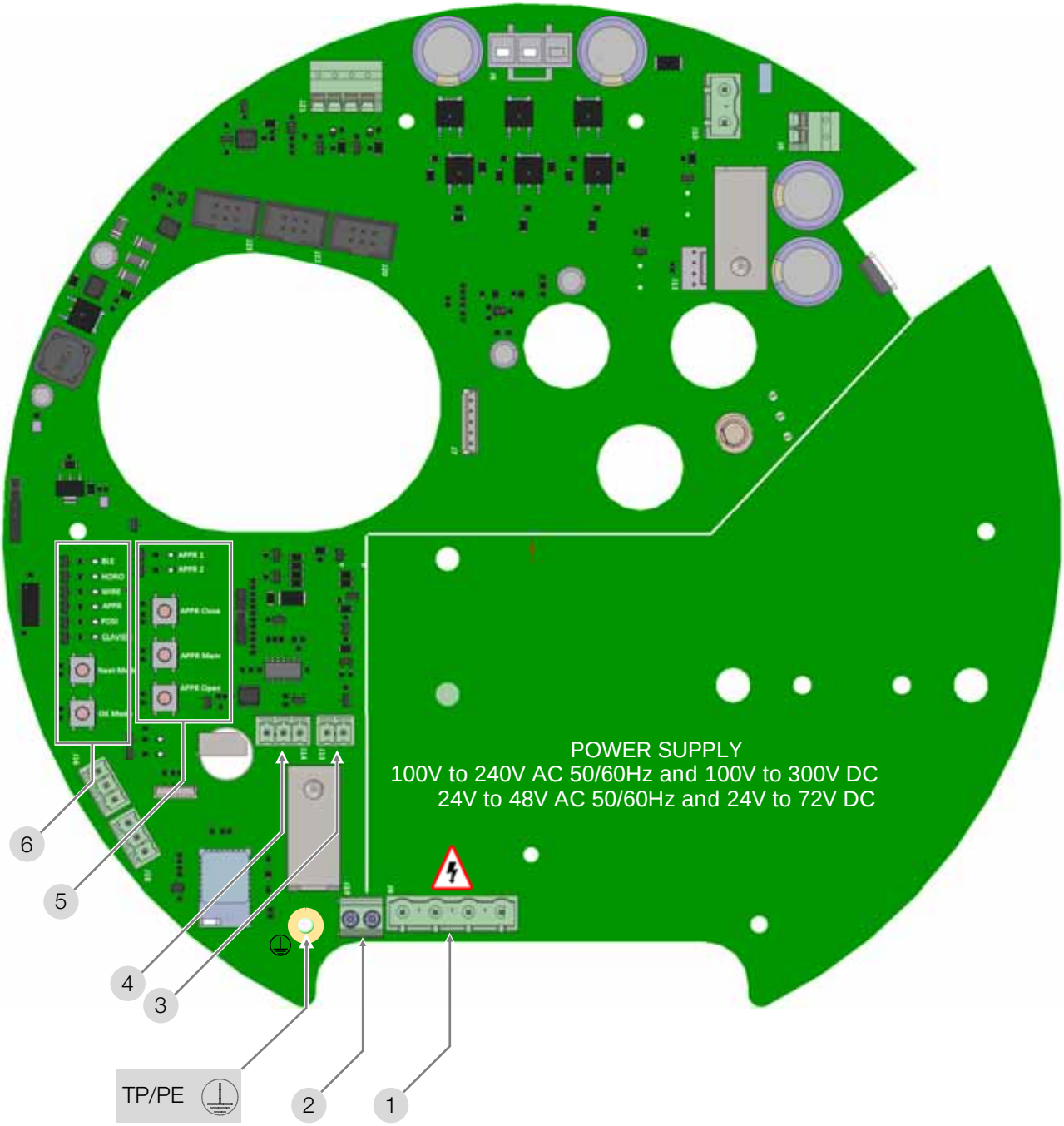




- The earth (**TP/PE**) and the pins **1, 2, 3, 4** must be wired through the same cable.
- Possible presence of 250V 50/60Hz (or 300V DC) on these pins. The other ones are powered with safety extra low voltage (SELV).

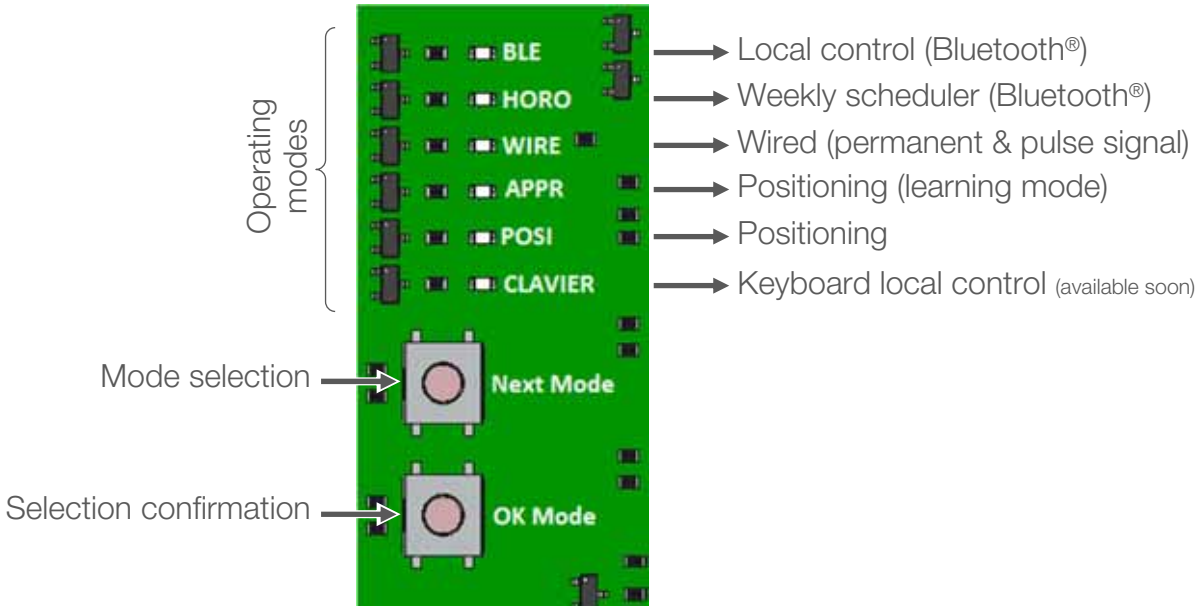
Electronic card

High voltage card (SNBA050000) : 100V to 240V AC 50/60Hz and 100V to 300V DC
Low voltage card (SNBA051000) : 24V o 48V AC 50/60Hz and 24V to 72V DC



1	Power supply terminal	4	Feedback signal (positioning mode)
2	Failure report (24V 3A max.)	5	Learning mode panel (positioning mode)
3	Setpoint signal (positioning mode)	6	Functioning mode selection panel
FUSES	SNBA050000 : 3 x T 5A, 250V Littlefuse SNBA051000 : 3 x 20A, 72V DC Shurter	TP/PE	Protection earth

Functioning modes



Description

- **Wireless local control (Bluetooth®)** : allows the use of the actuator from 20m maximum (in open field). This mode requires a smartphone or a tablet with the **AXMART®** software.
- **Weekly scheduler (Bluetooth®)** : thanks to AXMART®, you can assign up to 20 repeatable tasks to each actuator. This mode requires a smartphone or a tablet with the **AXMART®** software.
- **Wire control**: electric control - permanent (on-off or 3-modulating point) or pulse.
- **Positioning** (learning mode) : this mode is needed for storing limit positions of the actuator.
- **Positioning** : allows the control of the actuator with a 0-10V or 4-20mA setpoint signal.

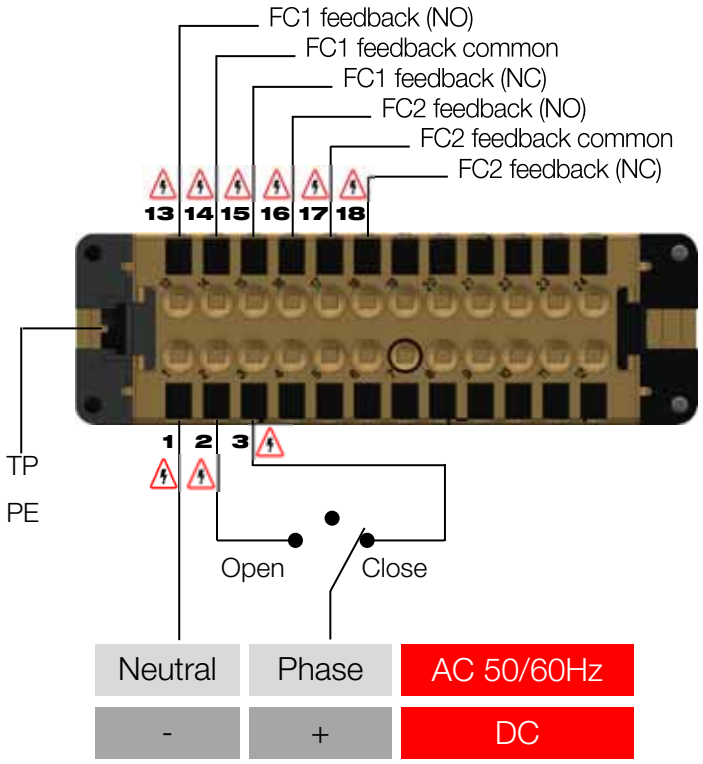
Functioning mode selection

The « Next Mode » button scrolls the functioning modes in the following order:

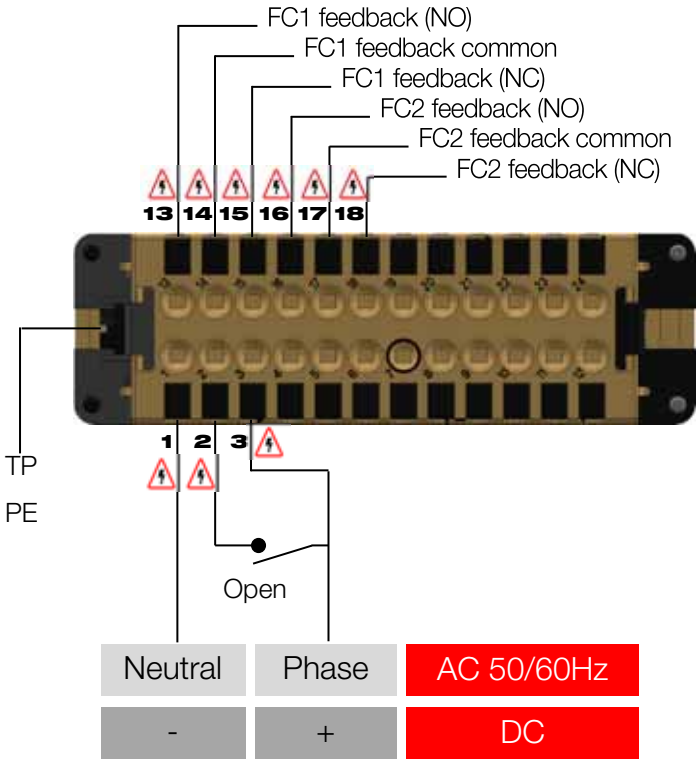
Bluetooth® (local control)
↓
Bluetooth® (schedule)
↓
Wire control
↓
Learning mode (positioning)
↓
positioning

When the mode is selected, press « OK Mode » to confirm.

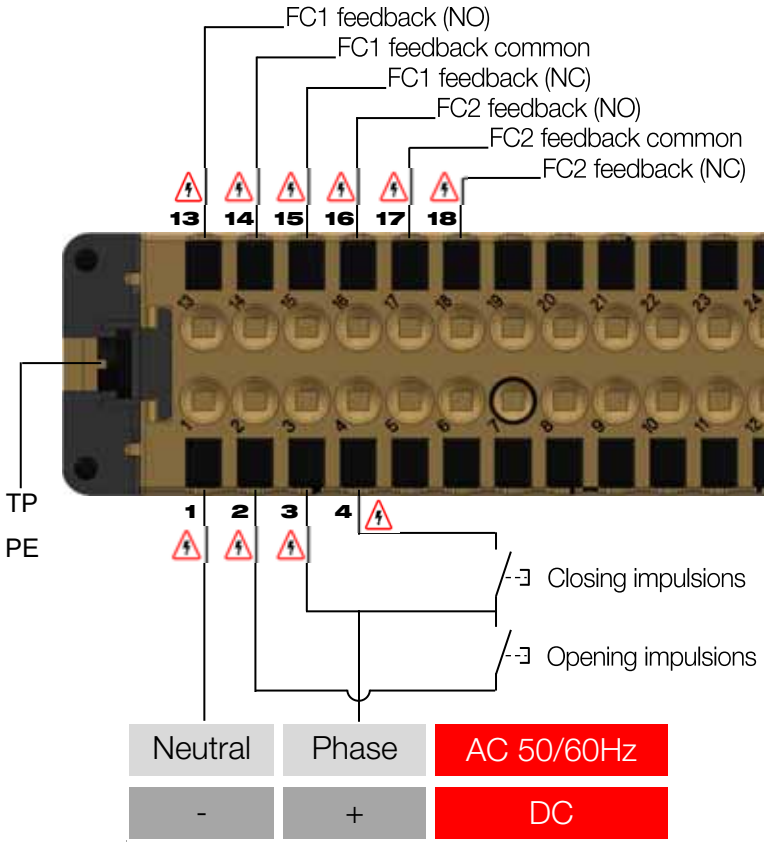
Permanent wiring
3-modulating points



Permanent wiring
ON/OFF



Wiring • VT+ models with pulse control

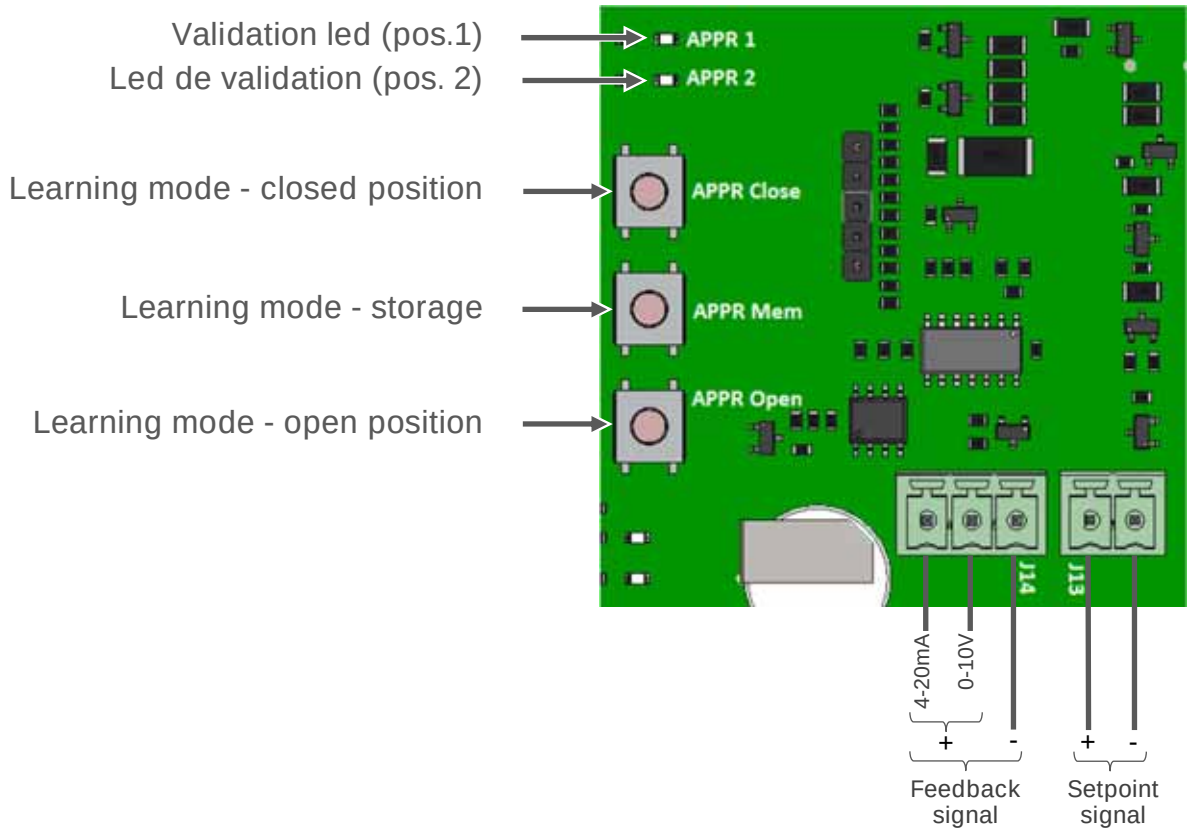


A feedback signal (4-20mA or 0-10V) is available from terminal 9 10-11 whichever your selected control mode is. See wiring diagram page 23

At least
500ms
Between two impulssions

- The earth (**TP/PE**) and the pins **1, 2, 3, 4** must be wired through the same cable.
- Possible presence of 250V 50/60Hz (or 300V DC) on these pins. The other ones are powered with safety extra low voltage (SELV).

Positioning function



Learning mode

- Put the power on
- With the « **Next Mode** » and « Ok Mode » buttons, select the learning mode (the **APPR led** is on)
- Press « **APPR Close** » button to drive the valve up to its closed position and keep both « **APPR Close** » and « **APPR Mem** » buttons pressed during **2 seconds**.
- The **APPR1 led** blinks and lights up. The closed position is correctly recorded
- Press « **APPR Open** » button to drive the valve up to its open position and keep both « **APPR Open** » and « **APPR Mem** » buttons pressed during **2 seconds**.
- The **APPR2 led** blinks and lights up. The open position is correctly recorded

Both open and closed positions are recorded. Select positioning (POSI) mode and press « **OK Mode** » to confirm.

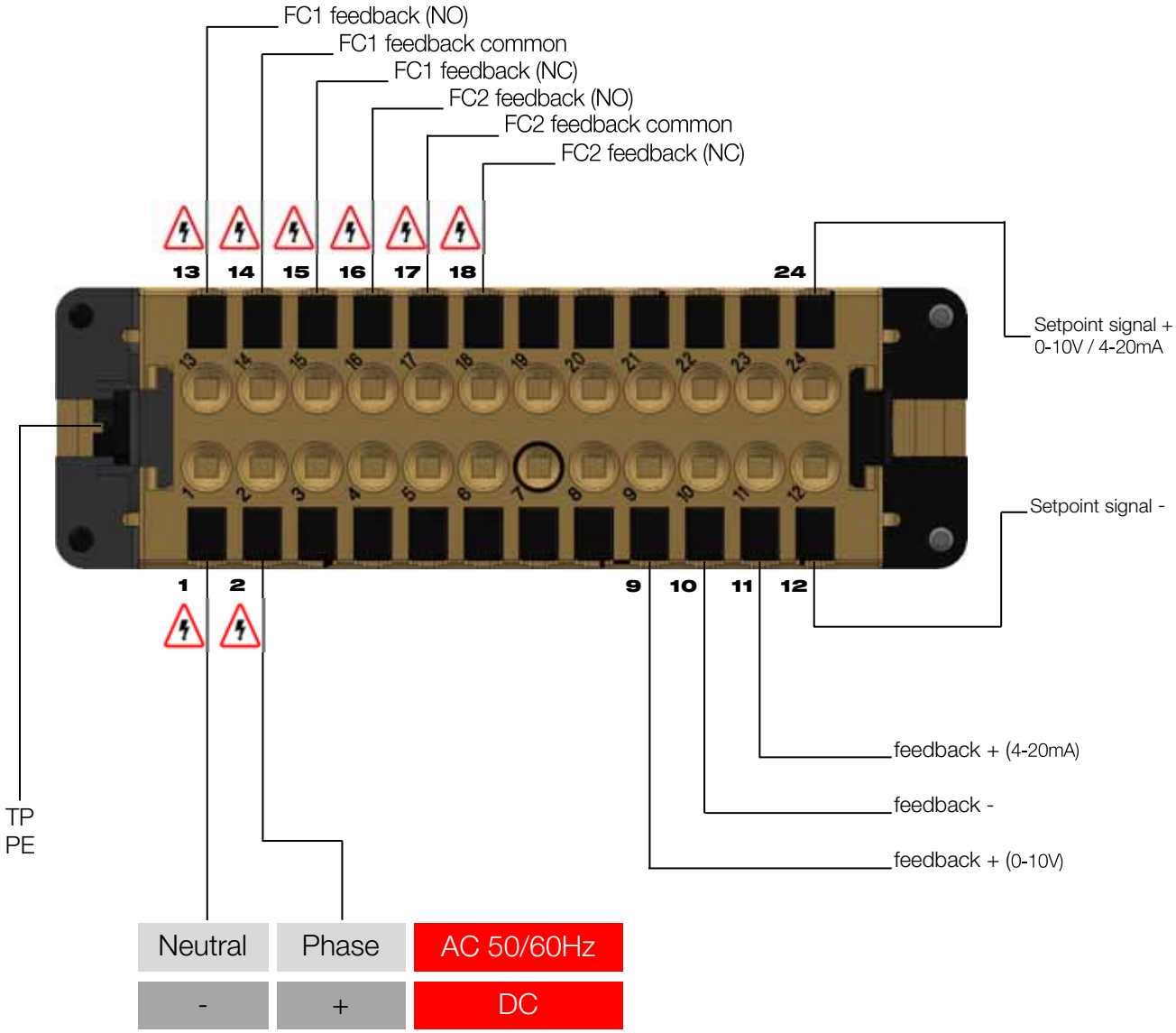
Setpoint signal

The actuator positions itself according to the setpoint signal. Two signal types are available, a 0-10V range voltage signal or a 4-20mA range current signal. It's possible to change this signal using the **AXMART®** software without modifying the electric wiring.

Feedback

According to its position, the actuator will provide a proportional voltage signal (0-10V) or a current signal (4-20mA). It's possible to modify the feedback signal using the **AXMART®** software, but it requires changing the wiring.

Positioning function: wiring



The 0-10V and 4-20mA feedback signals are not available at the same time.

- The earth (**TP/PE**) and the pins **1, 2, 3, 4** must be wired through the same cable.
- Possible presence of 250V 50/60Hz (or 300V DC) on these pins. The other ones are powered with safety extra low voltage (SELV).

Bluetooth® function

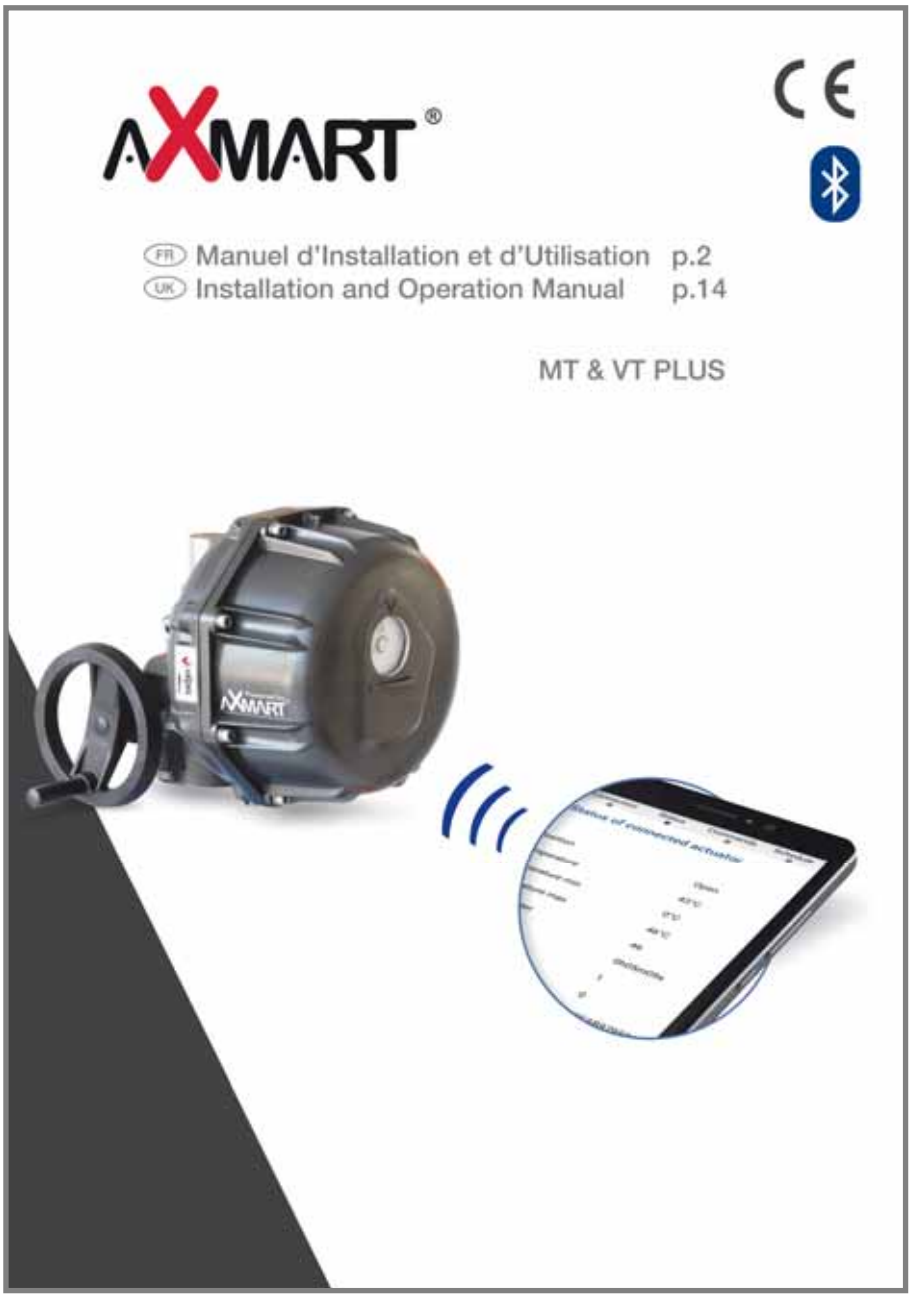
Wireless local control

AXMART® software allows the actuator control with maximum range of 20m (in open field).

Weekly scheduling

Thanks to **AXMART®** software, the actuator can be programmed to schedule up to 20 tasks weekly repeatable. The actuator will become a stand-alone unit.

For any further information, refer to the operation manual (reference **DSBA3303**)



Technical data: 600 and 1000Nm models

	VT600	VT1000
Implantation		
Materials	Housing: Aluminium + EPOXY coating Drive: Steel + Zn treatment Shafts and screws : Stainless steel	
Sealing	IP68	
Environment	Both inside and outside (wet environments possible)	
Operating temperature	-20°C to +70°C	
Operating altitude	Altitude up to 2000m	
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).	
Noise level	63db	
Weight	25kg	
Mechanical data		
Maximum torque	600Nm	1000Nm
Operating time (90°)	42s	65s
Angular range	90° (180°-270° on request)	
Duty cycle	50%	
Drive ISO5211	Star 36 - F10/F12	
Manual control	Secured handwheel without clutching system	
Electrical data		
Electric connection	3 x ISO M20 and specific multipin connector	
Technology of motors	Brushless	
Voltages[1)]	100V to 240V AC 50/60Hz and 100V to 300V DC 24V to 48V AC 50/60Hz and 24V to 72V DC	
Overvoltage category[2)]	TRANSIENT OVERVOLTAGES up to the levels of OVERVOLTAGE CATEGORY II	
Power	300W	
Rated current	1 A (300 V), 1,5 A (240 V), 12,5 A (24 V)	
Torque limiter	Electronic	
Number of feedback switches	2 (4 in option)	
Limit switches maximum voltage	4 to 250V AC/DC (Overvoltage category II)	
Limit switches maximum current	1mA to 5A max.	
Anticondensation heaters	3 x 10W	

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

Technical data: 1500 and 2400Nm models

	VT1500	VT2400
Implantation		
Materials	Housing: Aluminium + EPOXY coating Drive: Steel + Zn treatment Shafts and screws : Stainless steel	
Sealing	IP68	
Environment	Both inside and outside (wet environments possible)	
Operating temperature	-20°C to +70°C	
Operating altitude	Altitude up to 2000m	
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).	
Noise level	63db	
Weight	57kg	
Mechanical data		
Maximum torque	1500Nm	2400Nm
Operating time (90°)	155s	210s
Angular range	90° (180°-270° on request)	
Duty cycle	50%	
Drive ISO5211	Star 46 - F12/F14/F16	
Manual control	Secured handwheel without clutching system	
Electrical data		
Electric connection	3 x ISO M20 and specific multipin connector	
Technology of motors	Brushless	
Voltages[1)]	100V to 240V AC 50/60Hz and 100V to 300V DC 24V to 48V AC 50/60Hz and 24V to 72V DC	
Overvoltage category[2)]	TRANSIENT OVERVOLTAGES up to the levels of OVERVOLTAGE CATEGORY II	
Power	300W	
Rated current	1 A (300 V), 1,5 A (240 V), 12,5 A (24 V)	
Torque limiter	Electronic	
Number of feedback switches	2 (4 in option)	
Limit switches maximum voltage	4 to 250V AC/DC (Overvoltage category II)	
Limit switches maximum current	1mA to 5A max.	
Anticondensation heaters	3 x 10W	

1) The actuator tolerates voltage fluctuation of the electrical grid up to ± 10 % of its nominal system operating voltage
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Codification