736-746 XS-V-SHAPE + TCR-T CONTROL VALVE

FEATURES

736XS (steel) and 746XS (stainless steel) + TCR-T 2-way ball-valves with V-shaped ball are designed for controlling flow-rate, pressure or temperature in networks of industrial fluids. These 3-piece external tie-bolt ball valves are easy to remove for servicing. This full-bore valve has an anti-static device and double sealing at the cable gland. The ball is available as a 30° "V" or a 60° "V" with different flow-rate coefficients. The TCR-T control actuator is ultra-compact and equipped with a high-performance screen for parameter setting and display.

AVAILABLE MODELS

1/2" to 2" diameters

Supply voltages: 24V AC-DC and 230 V AC

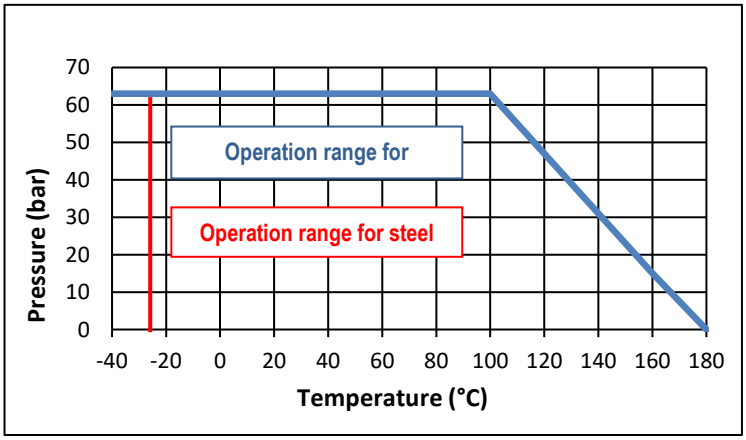
Regulating signal: 4-20 mA, 2-20 mA, 0-10V, 2-10V

Feedback: 4-20 mA, 2-20 mA, 0-10V, 2-10V

Connection	G	SW	BW
Steel	736 XS	735 XS	734 XS
Stainless steel	746 XS	743 XS	745 XS

LIMITS OF USE

Material	steel	stainless steel
Fluid	Use not recommended on steam or gases with a speed > 10m/s	
Fluid pressure: PS	64 bar (20°C)	
Fluid temperature: WT	-25°C / +180°C	- 40°C / +180°C
Ambient temperature	- 20°C / + 70°C	
Service factor	50 – 70%	



DIRECTIVES AND MANUFACTURING STANDARDS

OBJECT	Standard	ON	OBJECT	Standard
Pressure Equipment Directive 2014/68/EC	1/2" to 1": not subject		Final test	NKS 12266
	1"1/4 à 2": category III	TÜV 0035	Material certificate	NKS 10204
Size	EN 12516-1		Connection Motorisation	ISO 5211:
Steel grades	EN 1503-1			

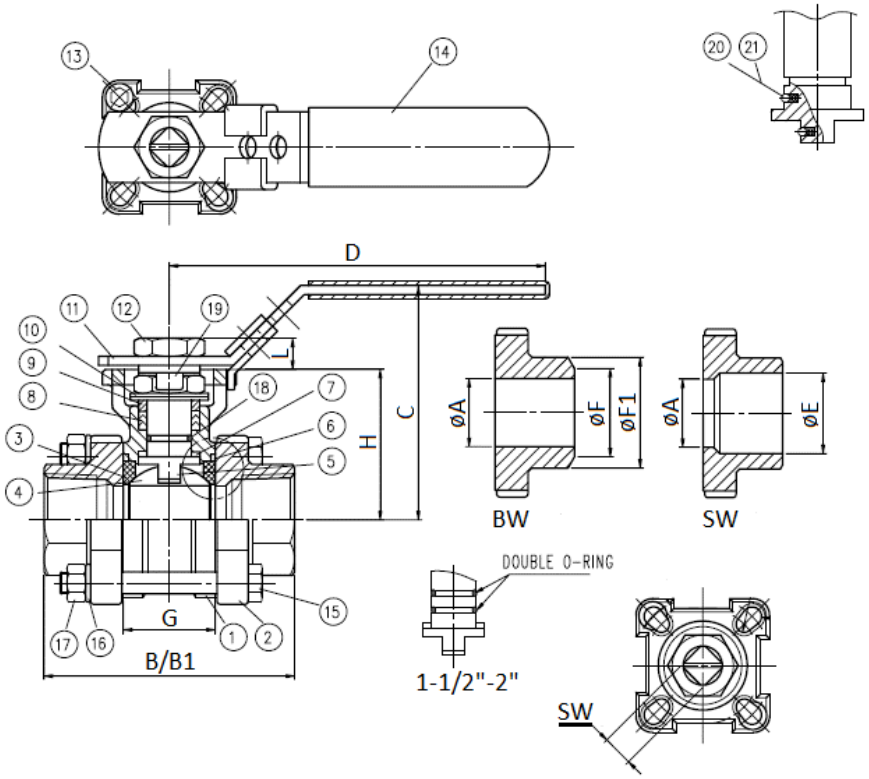
Information given as an indication only, and subject to possible modifications

SECTORIEL S.A.
45 rue du Ruisseau
38290 SAINT QUENTIN-FALLAVIER – FRANCE
Telephone: +33 4 74 94 90 70 - Fax: +33 4 74 94 13 95
www.sectoriel.com / Email : sectoriel@sectoriel.fr

736-746 XS-V-SHAPE + TCR-T CONTROL VALVE

CONSTRUCTION

No.	Name	Steel	Stainless steel	No.	Name	Steel	Stainless steel
1	Body	1.0619	1.4408	**12**	Nut	304 SS	304 SS
2	Ends	1.0619	1.4408	**13**	Stop	304 SS	304 SS
3.	Seats	PTFE+15%GF	PTFE+15%GF	**14**	Coupling	PVC	PVC
4	Ball	CF8M / 316	CF8M / 316	**15**	Tie-bolts	304 SS	304 SS
5	Stem	316 SS	316 SS	**16**	Washer	304 SS	304 SS
6.	Body gasket	PTFE	PTFE	**17**	Nuts	304 SS	304 SS
7.	Washer	PTFE+15%GF	PTFE+15%GF	**18.**	O-ring	FPM	FPM
8.	Gasket	PTFE	PTFE	**19**	Tab washer	304 SS	304 SS
9	Spacer	304 SS	304 SS	**20**	Anti-static	316 SS	316 SS
10	B. washer	301 SS	301 SS	**21**	Spring	304 SS	304 SS
11	Lever	304 SS	304 SS	* Parts included in the maintenance kit			



DIMENSIONS (mm)

DN	A	B (G)	B (SW)	B1 (BW)	C	D	E	F	F1	G	H	J1	SW
1/2“	16	75	75	75	70.9	110	21.9	17	22.4	25.2	42.3	42	9
3/4“	20	80	80	90	73.4	110	27.2	22	28.2	27.7	44.8	42	9
1”	24.5	90	90	100	84.1	135	34.0	28	33.7	33.0	54.0	50	11
1“1/4	32	110	110	110	89.3	135	42.7	37	44.0	41.2	59.2	50	11
1” 1/2	38	120	120	125	109.5	165	48.8	43	50.8	49.3	73.5	70	14
2”	50	140	140	150	118.9	165	61.3	54	62.6	63.6	82.9	70	14

Information given as an indication only, and subject to possible modifications

736-746 XS-V-SHAPE + TCR-T CONTROL VALVE

TCR-T ELECTRICAL MOTORISATION

The TCR-T motorisation proposed as standard comprises:
- IP67 epoxy coated aluminium housing for actuator and steel gear box.
- a safety coefficient of 1.3 minimum compared to the nominal torque of the valve.
- an upstream / downstream pressure difference ΔP=10 bar max.

The actuator's assembly is direct.

DN	Actuator	Power (W)		Intensity	Current	Time (s)		Input signal	Output signal
		TCR-T	TCR-T-KT32	230V AC	24V AC-DC	TCR-T	TCR-T-KT32		
1/2“	TCR-02-T	10	36	1	2	10	15	4-20 mA	
3/4“	TCR-02-T	10	36	1	2	10	15	4-20 mA	
1”	TCR-02-T	10	36	1	2	10	15	4-20 mA	
1“1/4	TCR-02-T	10	36	1	2	10	15	4-20 mA	
1” 1/2	TCR-05-T	25	40	1	2	12		4-20 mA, 2-20 mA, 0-10V, 2-10V	
2”	TCR-05-T	25	40	1	2	12		4-20 mA, 2-20 mA, 0-10V, 2-10V	

For any other operating conditions, please contact us.
* indicative time for actuator running empty

FLOW-RATE COEFFICIENT (Kv)

The Kv (m3/h) values as a function of the degree of opening, are the following

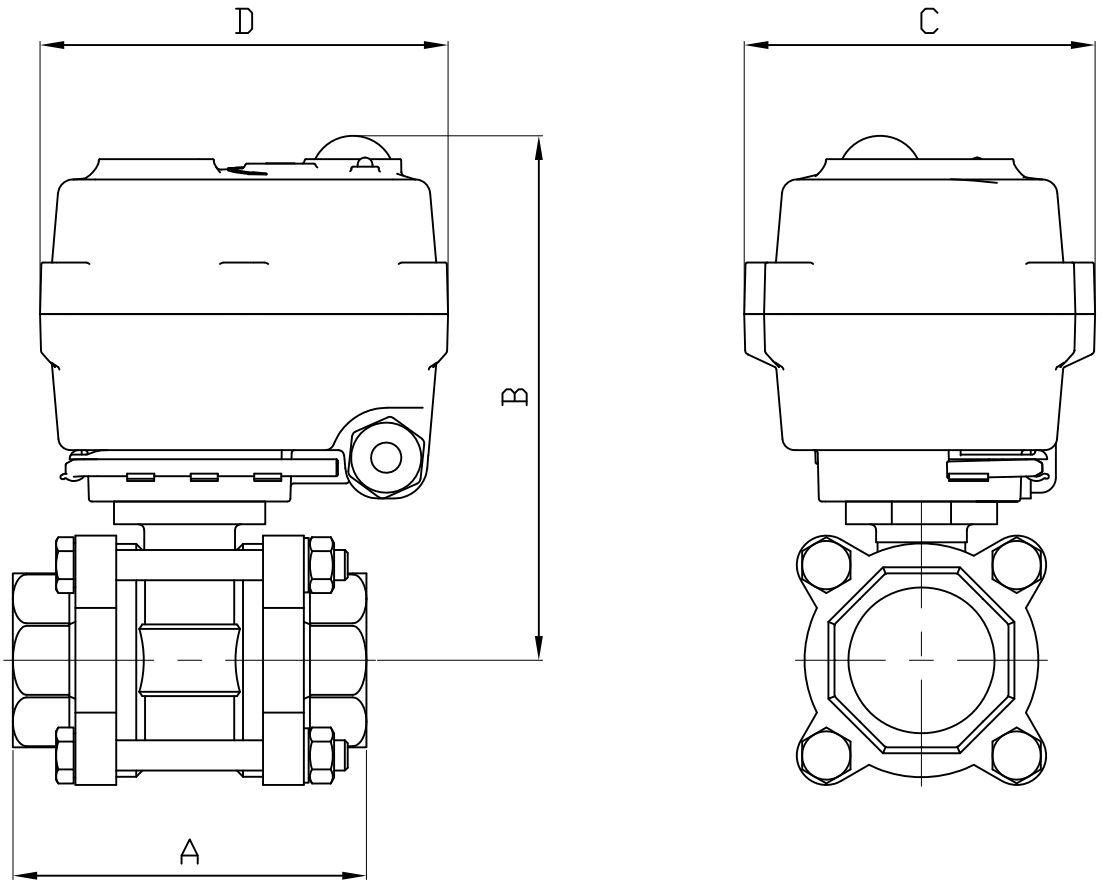
DN	Ball	Kv (m3/h) per opening angle																		
		0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°
15	30°	0	0	0	0	0	0	0	0.1	0.1	0.2	0.4	0.8	1.1	1.5	1.8	2.5	3.1	4.1	5.1
	60°	0	0	0	0	0	0	0	0.2	0.4	0.6	0.9	1.4	1.9	2.6	3.3	4.6	5.9	8.0	10.1
20	30°	0	0	0	0	0	0.1	0.2	0.4	0.6	0.9	1.2	1.6	1.9	2.5	3.1	3.8	4.6	5.7	6.8
	60°	0	0	0	0	0	0.2	0.3	0.6	0.9	1.3	1.8	2.4	2.9	4.0	5.0	6.7	8.4	11.5	14.5
25	30°	0	0.03	0.04	0.3	0.5	0.9	1.2	1.7	2.2	2.8	3.4	4.2	5.0	6.3	7.5	8.9	10.2	11.9	13.7
	60°	0	0.03	0.05	0.4	0.7	1.1	1.5	2.0	2.6	3.2	3.9	5.1	6.2	8.0	9.7	12.6	15.5	20.0	24.5
40	30°	0	0.01	0.02	0.4	0.7	1.3	2.0	2.7	3.4	4.7	5.9	7.4	8.9	11.3	13.7	16.3	18.8	22.1	25.3
	60°	0	0.01	0.02	0.5	0.9	1.7	2.4	3.8	5.2	6.4	7.6	10.1	12.6	15.7	18.8	24.7	30.6	39.3	47.9
50	30°	0	0.16	0.32	1.1	1.9	2.9	3.9	5.0	6.1	7.5	9.0	11.3	13.6	17.0	20.4	24.6	28.8	33.6	38.4
	60°	0	0.22	0.44	1.3	2.1	3.4	4.7	6.7	8.7	11.2	13.6	17.9	22.3	28.6	34.9	43.7	52.4	66.9	81.4
80	30°	0	0.30	0.60	1.7	2.9	5.1	7.4	10.4	13.5	18.2	22.9	29.0	35.1	43.4	51.8	62.6	73.4	85.4	97.4
	60°	0	0.41	0.82	2.1	3.4	6.4	9.3	14.4	19.5	26.6	33.8	45.1	56.3	73.7	91.0	114	137	176	216
100	30°	0	0.37	0.74	2.8	4.8	8.3	11.8	17.7	23.5	31.5	39.5	50.3	61.2	75.6	90	106	123	145	167
	60°	0	0.82	1.6	3.3	5.0	10.3	15.5	24.0	32.5	44.5	56.5	75.7	94.9	123	151	194	236	297	358

TCR-T-KT32 OPTION

The KT32 option on the TCR-T actuator combines two functions on a same valve:
- Control,
- Return to the (open or closed) position in the event of a power supply cut.

Please contact us.

Information given as an indication only, and subject to possible modifications



TCR-02T-05T

DN	1/2"	3/4"	1"	1"1/2	2"
SERVO	TCR02-T	TCR02-T	TCR02-T	TCR05-T	TCR05-T
A	75	80	90	120	140
B	132.3	132.8	144	194.5	204
C	70	70	70	111	111
D	104	104	104	132	132
KG	1.35	1.64	2.16	5.25	7.5

Informations données à titre indicatif et sous réserve de modifications éventuelles
data subject to alteration

Ech: /	Date :26/11/2019	Dessiné par : E.D.	Tolérances générales : +/- 0.2	Modifications	Date	REV.
ROBINET A TOURNANT SPHERIQUE 746XS V-PORT/V-PORT BALL VALVE 746XS + SERVOMOTEUR TCR/ ELECTRIC ACTUATOR TCR				Matière :		
				Poids (Kg) :		
SECTORIEL	45, Rue du Ruisseau 38297 SAINT QUENTIN FALLAVIER			Traitement : SANS		
				Plan n° Ens 1411		

TCR-02T CONTROL ELECTRICAL ACTUATOR

FEATURES

The TCR-02T electric actuator is intended for motorising ¼ turn valves with a torque of 20 Nm. **Control function**: this motor is used to control the position of the valve depending upon an a 4-20mA or 0-10V input signal. With a compact construction and plastic housing, they are especially well suited for motorising small size ball valves. IP67 leak-tightness: to be used indoors and, possibly, outdoors under a shelter. Possible installation in parallel. Manual control with a key. This actuator has many functions. Parameter setting is done directly on the screen.

AVAILABLE MODELS

Supply voltages: 230V AC, 24V AC/DC.

Control: 4-20mA, 0-10V

LIMITS OF USE

IP Code	IP 67
Ambient temperature	- 20°C / +60°C
Service factor	S4 - 50%

MECHANICAL FEATURES

Gear box	treated steel pinions
Torques	20 Nm
Angle of rotation	90° +/- 2°
Declutching	without
Override control	By key

Actuator	**TCR 02T**	
Torques (Nm)	20	
Voltage	24V AC - DC	95-265V AC-DC
Adjustment signal	4-20mA / 0-10V	
Manoeuvring time (s)	10	10
ISO 5211:	F03/F05 - star 11	

ELECTRICAL FEATURES

Actuator	**TCR 02T**
Motor protection	Thermal switch
Limit switches	Without
Auxiliary switches	Without
Anti-condensation	integrated
Electrical connection	PE M10 + 1.5m cable

Actuator	**TCR 02T**	
Voltage	24V AC - DC	95-265V AC-DC
Power (W)	10	10
Current (A)	0,35	0,035 - 0,075
Fuse protection (A)	2	1

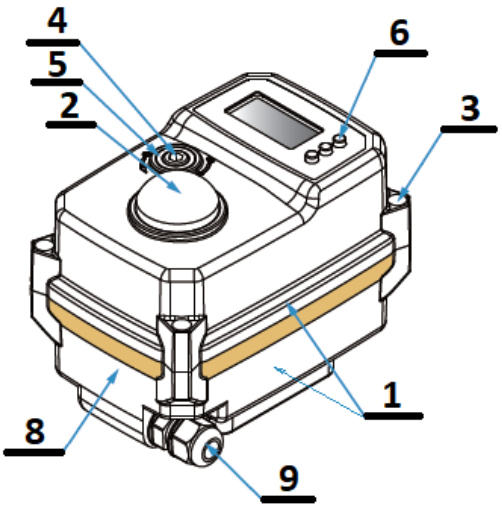
Information given as an indication only, and subject to possible modifications

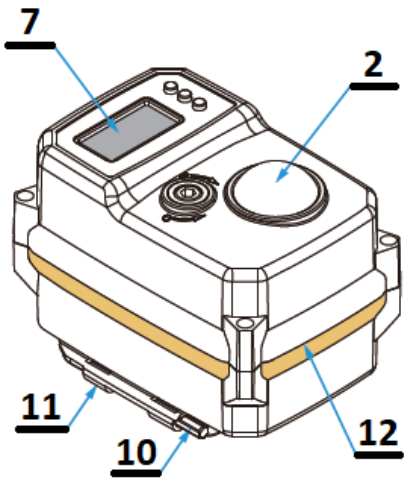
SECTORIEL S.A.
45 rue du Ruisseau
38290 SAINT QUENTIN-FALLAVIER – FRANCE
Telephone: +33 4 74 94 90 70 - Fax: +33 4 74 94 13 95
www.sectoriel.com / Email : sectoriel@sectoriel.fr

TCR-02T CONTROL ELECTRICAL ACTUATOR

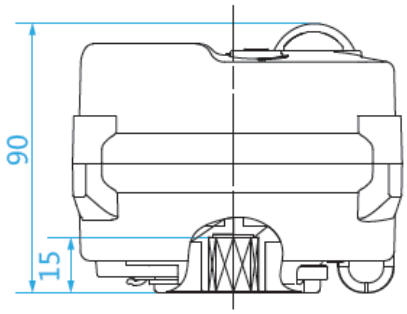
CONSTRUCTION (TCR-02T)

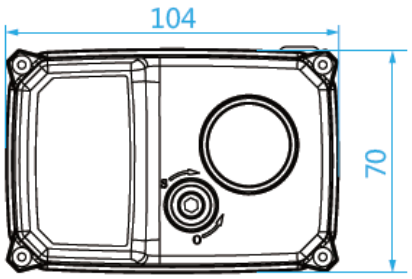
TCR-02T					
No.	**Name**	**Material**	**No.**	**Name**	**Material**
1	Casing + lid	Plastic (ABS)	**7**	1.3" LCD display	OLED
2	Position indicator	Polycarbonate plastic	**8**	Rating plate	PVC
3	Screw x 4	Ansi 304	**9**	Packing gland	Nylon
4	Backup control stem	Ansi 304	**10**	Hex key	Steel
5	Gasket	NBR	**11**	Key support	Plastic (ABS)
6	Adjustment button	Rubber	**12**	Cover gasket	NBR
Weight (kg): 0.620					

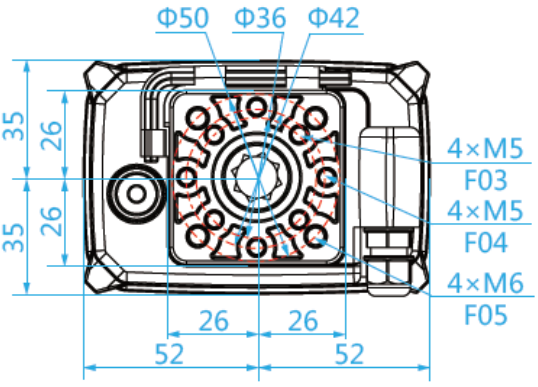




DIMENSIONS (mm)





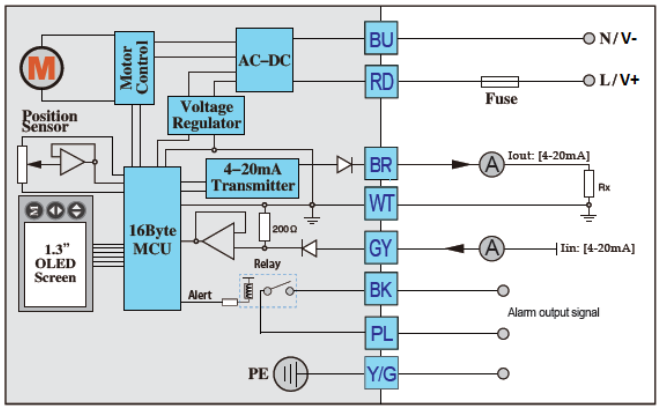


Information given as an indication only, and subject to possible modifications

SECTORIEL S.A.
45 rue du Ruisseau
38290 SAINT QUENTIN-FALLAVIER – FRANCE
Telephone: +33 4 74 94 90 70 - Fax: +33 4 74 94 13 95
www.sectoriel.com / Email : sectoriel@sectoriel.fr

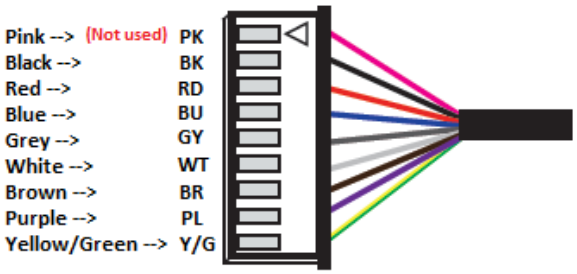
WIRING DIAGRAM (TCR 02T)

BU	Neutral (Blue)
RD	Phase (Red)
BR	Current control signal output (Brown)
WT	Common (White)
GY	Current control signal input (Grey)
BK	Alarm signal (Black)
PL	Alarm signal (Purple)
Y/G	Terre (Jaune/Vert)

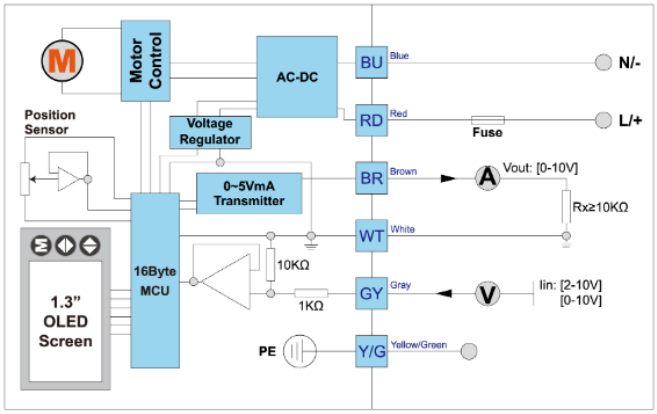


SCHEMA 4-20mA

Version 4-20mA / 0-10V :



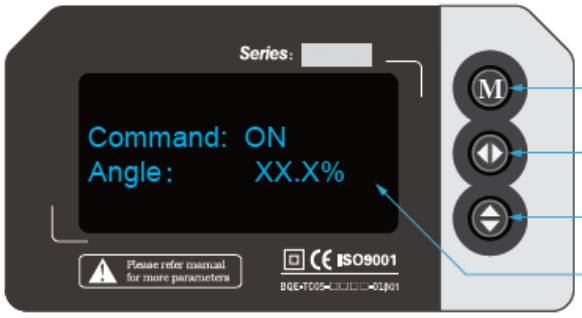
BU	Neutral (Blue)
RD	Phase (Red)
BR	Voltage control signal output (Brown)
WT	Common (White)
GY	Voltage control signal input (Grey)
Y/G	Earth (Yellow / Green)
BK	Not used
PL	Not used



SCHEMA 0-10V

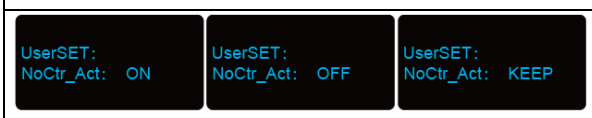
Information given as an indication only, and subject to possible modifications

DESCRIPTION OF THE 1.3'' LCD SCREEN

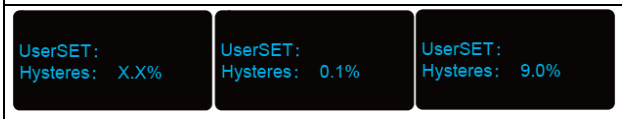
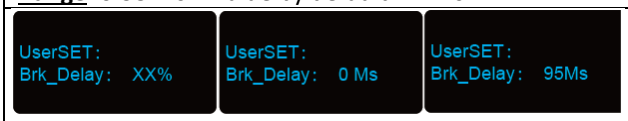


ACTUATOR SETTINGS

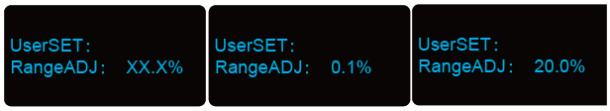
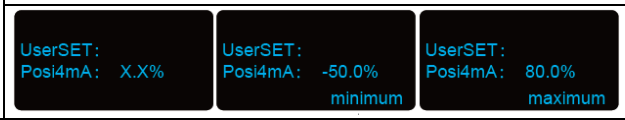
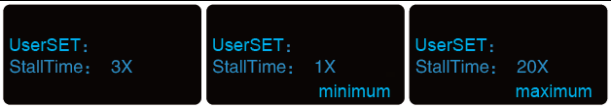
The following functions can have their parameters set from the menu accessible on the screen:

STEP	TITLE	FUNCTION AND VALUES
1	Entering the menu	Press the "M" button for more than 5 s.
2	Enter the password	Press the "M" button for more than 5 s. Enter the code "333" (use the keys K2 and K3) Press again the button "M"
		
3	Choice of language	English or Mandarin
		
4	Choosing the direction of rotation of the actuator	**Direct**: 4mA = valve closed / 20 mA = valve open : 0V = valve closed / 10V = valve open
		
		Inverted: 4 mA = valve closed / 20 mA = valve open : 0V = valve closed / 10V = valve open
5	Position by absence of any control signal	In the absence of a control signal, the valve can take 3 positions: ON, OFF or KEEP
		

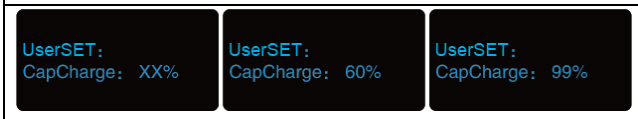
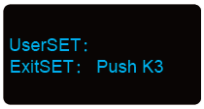
Information given as an indication only, and subject to possible modifications

6	Dead band	This function is used to set the accuracy and the sensitivity of the control: the larger the band, the lower the accuracy; the narrower the band, the more oscillating the system can be. **Setting range:** 0.1 to 9.9% - **Setting by default**: 0.8% 
7	Hysteresis adjustment	This parameter setting is a prerequisite for the next. YES = adjustment is possible NO = no adjustment is possible (value by default) 
8	Hysteresis value	If the previous parameter is "YES", it is possible to set the hysteresis value between 0.1 and 9.9%. The value by default is 0.2%. Do not use the function if there is a play between the valve's stem and the actuator's square. 
9	Manual adjustment of the speed of rotation	This function is used for slowing down the motor. **Range**: 20-100% - Value by default = 100% 
10	Braking time	In order to increase the stability of the motor, the motor will slow down after a short time before reaching its setpoint value position. During current use, this function is not useful. **Range**: 0-95 ms – Value by default = 1 ms 
11	Setting the maximum speed	This setting affects the available torque. Without a special need, do not change it. **Range**: 20-100% - Value by default = 100% 
12	Setting the minimum speed	This setting affects the available torque. Without a special need, do not change it. **Range**: 20-95% - Value by default = 75% 

SECTORIEL S.A.
45 rue du Ruisseau
38290 SAINT QUENTIN-FALLAVIER – FRANCE
Telephone: +33 4 74 94 90 70 - Fax: +33 4 74 94 13 95
www.sectoriel.com / Email : sectoriel@sectoriel.fr

13	Setting the speed for the stroke	This setting is used for setting a % of the actuator stroke during which it will slow down before reaching the setpoint value position. **Range**: 0.1-20% - Value by default = 10% 
14	Redefining the 4 mA or 10V position	Used to set another position than 0% for the 4 mA value. This function is useful for valves with an opening angle different from 90°. **Range**: -50% +80% - Value by default = 0.0% 
15	Redefining the 20 mA position	Used to set another position than 100% for the 20 mA or 10V value. This function is useful for valves with an opening angle different from 90°. **Range**: 20% +220% - Value by default = 100.0% 
16	Modification of the 4 mA output signal	If a deviation is found on the 4mA output signal, this function is used to adjust it. If the number is increased, the current is higher. If the number is decreased, the current is lower. **Range**: 000_481_A – Value by default 191_A **NB**: always limit the lower value to 20 mA 
17	Modification of the 20mA output signal	If a deviation is found on the 20mA output signal, this function is used to adjust it. If the number is increased, the current is higher. If the number is decreased, the current is lower. **Range**: 191_1000_A – Value by default 909_A 
18	Response time	Used to set the response speed of the valve. The smaller the value, the less sensitive the control. The bigger the value, the more sensitive it is. Increase the value when the response speed is too low. **Setting range:** 1x20x – Value by default 3x 

SECTORIEL S.A.
45 rue du Ruisseau
38290 SAINT QUENTIN-FALLAVIER – FRANCE
Telephone: +33 4 74 94 90 70 - Fax: +33 4 74 94 13 95
www.sectoriel.com / Email : sectoriel@sectoriel.fr

19	Checking the feed signal	The actuator periodically tests its electrical power supply. A change of a value will change the interval between two tests. In current use, there is no need to change this parameter. 
20	Power supply position by default	This setting is not available on this version (see version T-KT) **Value by default**: KEEP 
21	Capacitor charge	This setting is not available on this version (see version T-KT) **Value by default**: 95% 
22	Alarm test (version 4-20 mA)	This function is used to control whether a defect alarm is broadcast or not. It is especially used for factory testing **Value by default**: ON 
23	Exiting the menu	Press K3 to exit the menu The system will switch back in the automatic checking mode. 

SECTORIEL S.A.
45 rue du Ruisseau
38290 SAINT QUENTIN-FALLAVIER – FRANCE
Telephone: +33 4 74 94 90 70 - Fax: +33 4 74 94 13 95
www.sectoriel.com / Email : sectoriel@sectoriel.fr

TROUBLESHOOTING

Defect met	Cause of defect	Method of solving
Inactive actuator	Non-connected electrical grid.	Connect to the electrical grid.
	Wrong voltage.	Check the actuator's voltage.
	Motor overheating.	Check the torque on the valve.
	Faulty connection.	Check the connection to the terminal box.
	Damaged start capacitor.	Contact the supplier for repair.
No switch signal	Faulty connection.	Check the connections.
	Damaged microswitch	Change the microswitch
Valve that is not fully closed	Use the return signal from the actuator check.	Receiving a return signal does not mean that the actuator is fully closed, hence do not cut the power supply.
	The hysteresis increases due to wear or between the actuator and the valve's stem.	Readjust the limit cams. Contact the supplier for repair.
Presence of humidity or water in the actuator	Unsuitable cable cross-section being used.	Contact the supplier for repair.
	The cable connection is not leak-tight.	
	Worn sealing gaskets.	
	Loose cover screws.	Dry the internal parts and tighten the cover screws.

SECTORIEL S.A.
45 rue du Ruisseau
38290 SAINT QUENTIN-FALLAVIER – FRANCE
Telephone: +33 4 74 94 90 70 - Fax: +33 4 74 94 13 95
www.sectoriel.com / Email : sectoriel@sectoriel.fr

TCR-05-11-20-40T CONTROL ELECTRICAL ACTUATOR

FEATURES

The TCR-T electric actuator is intended for motorising ¼ turn valves with a torque of 50, 110, 200 or 400 Nm.
Control function: this motor is used to control the position of the valve depending upon an a 4-20mA or 0-10V input signal. With a compact construction and plastic housing, they are especially well suited for motorising small size ball valves. IP67 leak-tightness: to be used indoors and, possibly, outdoors under a shelter. Possible installation in parallel. Manual control with a key. This actuator offers many functions (see § parameter setting menu) Parameter setting is done directly on the screen.

AVAILABLE MODELS

Supply voltages : 230V AC, 24V AC/DC.
Control : 4-20mA, 0-20mA, 2-10V, 0-10V.

LIMITS OF USE

IP Code	IP 67
Ambient temperature	- 20°C / +60°C
Service factor	S4 - 50% (TCR 05-11T)
	S3 - 85% (TCR 20-40T)

MECHANICAL FEATURES

Gear box	treated steel pinions
Torques	50 - 110 - 200 - 400 Nm
Angle of rotation	90° +/- 2°
Declutching	Without (TCR 05-11T)
	With (TCR 20-40T)
Override control	By key

IR 1 IP 67 CE

Actuator	**TCR 05T**		**TCR 11T**	
Torques (Nm)	50		110	
Voltage	24V AC - DC	95-265V AC-DC	24V AC - DC	95-265V AC-DC
Adjustment signal	4-20mA, 0-20mA, 2-10V, 0-10V			
Manoeuvring time (s)	12	12	10	10
ISO 5211:	F05/F07 - star 14		F05/F07 - star 17	

Actuator	**TCR 20T**		**TCR 40T**	
Torques (Nm)	200		400	
Voltage	24V AC - DC	95-265V AC-DC	24V AC - DC	95-265V AC-DC
Adjustment signal	4-20mA, 0-20mA, 2-10V, 0-10V			
Manoeuvring time (s)	25	25	25	25
ISO 5211:	F07/F10 - star 22		F07/F10 - star 22	

Information given as an indication only, and subject to possible modifications

ELECTRICAL FEATURES

Actuator	TCR 05T	TCR 11T
Motor protection	Thermal switch	
Limit switches	Without	
Auxiliary switches	Without	
Anti-condensation	integrated	
Electrical connection	PE M20 + 1.5m cable	2 x PE M14 1.5m cable

Actuator	TCR 05T		TCR 11T	
Voltage	24V AC - DC	95-265V AC-DC	24V AC - DC	95-265V AC-DC
Power (W)	25	25	100	100
Current (A)	0,83	0,18	2,2	0,26 - 0,52
Fuse protection (A)	4	2	10	2

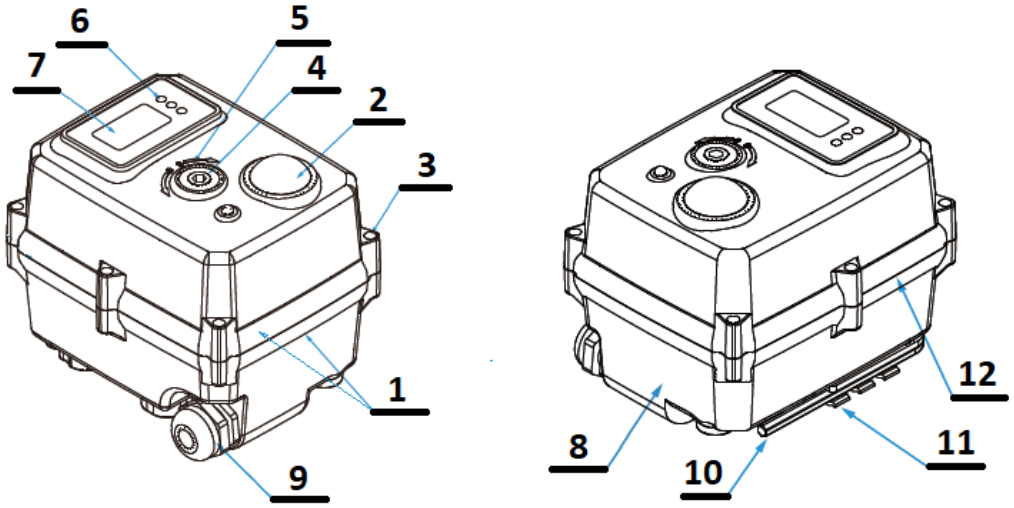
Actuator	TCR 20T	TCR 40T
Motor protection	Thermal switch	
Limit switches	Without	
Auxiliary switches	Without	
Anti-condensation	integrated	
Electrical connection	2 x PE M20 + 1.5m cable	2 x PE M20 + 1.5m cable

Actuator	TCR 20T		TCR 20T	
Voltage	24V AC - DC	95-265V AC-DC	24V AC - DC	95-265V AC-DC
Power (W)	50	50	80	80
Current (A)	3,3	0,36	3,3	0,36
Fuse protection (A)	8	2	8	2

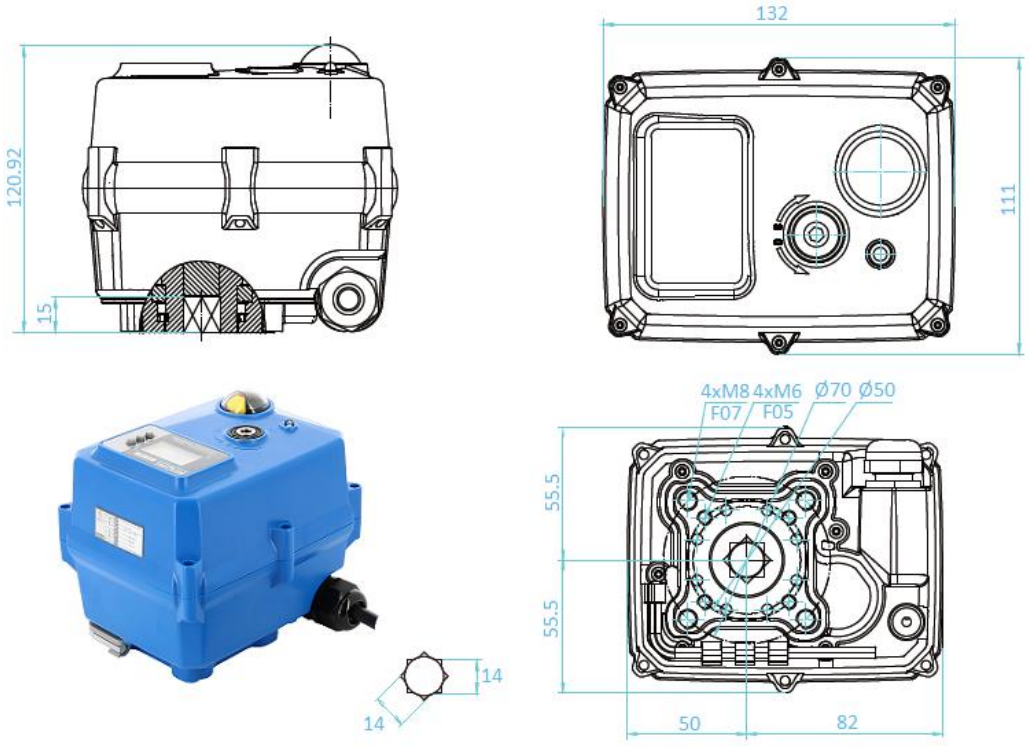
SECTORIEL S.A.
45 rue du Ruisseau
38290 SAINT QUENTIN-FALLAVIER – FRANCE
Telephone: +33 4 74 94 90 70 - Fax: +33 4 74 94 13 95
www.sectoriel.com / Email: sectoriel@sectoriel.fr

CONSTRUCTION (TCR-05T)

TCR-05T					
No.	**Name**	**Material**	**No.**	**Name**	**Material**
1	Casing + lid	Plastic (ABS)	**7**	1.3" LCD display	OLED
2	Position indicator	Polycarbonate plastic	**8**	Rating plate	PVC
3	Screw x 6	Ansi 304	**9**	Packing gland	Nylon
4	Backup control stem	Ansi 304	**10**	Hex key	Steel
5	Gasket	NBR	**11**	Key support	Plastic (ABS)
6	Adjustment button	Rubber	**12**	Cover gasket	NBR
Weight (kg): 1.800					



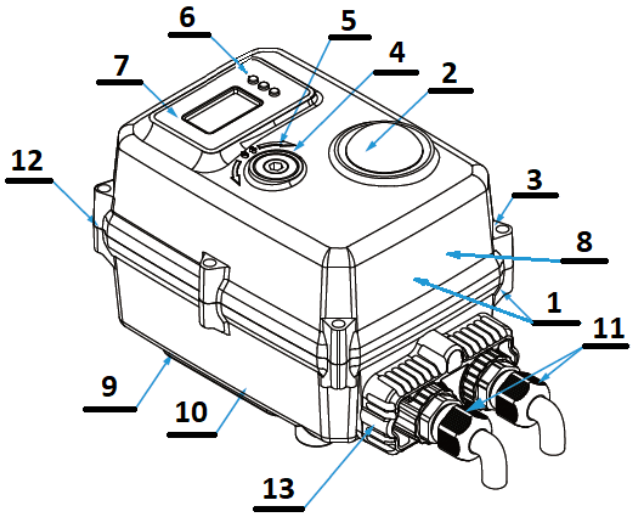
DIMENSIONS (mm)



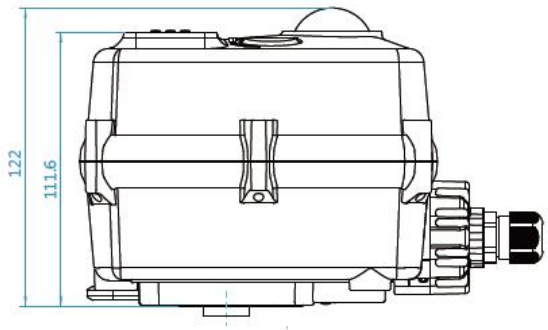
Information given as an indication only, and subject to possible modifications

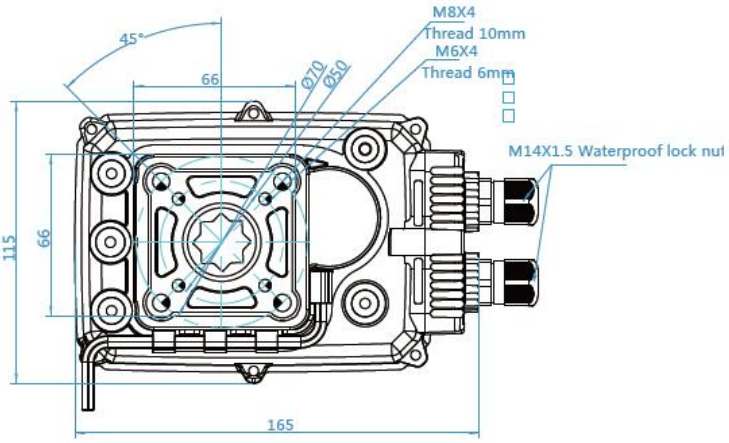
CONSTRUCTION (TCR-11T)

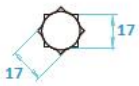
TCR-11T					
No.	**Name**	**Material**	**No.**	**Name**	**Material**
1	Casing + lid	Plastic (ABS)	**7**	1.3" LCD display	OLED
2	Position indicator	Polycarbonate plastic	**8**	Rating plate	PVC
3	Screw x 6	Ansi 304	**9**	Key support	Plastic (ABS)
4	Backup control stem	Ansi 304	**10**	Hex key	Steel
5	Gasket	NBR	**11**	X 2Packing gland	Nylon
6	Adjustment button	Rubber	**12**	Cover gasket	NBR
Weight (kg): 2.200			**13**	Cable gland unit	Plastic (ABS)



DIMENSIONS (mm)





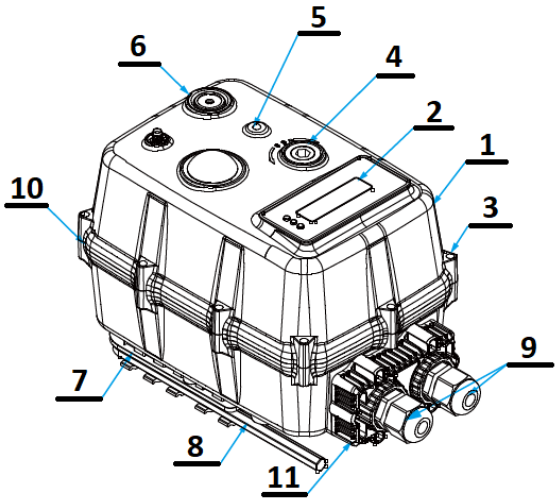


Information given as an indication only, and subject to possible modifications

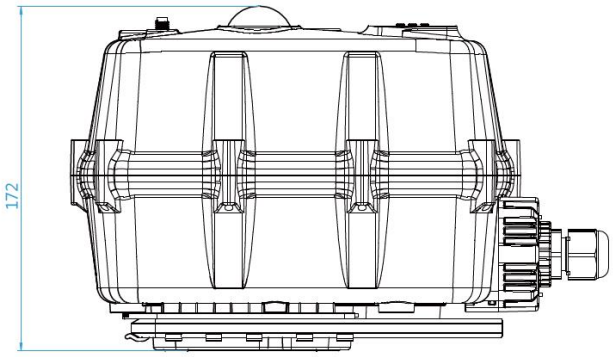
TCR-05-11-20-40T CONTROL ELECTRICAL ACTUATOR

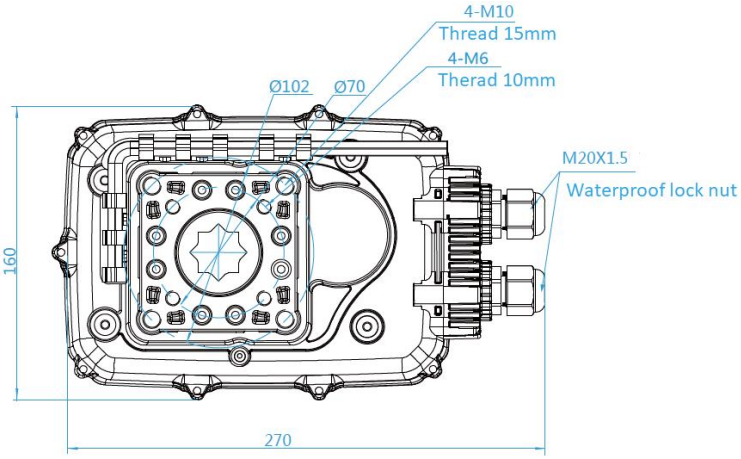
CONSTRUCTION (TCR-20T / TCR-40T)

TCR-20T / TCR-40T					
No.	**Name**	**Material**	**No.**	**Name**	**Material**
1	Casing + lid	PC + PET	**6**	Clutch	Polyoxymethylene POM
2	Position indicator	Polycarbonate plastic	**7**	Key support	Plastic ABS
3	Screw x 6	Aisi 304	**8**	Hex key	Steel
4	Backup control stem	Aisi 304	**9**	X 2Packing gland	Nylon
5	LED	Transparent PC	**10**	Cover gasket	NBR
Weight (Kg) : 6,000			**11**	Cable gland unit	Plastic ABS



DIMENSIONS (mm)

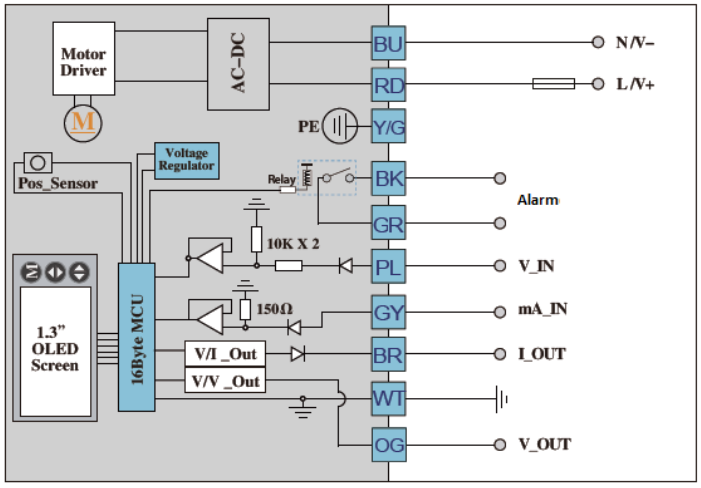


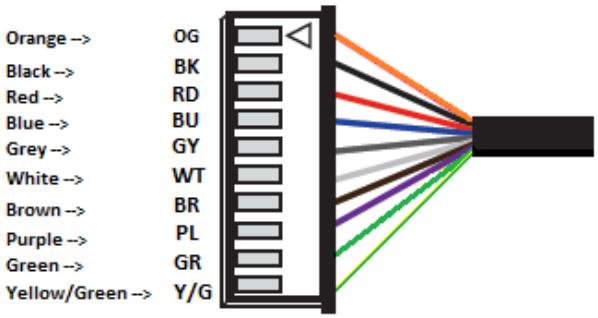


Information given as an indication only, and subject to possible modifications

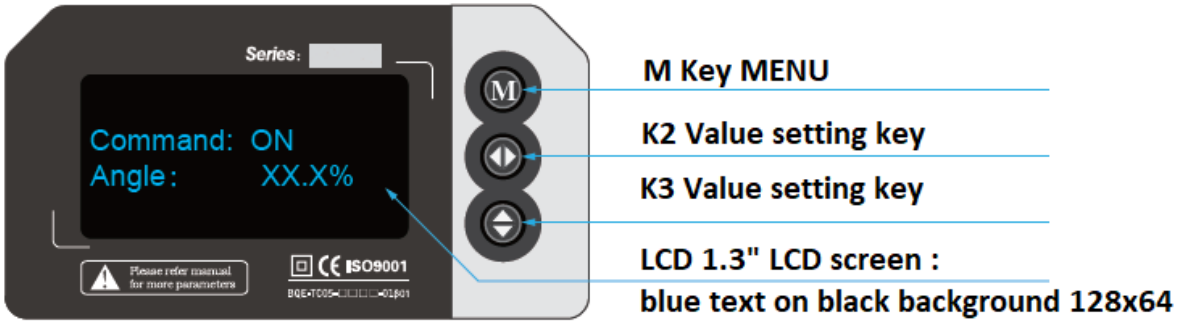
WIRING DIAGRAM

BU	Neutral (Blue)
RD	Phase (Red)
Y/G	Earth (Yellow / Green)
BK	Alarm (Black)
GR	Alarm (Green)
PL	Voltage control signal input (Purple)
GY	Current control signal input (Grey)
BR	Current control signal output (Brown)
WT	Signal control common (White)
OG	0-10V voltage control signal output (Orange)





DESCRIPTION OF THE 1.3'' LCD SCREEN



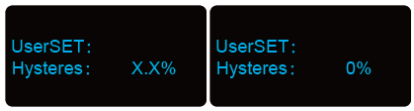
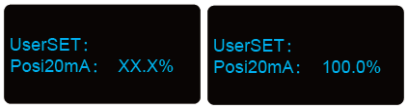
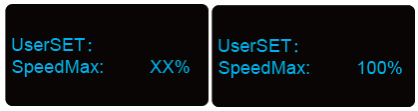
Information given as an indication only, and subject to possible modifications

PARAMETER SETTING MENU OF THE ACTUATOR

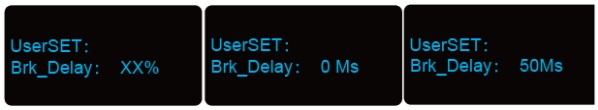
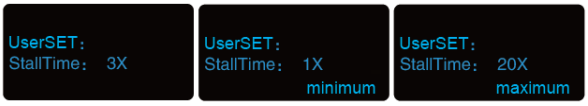
The following functions can have their parameters set from the menu accessible on the screen:

STEP	TITLE	FUNCTION AND VALUES
1	Standby screen	If the actuator did not receive any signal in the last 5 minutes, the screen switches to standby. Press any button for 5 s. Then reactivate the screen.
2	Enter the password	Press the "M" button for more than 5 s. Enter the code "333" (use the keys K2 and K3) Press again the button "M" 
3	Choice of language	English or Mandarin 
4	Choosing the control signal	Press "K3" to chose the control signal Possible signals: 4-20mA, 0-20mA, 2-10V, 0-10V Press "M" again to continue 
5	Choosing the direction of rotation of the actuator	Direct 4mA = valve closed / 20 mA = valve open Inverted 4 mA = valve closed / 20 mA = valve open 
6	Position by absence of any control signal	In the absence of a control signal, the valve can take 3 positions: ON, OFF or KEEP 
7	Dead band	This function is used to set the accuracy and the sensitivity of the control: the larger the band, the lower the accuracy; the narrower the band, the more oscillating the system can be. **Setting range:** 0.1 to 9.9% - **Setting by default**: 0.8% 

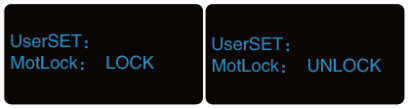
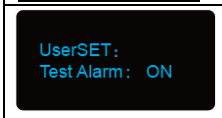
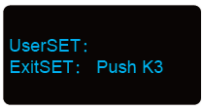
Information given as an indication only, and subject to possible modifications

8	Hysteresis adjustment	This parameter setting is a prerequisite for the next. YES = adjustment is possible NO = no adjustment is possible (value by default) 
9	Hysteresis value	If the previous parameter is “YES”, it is possible to set the hysteresis value between 0.1 and 9.9%. The value by default is 0.2%. Do not use the function if there is a play between the valve’s stem and the actuator’s square. 
10	Redefining the 4 mA position	Used to set another position than 0% for the 4 mA value. This function is useful for valves with an opening angle different from 90°. **Range**: -50% +80% - **Value by default** = 0.0% 
11	Redefining the 20 mA position	Used to set another position than 100% for the 20 mA value. This function is useful for valves with an opening angle different from 90°. **Range**: +81% +220% - **Value by default** = 100.0% 
12	Manual adjustment of the speed of rotation	This function is used for slowing down the motor. **Range**: 20-100% - Value by default = 100% 
13	Setting the maximum speed	This setting affects the available torque. Without a special need, do not change it. **Range**: 20-100% - Value by default = 100% 
14	Setting the minimum speed	This setting affects the available torque. Without a special need, do not change it. **Range**: 20-95% - Value by default = 75% 

SECTORIEL S.A.
45 rue du Ruisseau
38290 SAINT QUENTIN-FALLAVIER – FRANCE
Telephone: +33 4 74 94 90 70 - Fax: +33 4 74 94 13 95
www.sectoriel.com / Email: sectoriel@sectoriel.fr

15	Setting the speed for the stroke	This setting is used for setting a % of the actuator stroke during which it will slow down before reaching the setpoint value position. **Range**: 1-20% - Value by default = 10% 
16	Braking time	In order to increase the stability of the motor, the motor will slow down after a short time before reaching its setpoint value position. During current use, this function is not useful. **Range**: 0-50 ms – **Value by default** = 1 ms 
17	Modification of the output signal 4 mA	If a deviation is found on the 4mA output signal, this function is used to adjust it. If the number is increased, the current is higher. If the number is decreased, the current is lower. **Range**: 000_481_A – **Value by default** 191_A **NB**: always limit the lower value to 20 mA 
18	Modification of the 20mA output signal	If a deviation is found on the 20mA output signal, this function is used to adjust it. If the number is increased, the current is higher. If the number is decreased, the current is lower. **Range**: 191_1000_A – **Value by default** 909_A 
19	Response time	Used to set the response speed of the valve. The smaller the value, the less sensitive the control. The bigger the value, the more sensitive it is. Increase the value when the response speed is too low. **Setting range:** 1x20x – Value by default 3x 
20	Checking the feed signal	The actuator periodically tests its electrical power supply. A change of a value will change the interval between two tests. In current use, there is no need to change this parameter. 
21	Power supply position by default	This parameter setting is not available on this version (see version T-KT) **Value by default**: KEEP 

Information given as an indication only, and subject to possible modifications

22	Super-capacitor charge	This setting is not available on this version (see version T-KT) **Value by default**: 95% 
23	Actuator locking after the intervention of the super-capacitor	This parameter setting is not available on this version (see version T-KT) **Value by default**: UNLOCK 
24	Alarm test	This function is used to control whether a defect alarm is broadcast or not. It is especially used for factory testing **Value by default**: ON 
25	Exiting the menu	Press K3 to exit the menu The system will switch back in the automatic checking mode. 

TROUBLESHOOTING

Defect met	Cause of defect	Method of solving
Inactive actuator	Non-connected electrical grid.	Connect to the electrical grid.
	Wrong voltage.	Check the actuator's voltage.
	Motor overheating.	Check the torque on the valve.
	Faulty connection.	Check the connection to the terminal box.
	Damaged start capacitor.	Contact the supplier for repair.
No switch signal	Faulty connection.	Check the connections.
	Damaged microswitch	Change the microswitch
Valve that is not fully closed	Use the return signal from the actuator check.	Receiving a return signal does not mean that the actuator is fully closed, hence do not cut the power supply.
	The hysteresis increases due to wear or between the actuator and the valve's stem.	Readjust the limit cams. Contact the supplier for repair.
Presence of humidity or water in the actuator	Unsuitable cable cross-section being used.	Contact the supplier for repair.
	The cable connection is not leak-tight.	
	Worn sealing gaskets.	
	Loose cover screws.	Dry the internal parts and tighten the cover screws.

SECTORIEL S.A.
45 rue du Ruisseau
38290 SAINT QUENTIN-FALLAVIER – FRANCE
Telephone: +33 4 74 94 90 70 - Fax: +33 4 74 94 13 95
www.sectoriel.com / Email: sectoriel@sectoriel.fr

REGULATING ELECTRICAL ACTUATOR
+ RETURN BY SUPER-CAPACITOR TCR-02T-KT

FEATURES

The TCR-02T-KT electric actuator is intended for motorising ¼ turn valves with a torque of 15 Nm.
Double proportional control function 4-20mA + closing manoeuvre provided by a super-capacitor. With a compact construction and plastic housing, it is especially well suited for motorising small dimensions ball valves. The actuator has many advanced control functions which can be set from the screen. IP67 leak-tightness: to be used indoors and, possibly, outdoors under a shelter. Manual control with a key.

AVAILABLE MODELS

Supply voltages: 230V AC, 24V AC/DC.
Control: 4-20 mA

LIMITS OF USE

IP Code	IP 67
Ambient temperature	- 20°C / +60°C
Service factor	S4 - 50%

MECHANICAL FEATURES

Gear box	treated steel pinions
Torque	15 Nm
Angle of rotation	90° +/- 2°
Declutching	without
Override control	By key

Torque (Nm)	15	
Voltage	24V AC - DC	95-265V AC-DC
Adjustment signal	4-20 mA	
Feedback signal	4-20 mA	
Manoeuvring time (s)	15	15
ISO 5211:	F03/F05 - star 11	

ELECTRICAL FEATURES

Motor protection	Thermal switch
Limit switches	Without
Auxiliary switches	Without
Anti-condensation	integrated
Electrical connection	PE M10 + 1.5m cable

Voltage	24V AC - DC	95-265V AC-DC
Power (W)	36	36
Current (A)	1,5	0,035 - 0,09
Fuse protection (A)	5	1

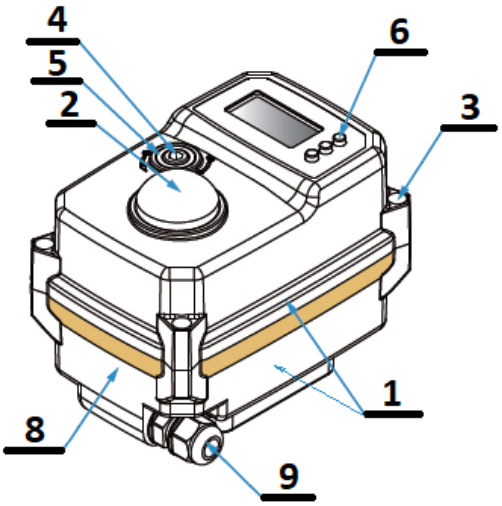
Information given as an indication only, and subject to possible modifications

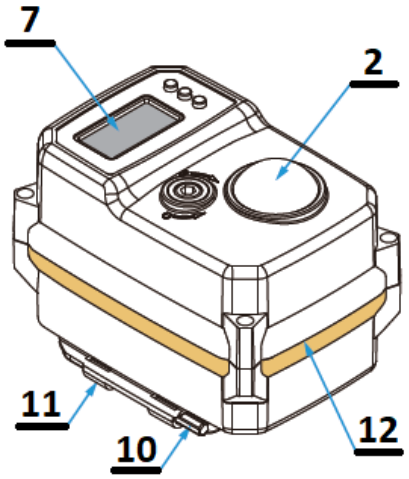
SECTORIEL S.A.
45 rue du Ruisseau
38290 SAINT QUENTIN-FALLAVIER – FRANCE
Telephone: +33 4 74 94 90 70 - Fax: +33 4 74 94 13 95
www.sectoriel.com / Email: sectoriel@sectoriel.fr

REGULATING ELECTRICAL ACTUATOR
+ RETURN BY SUPER-CAPACITOR TCR-02T-KT

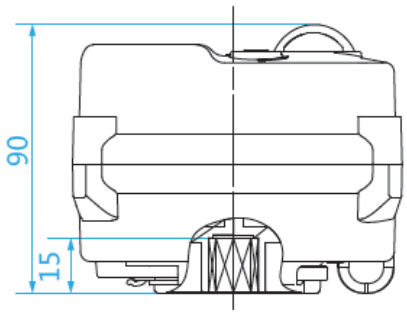
CONSTRUCTION

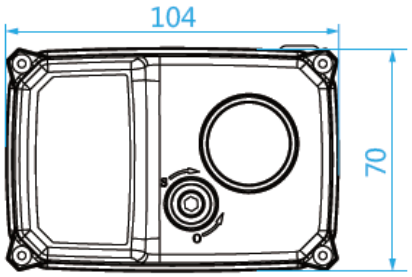
TCR-02T-KT32					
No.	**Name**	**Material**	**No.**	**Name**	**Material**
1	Casing + lid	Plastic (ABS)	**7**	1.3" LCD display	OLED
2	Position indicator	Polycarbonate plastic	**8**	Rating plate	PVC
3	Screw x 4	Ansi 304	**9**	Packing gland	Nylon
4	Backup control stem	Ansi 304	**10**	Hex key	Steel
5	Gasket	NBR	**11**	Key support	Plastic (ABS)
6	Adjustment button	Rubber	**12**	Cover gasket	NBR
Weight (kg): 0.620					

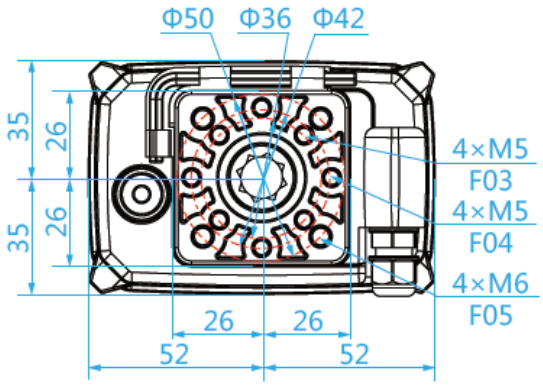




DIMENSIONS (mm)







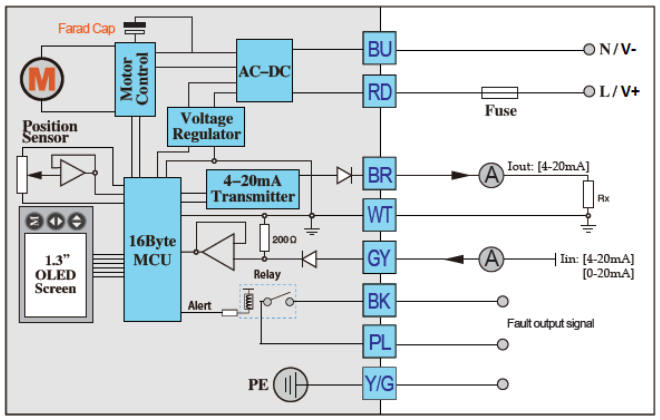
Information given as an indication only, and subject to possible modifications

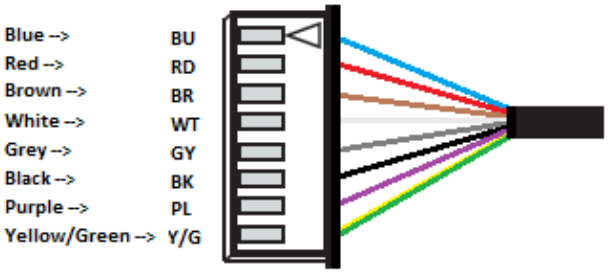
SECTORIEL S.A.
45 rue du Ruisseau
38290 SAINT QUENTIN-FALLAVIER – FRANCE
Telephone: +33 4 74 94 90 70 - Fax: +33 4 74 94 13 95
www.sectoriel.com / Email: sectoriel@sectoriel.fr

REGULATING ELECTRICAL ACTUATOR
+ RETURN BY SUPER-CAPACITOR TCR-02T-KT

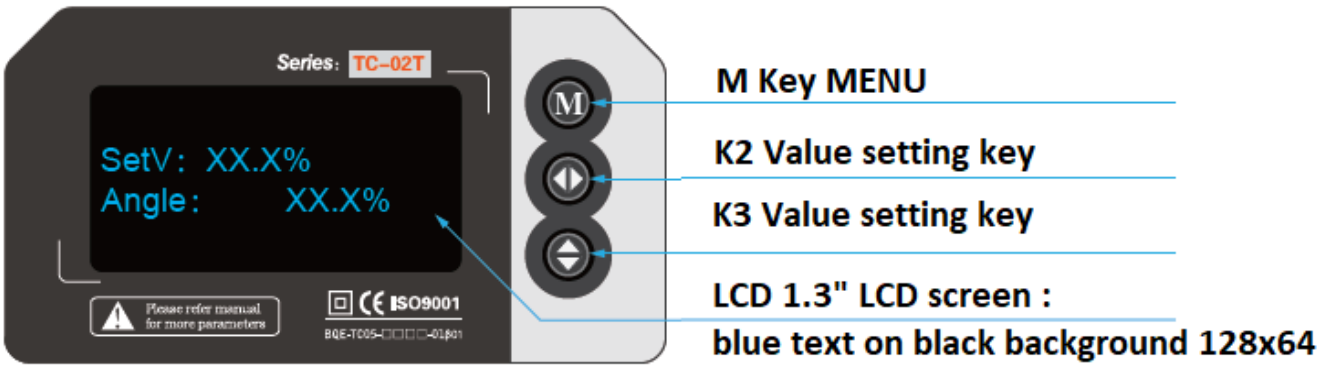
WIRING DIAGRAM

BU	Power supply neutral (Blue)
RD	Power supply phase (Red)
BR	4-20 mA signal output + (Brown)
WT	4-20 mA signal output - (White)
GY	4-20 mA signal input (Grey)
BK	Input alarm signal (Black)
PL	Output alarm signal (Purple)
Y/G	Earth (Yellow / Green)





DESCRIPTION OF THE 1.3'' LCD SCREEN



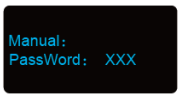
The control screen displays the % of opening and the actuator parameter setting.

1.3'' LCD angle without any blind spot, strong luminosity, automatic switching to the economy saving mode at the end of 5 minutes.

SECTORIEL S.A.
45 rue du Ruisseau
38290 SAINT QUENTIN-FALLAVIER – FRANCE
Telephone: +33 4 74 94 90 70 - Fax: +33 4 74 94 13 95
www.sectoriel.com / Email: sectoriel@sectoriel.fr

REGULATING ELECTRICAL ACTUATOR
+ RETURN BY SUPER-CAPACITOR TCR-02T-KT

LOCAL OPERATION

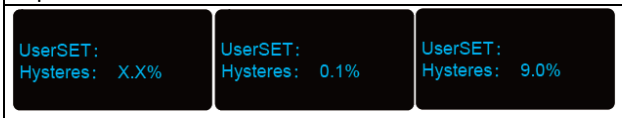
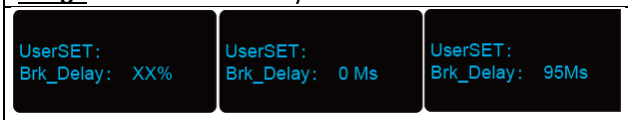
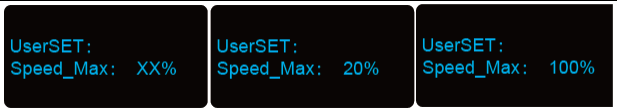
1	Press the K3 button for 5 seconds, until “K3” flashes at the top right of the screen.	
2		Enter the password “111”
3	Press the K2 button to manoeuvre clockwise. The screen displays the % of opening. Release when the desired position is reached.	
		
	Press the K3 button to manoeuvre anti-clockwise. The screen displays the % of opening. Release when the desired position is reached.	

ACTUATOR SETTINGS

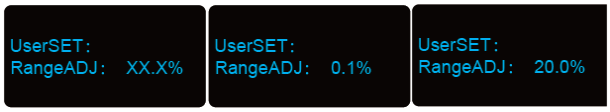
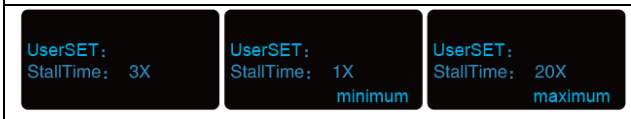
The following functions can have their parameters set from the menu accessible on the screen:

STEP	TITLE	FUNCTION AND VALUES
1	Entering the menu	Press the “M” button for more than 5 s.
2	Enter the password	Press the “M” button for more than 5 s. Enter the code “333” (use the keys K2 and K3) Press again the button “M”
		
3	Choice of language	English or Mandarin
		
4	Choosing the direction of rotation of the actuator	**Direct**: 4mA = valve closed / 20 mA = valve open
		
		Inverted: 4 mA = valve closed / 20 mA = valve open
5	Position by absence of any control signal	In the absence of a control signal, the valve can take 3 positions: ON, OFF or KEEP
		

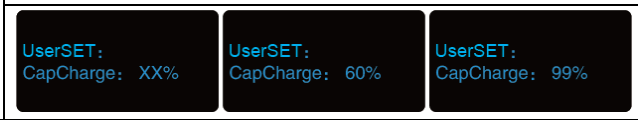
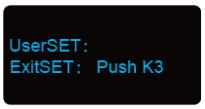
Information given as an indication only, and subject to possible modifications

6	Dead band	This function is used to set the accuracy and the sensitivity of the control: the larger the band, the lower the accuracy; the narrower the band, the more oscillating the system can be. **Setting range:** 0.1 to 9.9% - **Setting by default**: 0.8% 
7	Hysteresis adjustment	This parameter setting is a prerequisite for the next. YES = adjustment is possible NO = no adjustment is possible (value by default) 
8	Hysteresis value	If the previous parameter is "YES", it is possible to set the hysteresis value between 0.1 and 9.9%. The value by default is 0.2%. Do not use the function if there is a play between the valve's stem and the actuator's square. 
9	Manual adjustment of the speed of rotation	This function is used for slowing down the motor. **Range**: 20-100% - Value by default = 100% 
10	Braking time	In order to increase the stability of the motor, the motor will slow down after a short time before reaching its setpoint value position. During current use, this function is not useful. **Range**: 0-95 ms – Value by default = 1 ms 
11	Setting the maximum speed	This setting affects the available torque. Without a special need, do not change it. **Range**: 20-100% - Value by default = 100% 
12	Setting the minimum speed	This setting affects the available torque. Without a special need, do not change it. **Range**: 20-95% - Value by default = 75% 

SECTORIEL S.A.
45 rue du Ruisseau
38290 SAINT QUENTIN-FALLAVIER – FRANCE
Telephone: +33 4 74 94 90 70 - Fax: +33 4 74 94 13 95
www.sectoriel.com / Email: sectoriel@sectoriel.fr

13	Setting the speed for the stroke	This setting is used for setting a % of the actuator stroke during which it will slow down before reaching the setpoint value position. **Range**: 0.1-20% - Value by default = 10% 
14	Redefining the 4 mA position	Used to set another position than 0% for the 4 mA value. This function is useful for valves with an opening angle different from 90°. **Range**: -50% +80% - Value by default = 0.0% 
15	Redefining the 20 mA position	Used to set another position than 100% for the 20 mA value. This function is useful for valves with an opening angle different from 90°. **Range**: 20% +220% - Value by default = 100.0% 
16	Modification of the 4 mA output signal	If a deviation is found on the 4mA output signal, this function is used to adjust it. If the number is increased, the current is higher. If the number is decreased, the current is lower. **Range**: 000_481_A – Value by default 191_A **NB**: always limit the lower value to 20 mA 
17	Modification of the 20mA output signal	If a deviation is found on the 20mA output signal, this function is used to adjust it. If the number is increased, the current is higher. If the number is decreased, the current is lower. **Range**: 191_1000_A – Value by default 909_A 
18	Response time	Used to set the response speed of the valve. The smaller the value, the less sensitive the control. The bigger the value, the more sensitive it is. Increase the value when the response speed is too low. **Setting range:** 1x20x – Value by default 3x 

SECTORIEL S.A.
45 rue du Ruisseau
38290 SAINT QUENTIN-FALLAVIER – FRANCE
Telephone: +33 4 74 94 90 70 - Fax: +33 4 74 94 13 95
www.sectoriel.com / Email: sectoriel@sectoriel.fr

19	Power supply position by default	Setting the position of the valve in the event of a power cut. This manoeuvre will be carried out if the capacitor is sufficiently charged. **Possible values**: **KEEP**: unchanged position of the valve **ON**: valve opening **OFF**: valve closing **Value by default**: OFF 
20	Capacitor charge	Setting the % of charge when the feed current is higher than the set value. **Setting range:** 60-99% **Value by default**: 95% Do not set below 80%, the charge will be insufficient and would set off the motor alarm 
21	Exiting the menu	Press K3 to exit the menu The system will switch back in the automatic checking mode. 

TROUBLESHOOTING

Defect met	Cause of defect	Method of solving
Inactive actuator	Non-connected electrical grid.	Connect to the electrical grid.
	Wrong voltage.	Check the actuator's voltage.
	Motor overheating.	Check the torque on the valve.
	Faulty connection.	Check the connection to the terminal box.
	Damaged start capacitor.	Contact the supplier for repair.
No switch signal	Faulty connection.	Check the connections.
	Damaged microswitch	Change the microswitch
Valve that is not fully closed	Use the return signal from the actuator check.	Receiving a return signal does not mean that the actuator is fully closed, hence do not cut the power supply.
	The hysteresis increases due to wear or between the actuator and the valve's stem.	Readjust the limit cams. Contact the supplier for repair.
Presence of humidity or water in the actuator	Unsuitable cable cross-section being used.	Contact the supplier for repair.
	The cable connection is not leak-tight.	
	Worn sealing gaskets.	
	Loose cover screws.	Dry the internal parts and tighten the cover screws.

SECTORIEL S.A.
45 rue du Ruisseau
38290 SAINT QUENTIN-FALLAVIER – FRANCE
Telephone: +33 4 74 94 90 70 - Fax: +33 4 74 94 13 95
www.sectoriel.com / Email: sectoriel@sectoriel.fr

REGULATING ELECTRICAL ACTUATOR
+ RETURN BY SUPER-CAPACITOR TCR-05-11-T-KT

FEATURES

TCR-T-KT electrical actuators are intended for motorising 1/4 turn valves with a torque of 50 or 90 Nm.
Double proportional control function 4-20mA + closing manoeuvre provided by a super-capacitor. With a compact construction and plastic housing, they are especially well suited for motorising small size ball valves. The actuator has many advanced control functions which can be set from the screen. IP67 leak-tightness: to be used indoors and, possibly, outdoors under a shelter. Manual control with a key.

AVAILABLE MODELS

Supply voltages: 230V AC, 24V AC/DC.
Control: 4-20 mA, 0-20 mA, 2-10V, 0-10V.

LIMITS OF USE

IP Code	IP 67
Ambient temperature	- 20°C / +60°C
Service factor	S4 - 50%

MECHANICAL FEATURES

Gear box	treated steel pinions
Torques	50 - 90 Nm
Angle of rotation	90° +/- 2°
Declutching	without
Override control	By key

Actuator	**TCR 05T-KT32**		**TCR 11T-KT32**	
Torques (Nm)	50		90	
Voltage	24V AC - DC	95-265V AC-DC	24V AC - DC	95-265V AC-DC
Adjustment signal	4-20 mA, 0-20 mA, 2-10V, 0-10V			
Feedback signal	4-20 mA, 0-20 mA, 2-10V, 0-10V			
Manoeuvring time (s)	12	12	10	10
ISO 5211:	F05/F07 - star 14		F05/F07 - star 17	

ELECTRICAL FEATURES

Actuator	**TCR 05T-KT32**	**TCR 11T-KT32**
Motor protection	Thermal switch	
Limit switches	Without	
Auxiliary switches	Without	
Anti-condensation	integrated	
Electrical connection	PE M20 + 1.5m cable	2 x PE M14 + 1.5 cable

Actuator	**TCR 05T-KT32**		**TCR 11T-KT32**	
Voltage	24V AC - DC	95-265V AC-DC	24V AC - DC	95-265V AC-DC
Power (W)	40	40	100	100
Current (A)	1,8	0,18	2,5	0,3 - 0,6
Fuse protection (A)	10	2	5	2

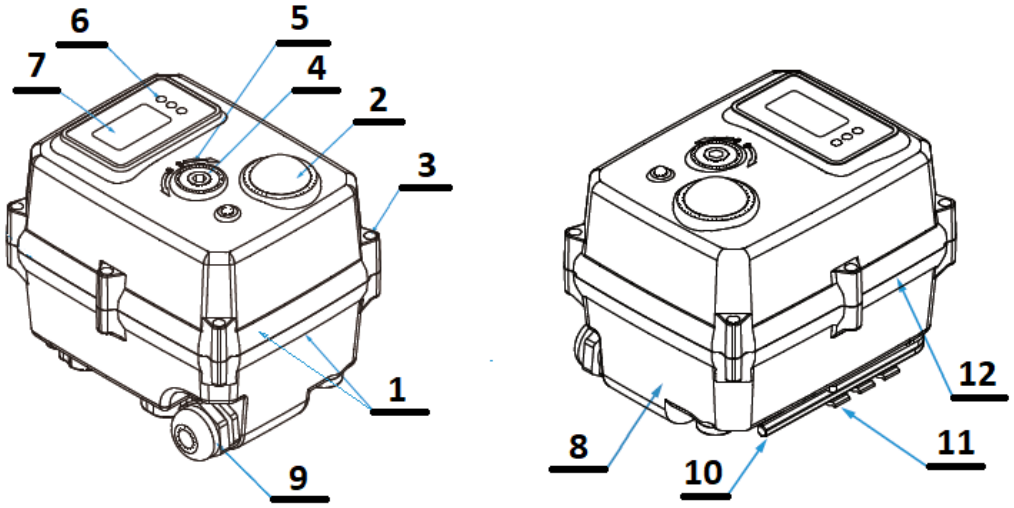
Information given as an indication only, and subject to possible modifications

SECTORIEL S.A.
45 rue du Ruisseau
38290 SAINT QUENTIN-FALLAVIER – FRANCE
Telephone: +33 4 74 94 90 70 - Fax: +33 4 74 94 13 95
www.sectoriel.com / Email: sectoriel@sectoriel.fr

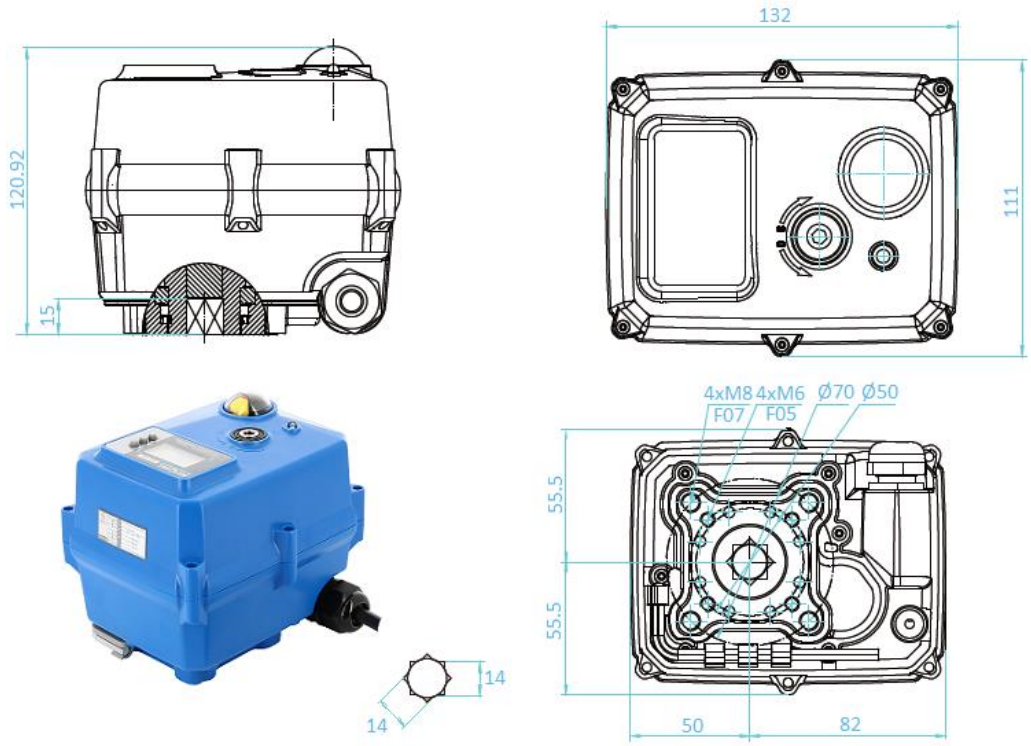
REGULATING ELECTRICAL ACTUATOR
+ RETURN BY SUPER-CAPACITOR TCR-05-11-T-KT

CONSTRUCTION (TCR-05T-KT32)

TCR-05T-KT32					
No.	**Name**	**Material**	**No.**	**Name**	**Material**
1	Casing + lid	Plastic (ABS)	**7**	1.3" LCD display	OLED
2	Position indicator	Polycarbonate plastic	**8**	Rating plate	PVC
3	Screw x 6	Ansi 304	**9**	Packing gland	Nylon
4	Backup control stem	Ansi 304	**10**	Hex key	Steel
5	Gasket	NBR	**11**	Key support	Plastic (ABS)
6	Adjustment button	Rubber	**12**	Cover gasket	NBR
Weight (kg): 1.800					



DIMENSIONS (mm)

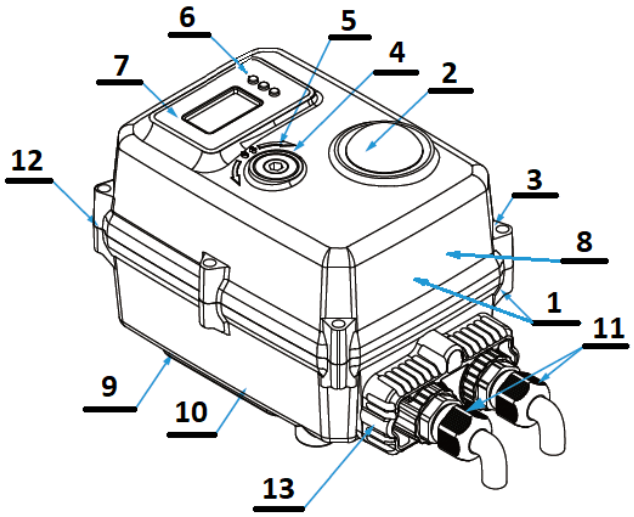


Information given as an indication only, and subject to possible modifications

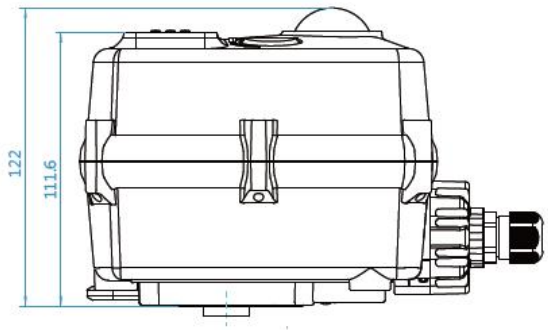
REGULATING ELECTRICAL ACTUATOR
+ RETURN BY SUPER-CAPACITOR TCR-05-11-T-KT

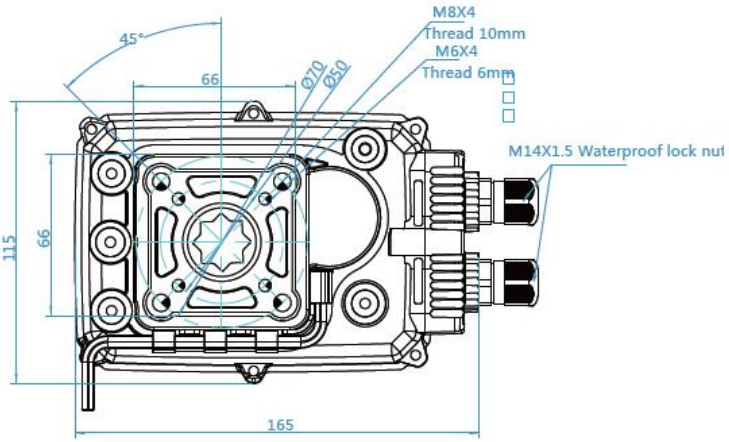
CONSTRUCTION (TCR-11T-KT32)

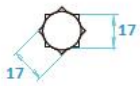
TCR-11T-KT32					
No.	**Name**	**Material**	**No.**	**Name**	**Material**
1	Casing + lid	Plastic (ABS)	**7**	1.3" LCD display	OLED
2	Position indicator	Polycarbonate plastic	**8**	Rating plate	PVC
3	Screw x 6	Ansi 304	**9**	Key support	Plastic (ABS)
4	Backup control stem	Ansi 304	**10**	Hex key	Steel
5	Gasket	NBR	**11**	X 2Packing gland	Nylon
6	Adjustment button	Rubber	**12**	Cover gasket	NBR
Weight (kg): 2.200			**13**	Cable gland unit	Plastic (ABS)



DIMENSIONS (mm)





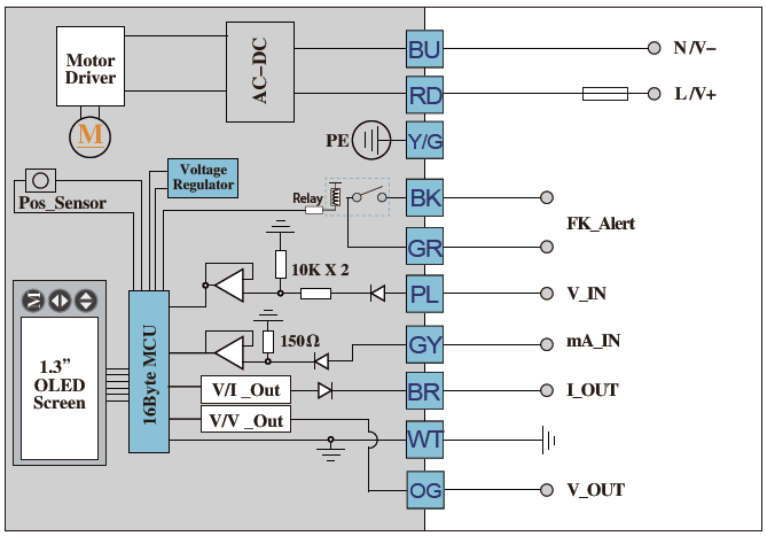


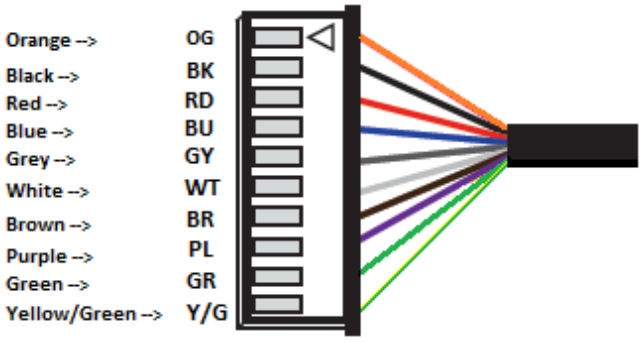
Information given as an indication only, and subject to possible modifications

REGULATING ELECTRICAL ACTUATOR
+ RETURN BY SUPER-CAPACITOR TCR-05-11-T-KT

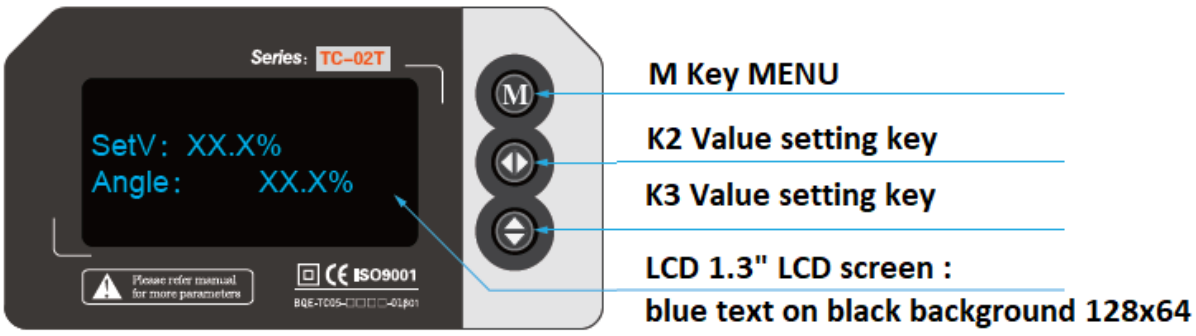
WIRING DIAGRAM

BU	Neutral (Blue)
RD	Closing control (Red)
Y/G	Earth (Yellow / Green)
BK	Alarm return information (Black)
GR	Alarm return information (Green)
PL	0-10V and 2-10V control signal (Purple)
GY	4-20mA and 0-20mA control signal (Grey)
BR	4-20mA and 0-20mA feedback (Brown)
WT	Common control/feedback signals (White)
OG	0-10V and 2-10V feedback (Orange)





DESCRIPTION OF THE 1.3'' LCD SCREEN

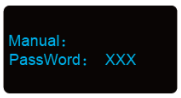


1.3'' LCD angle without any blind spot, strong luminosity, automatic switching to the economy saving mode at the end of 5 minutes. The control screen displays the set value and the % of opening of the valve.

Information given as an indication only, and subject to possible modifications

REGULATING ELECTRICAL ACTUATOR
+ RETURN BY SUPER-CAPACITOR TCR-05-11-T-KT

CONTROL IN LOCAL MODE

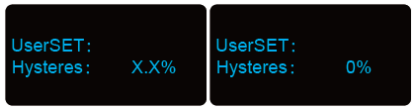
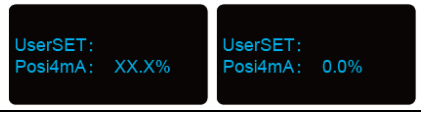
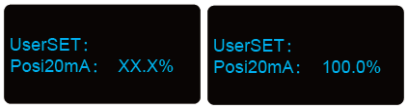
1	Press the K3 button for 5 seconds, until “K3” flashes at the top right of the screen.	
2		Enter the password “111”
3	Press the K2 button to manoeuvre clockwise. The screen displays the % of opening. Release when the desired position is reached.	
		
	Press the K3 button to manoeuvre anti-clockwise. The screen displays the % of opening. Release when the desired position is reached.	

PARAMETER SETTING MENU OF THE ACTUATOR

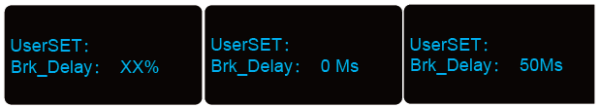
The following functions can have their parameters set from the menu accessible on the screen:

STEP	TITLE	FUNCTION AND VALUES
1	Standby screen	If the actuator did not receive any signal in the last 5 minutes, the screen switches to standby. Press any button for 5 s. Then reactivate the screen.
2	Enter the password	Press the “M” button for more than 5 s. Enter the code “333” (use the keys K2 and K3) Press again the button “M”
		
3	Choice of language	English or Mandarin
		
4	Choosing the control signal	Press “K3” to chose the control signal Possible signals: 4-20mA, 0-20mA, 2-10V, 0-10V Press “M” again to continue
		

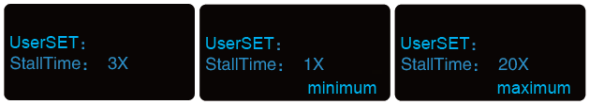
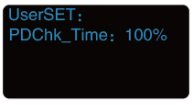
Information given as an indication only, and subject to possible modifications

5	Choosing the direction of rotation of the actuator	Direct 4mA = valve closed / 20 mA = valve open Inverted 4 mA = valve closed / 20 mA = valve open 
6	Position by absence of any control signal	In the absence of a control signal, the valve can take 3 positions: ON, OFF or KEEP 
7	Dead band	This function is used to set the accuracy and the sensitivity of the control: the larger the band, the lower the accuracy; the narrower the band, the more oscillating the system can be. **Setting range:** 0.1 to 9.9% - **Setting by default**: 0.8% 
8	Hysteresis adjustment	This parameter setting is a prerequisite for the next. YES = adjustment is possible NO = no adjustment is possible (value by default) 
9	Hysteresis value	If the previous parameter is “YES”, it is possible to set the hysteresis value between 0.1 and 9.9%. The value by default is 0.2%. Do not use the function if there is a play between the valve’s stem and the actuator’s square. 
10	Redefining the 4 mA position	Used to set another position than 0% for the 4 mA value. This function is useful for valves with an opening angle different from 90°. **Range**: -50% +80% - **Value by default** = 0.0% 
11	Redefining the 20 mA position	Used to set another position than 100% for the 20 mA value. This function is useful for valves with an opening angle different from 90°. **Range**: +81% +220% - **Value by default** = 100.0% 

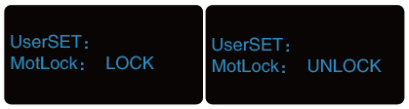
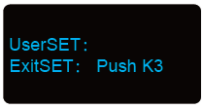
Information given as an indication only, and subject to possible modifications

12	Manual adjustment of the speed of rotation	This function is used for slowing down the motor. **Range**: 20-100% - Value by default = 100% 
13	Setting the maximum speed	This setting affects the available torque. Without a special need, do not change it. **Range**: 20-100% - Value by default = 100% 
14	Setting the minimum speed	This setting affects the available torque. Without a special need, do not change it. **Range**: 20-95% - Value by default = 75% 
15	Setting the speed for the stroke	This setting is used for setting a % of the actuator stroke during which it will slow down before reaching the setpoint value position. **Range**: 1-20% - Value by default = 10% 
16	Braking time	In order to increase the stability of the motor, the motor will slow down after a short time before reaching its setpoint value position. During current use, this function is not useful. **Range**: 0-50 ms – **Value by default** = 1 ms 
17	Modification of the input signal 4 mA	The function is used to modify the 4mA input signal. If the value of the parameter is increased, the signal will be increased. If the value is decreased, the signal will be decreased. It is not recommended to change the factory settings. 
18	Modification of the 20mA input signal	The function is used to modify the 20mA input signal. If the value of the parameter is increased, the signal will be increased. If the value is decreased, the signal will be decreased. It is not recommended to change the factory settings. 

SECTORIEL S.A.
45 rue du Ruisseau
38290 SAINT QUENTIN-FALLAVIER – FRANCE
Telephone: +33 4 74 94 90 70 - Fax: +33 4 74 94 13 95
www.sectoriel.com / Email: sectoriel@sectoriel.fr

19	Modification of the output signal 4 mA	If a deviation is found on the 4mA output signal, this function is used to adjust it. If the number is increased, the current is higher. If the number is decreased, the current is lower. **Range**: 000_481_A – Value by default 191_A **NB**: always limit the lower value to 20 mA 
20	Modification of the 20mA output signal	If a deviation is found on the 20mA output signal, this function is used to adjust it. If the number is increased, the current is higher. If the number is decreased, the current is lower. **Range**: 191_1000_A – Value by default 909_A 
21	Power supply position by default	Setting the position of the valve in the event of a power cut. This manoeuvre will be carried out if the capacitor is sufficiently charged. **Possible values**: **KEEP**: unchanged position of the valve **ON**: opening of the valve **OFF**: valve closing **Value by default**: OFF 
22	Response time	Used to set the response speed of the valve. The smaller the value, the less sensitive the control. The bigger the value, the more sensitive it is. Increase the value when the response speed is too low. **Setting range:** 1x20x – **Value by default** 3x 
23	Checking the feed signal	The actuator periodically tests its electrical power supply. A change of a value will change the interval between two tests. In current use, there is no need to change this parameter. 

SECTORIEL S.A.
45 rue du Ruisseau
38290 SAINT QUENTIN-FALLAVIER – FRANCE
Telephone: +33 4 74 94 90 70 - Fax: +33 4 74 94 13 95
www.sectoriel.com / Email: sectoriel@sectoriel.fr

24	Super-capacitor charge	This parameter is used to set the % of charge on the super-capacitor from which on the actuator switches to the automatic mode. **Setting range:** 60-99% **Value by default**: 95% Do not set below 80%, the charge will be insufficient and would set off the motor alarm 
25	Actuator locking after the intervention of the super-capacitor	Used to seal off the valve if an emergency manoeuvre occurred. **Value by default**: UNLOCK 
26	Alarm test	This function is used to control whether a defect alarm is broadcast or not. It is especially used for factory testing **Value by default**: ON 
27	Exiting the menu	Press K3 to exit the menu The system will switch back in the automatic checking mode. 

TROUBLESHOOTING

Defect met	Cause of defect	Method of solving
Inactive actuator	Non-connected electrical grid.	Connect to the electrical grid.
	Wrong voltage.	Check the actuator's voltage.
	Motor overheating.	Check the torque on the valve.
	Faulty connection.	Check the connection to the terminal box.
	Damaged start capacitor.	Contact the supplier for repair.
No switch signal	Faulty connection.	Check the connections.
	Damaged microswitch	Change the microswitch
Valve that is not fully closed	Use the return signal from the actuator check.	Receiving a return signal does not mean that the actuator is fully closed, hence do not cut the power supply.
	The hysteresis increases due to wear or between the actuator and the valve's stem.	Readjust the limit cams. Contact the supplier for repair.
Presence of humidity or water in the actuator	Unsuitable cable cross-section being used.	Contact the supplier for repair.
	The cable connection is not leak-tight.	
	Worn sealing gaskets.	
	Loose cover screws.	Dry the internal parts and tighten the cover screws.

SECTORIEL S.A.
45 rue du Ruisseau
38290 SAINT QUENTIN-FALLAVIER – FRANCE
Telephone: +33 4 74 94 90 70 - Fax: +33 4 74 94 13 95
www.sectoriel.com / Email: sectoriel@sectoriel.fr