

715 XS VALVE WITH TCR ELECTRICAL ACTUATOR

FEATURES

The 715XS+TCR 2-way stainless steel ball valve is designed for the automatic shut-off of pipes with non-loaded industrial fluids. It is a full-bore valve with an antistatic device. It is EC-approved. The ISO 5211 mounting pad enables the TCR actuator to be directly assembled. The latter is suitable for indoor or outdoor (under shelter) industrial use.

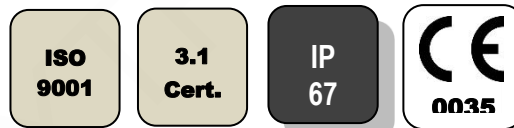
AVAILABLE MODELS

1.4408 stainless steel body.

1/2" to 3" diameters.

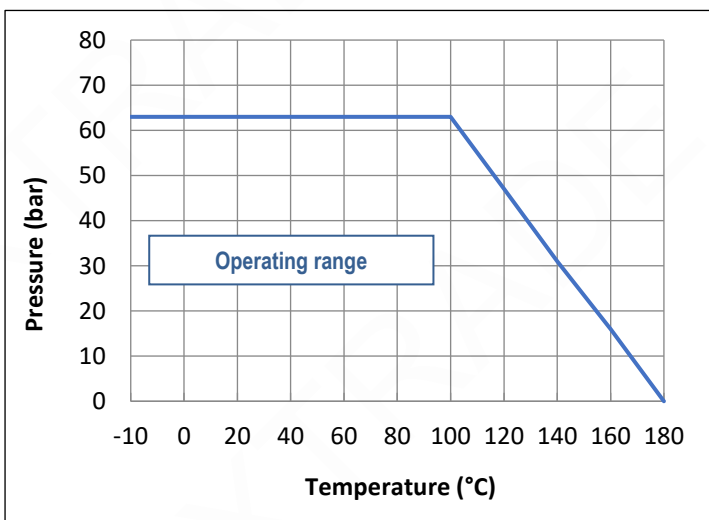
G thread connections

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



LIMITS OF USE

Fluid pressure: PS	63 bar (20°C)
Fluid temperature: WT	- 10°C / +180°C
Ambient temperature	- 20°C / + 60°C
Service factor	S4 – 50%



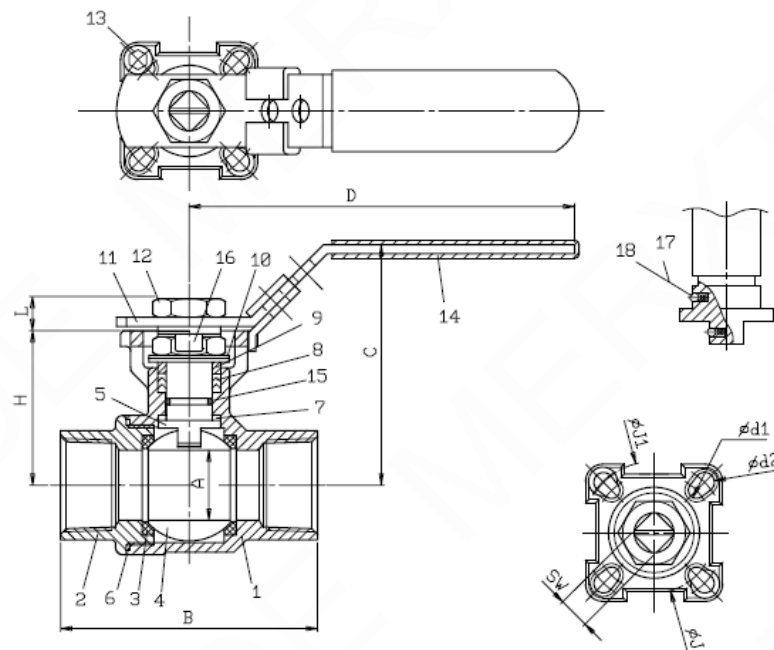
DIRECTIVES AND MANUFACTURING STANDARDS

OBJECT	Standard	ON	OBJECT	Standard
Pressure Equipment Directive 2014/68/EC	1/2" to 1": not subject		Final test	NKS 12266
	1"1/4 to 3" : category III	TÜV 0035	Material certificate	NKS 10204
Size	EN 12516-1		Motorisation connection	ISO 5211:
Steel grades	EN 1503-1			

715 XS VALVE WITH TCR ELECTRICAL ACTUATOR

CONSTRUCTION

No.	Name	Material	No.	Name	Material
1	Body	1.4408 SS	11	Lever	304 SS
2	Lateral end	1.4408 SS	12	Nut	304 SS
4	Seats	PTFE + +15% GF	13	Stop	304 SS
5	Stem	316 SS	14	Liner	PVC
6	Body gasket	PTFE	15	O-ring	FKM
7	Washer	PTFE	16	Slide	304 SS
8	Cable gland gasket	PTFE	17	Antistatic device	316 SS
9	Washer	304 SS	18	Spring	316 SS
10	Belleville washer	301 SS			



DIMENSIONS (mm)

DN	A	B	C	D	H	L	J	J1	d1	d2	SW
1/2"	15	55	70.9	110	42.3	8	42	50	6	7	9
3/4"	20	76	73.4	110	44.9	8	42	50	6	7	9
1"	24.5	83	84.1	135	54	10	42	50	6	7	11
1" 1/4	32	91	89.3	165	59.2	10	50	70	7	9	11
1" 1/2	38	103	109.5	165	71.3	10	50	70	7	9	11
2"	50	120	118.9	165	82.9	14.8	50	70	7	9	14
2" 1/2	65	155	155	300	107	17.1	70	102	9	11	17
3"	80	182	165	335	117	17.1	70	102	9	11	17

715 XS VALVE WITH TCR ELECTRICAL ACTUATOR

TCR ELECTRICAL MOTORISATION

The TCR motorisation proposed as standard comprises:

- IP67 plastic 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 $\Delta P=10$ bar max.

The actuator's assembly is direct.

DN	Actuator	Power 230V AC / 24V AC-DC	Time 230V AC	Time 24 V AC-DC	Standard equipment of the actuator
1/4"	TCR-02N	15	10s	10s	2 adjustable limit switches 2 dry auxiliary contacts Thermal protection of the motor 2-3W anti-condensation resistance Stand-by manual control with key 3D Position visual indicator Electrical connection: TRC02: 1 x PE M10 + 1.5m cable TCR05: 1 x PE M20 + 1.5m cable TCR11: 2 x PE M14 + 1.5 m cable
3/8"	TCR-02N	15	10s	10s	
1/2"	TCR-02N	15	10s	10s	
3/4"	TCR-02N	15	10s	10s	
1"	TCR-02N	15	10s	10s	
1" 1/4	TCR-02N	15	10s	10s	
1" 1/2	TCR-05N	25	12s	12s	
2"	TCR-05N	25	12s	12s	
2" 1/2	TCR-05N	25	12s	12s	
3"	TCR-11N	100	10s	10s	

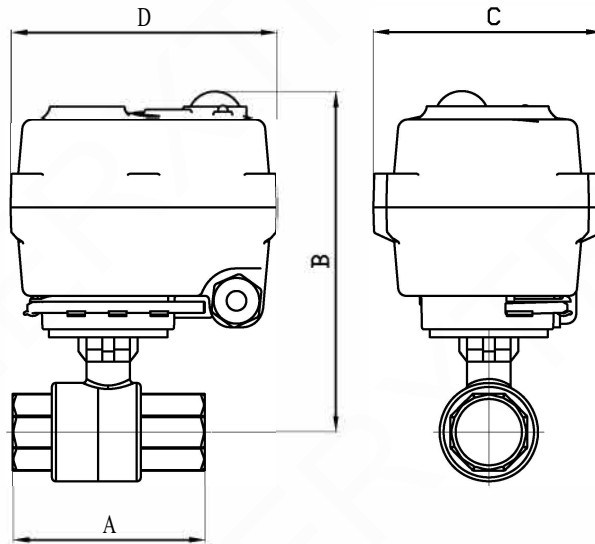
For any other operating conditions, please contact us.

* indicative time for actuator running empty

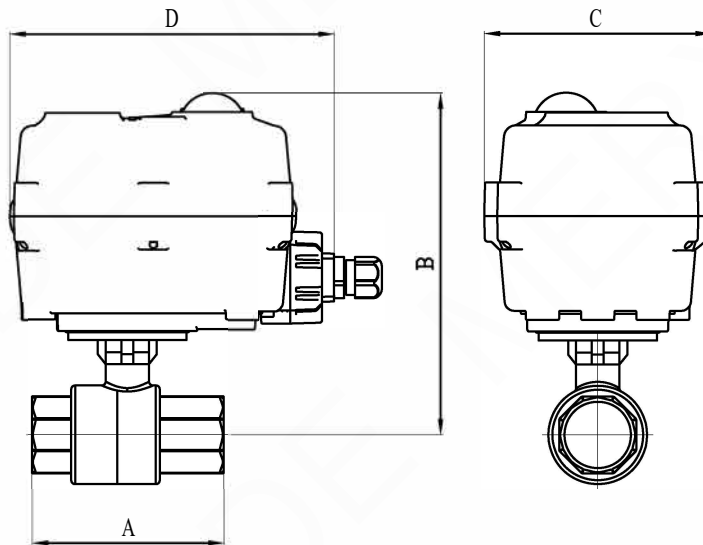
MOTORISATION OPTIONS

There are many options, so please contact our sales service for more information on these:

1	100mm high height adjustment for installing thermal insulation
2	Actuator dimensioned for an upstream / downstream pressure difference ΔP greater than 10 bar
3	NF actuator – return via condenser – TCR-KT32
4	High-speed actuator - TRC-NH
5	Smart actuator with manoeuvring time adjustment - TCR-C
6	Control actuator – TCR-T
7	NF control actuator – return via condenser – TCR-T-KT32
8	Field bus actuator - TCR-B
9	Actuator with in-built timer – TCR-D
10	Wireless actuator – TCR-R



TCR-02-05



TCR-11

DN	1/2'	3/4'	1	1 1/4	1 1/2	2	2 1/2	3
SERVO	TCR02	TCR02	TCR02	TCR02	TCR05	TCR05	TCR11	TCR11
A	57	71	83	91	104	123	155	182
B	132,3	134,8	144	149,2	192,2	203,8	229	239,3
C	70	70	70	70	111	111	115	115
D	104	104	104	104	132	132	165	165
KG	1.1	1.2	1.55	2.1	3.5	5.3	9.9	13

TCR-N ELECTRICAL ACTUATOR

FEATURES

The TCR-N electric actuators are intended for motorising ¼ turn valves with a torque of 15, 20, 50 or 110 Nm. With a compact construction and plastic housing, they are especially well suited for motorising small size ball valves. Several variants offer advanced functions. IP67 leak-tightness: to be used indoors and, possibly, outdoors under a shelter. Possible installation in parallel. Manual control with a key.

AVAILABLE MODELS

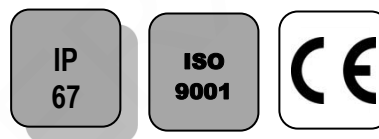
Supply voltages: 230V AC, 24V AC/DC, 12V DC.

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	15 - 20 - 50 - 110 Nm
Angle of rotation	90° +/- 2°
Declutching	without
Override control	By key



Actuator	TCR 02N			TCR 05N			TCR 11N		
	Torques (Nm)	15	20	20	50			110	
Voltage	12V DC	24V AC-DC	95-265V AC-DC	12VDC	24V AC-DC	95-265V AC-DC	12V DC	24V AC-DC	95-265V AC-DC
Manoeuvring time (s)	15	10	10	12	12	12	10	10	10
ISO 5211:	F03/F04/F05 - star 11			F05/F07 - star 14			F05/F07 - star 17		

ELECTRICAL FEATURES

Actuator	TCR 02N	TCR 05N	TCR 11N
Motor protection	Thermal switch		
Limit switches	2 adjustable switches		
Auxiliary switches	2 adjustable dry switches		
Anti-condensation	integrated		
Electrical connection	PE M10 + 1.5m cable	PE M20 + 1.5m cable	2 x PE M14

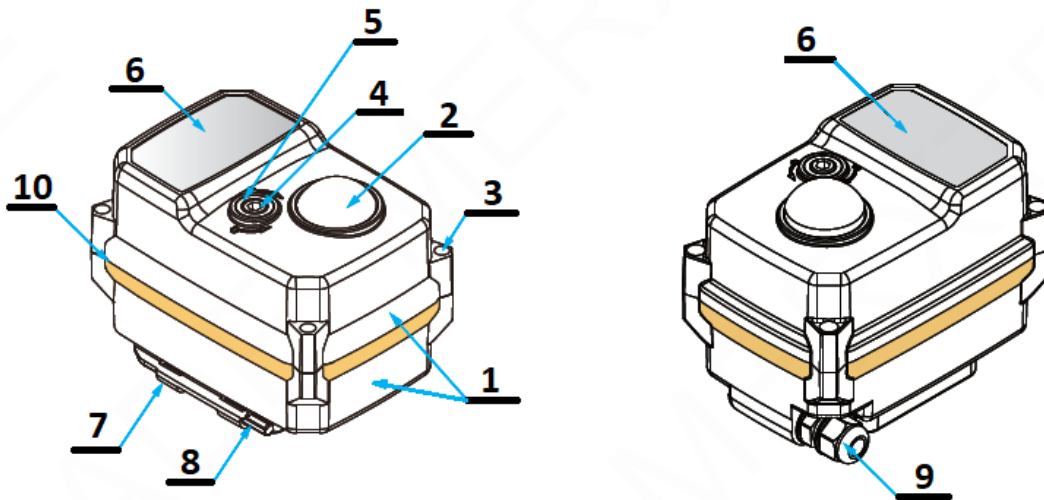
Actuator	TCR 02N			TCR 05N			TCR 11N		
Voltage	12V DC	24V AC-DC	95-265V AC-DC	12V DC	24V AC-DC	95-265V AC-DC	12V DC	24V AC-DC	95-265V AC-DC
Power (W)	15	15	15	25	25	25	100	100	100
Current (A)	1,5	1,5	0,09	1,67		0,18 - 0,37	2,5		0,3 - 0,6
Fuse Protection (A)	5	5	1	8		1 - 2	5		2 - 3

TCR-N ELECTRICAL ACTUATOR

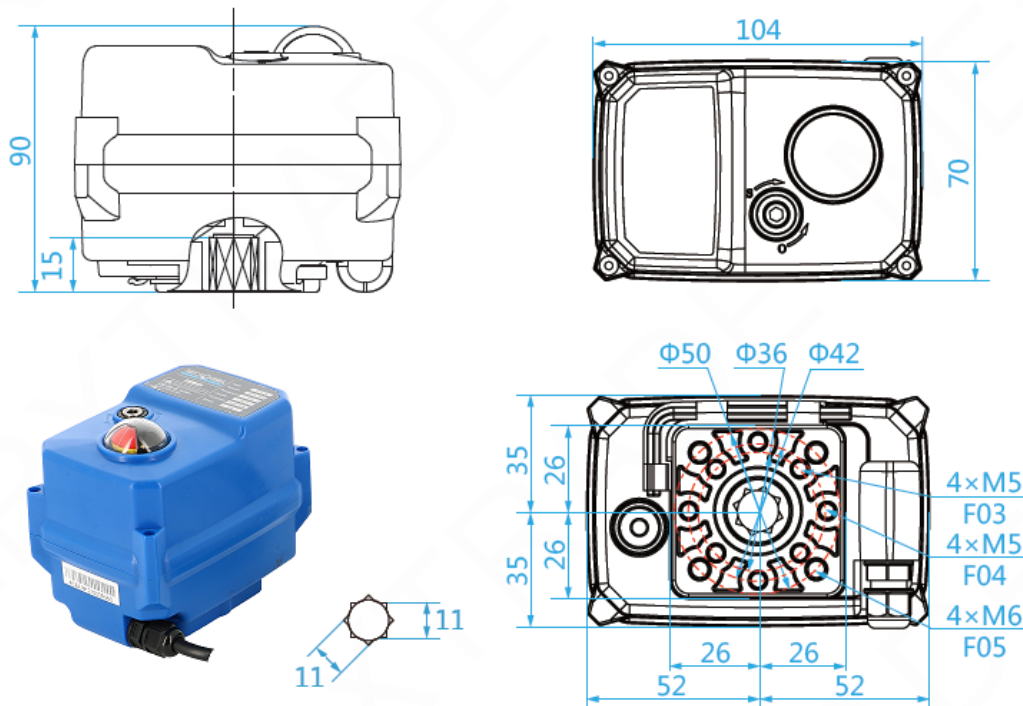
CONSTRUCTION (TCR-02N)

TCR-02N					
No.	Name	Material	No.	Name	Material
1	Casing + lid	Plastic (ABS)	6	Rating plate	PVC
2	Position indicator	Polycarbonate plastic	7	Key support	Plastic (ABS)
3	Screw x 4	Aisi 304	8	Hex key	Steel
4	Backup control stem	Aisi 304	9	Packing gland	Nylon
5	Gasket	NBR	10	Cover gasket	NBR

Weight (kg): 0.620



DIMENSIONS (mm)

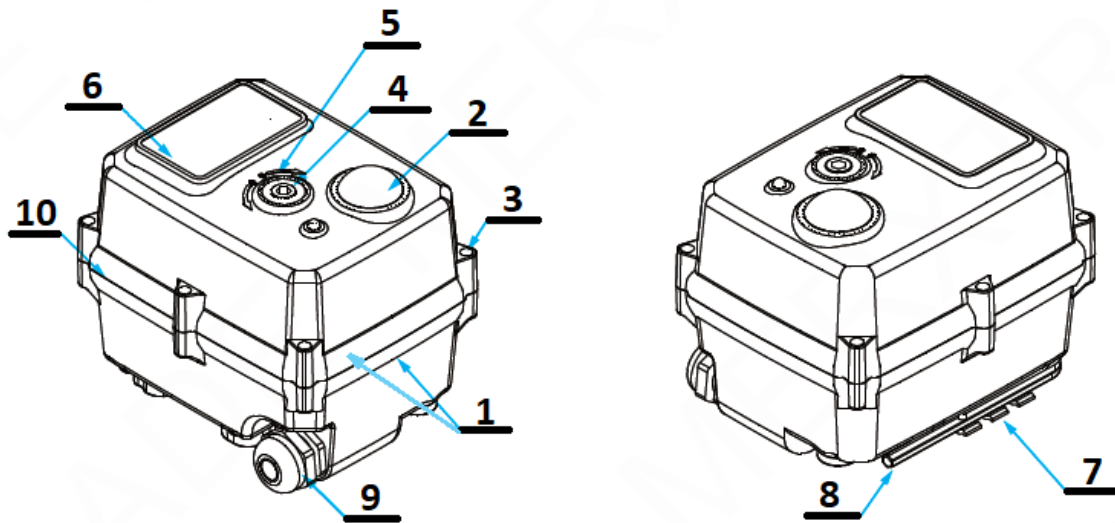


TCR-N ELECTRICAL ACTUATOR

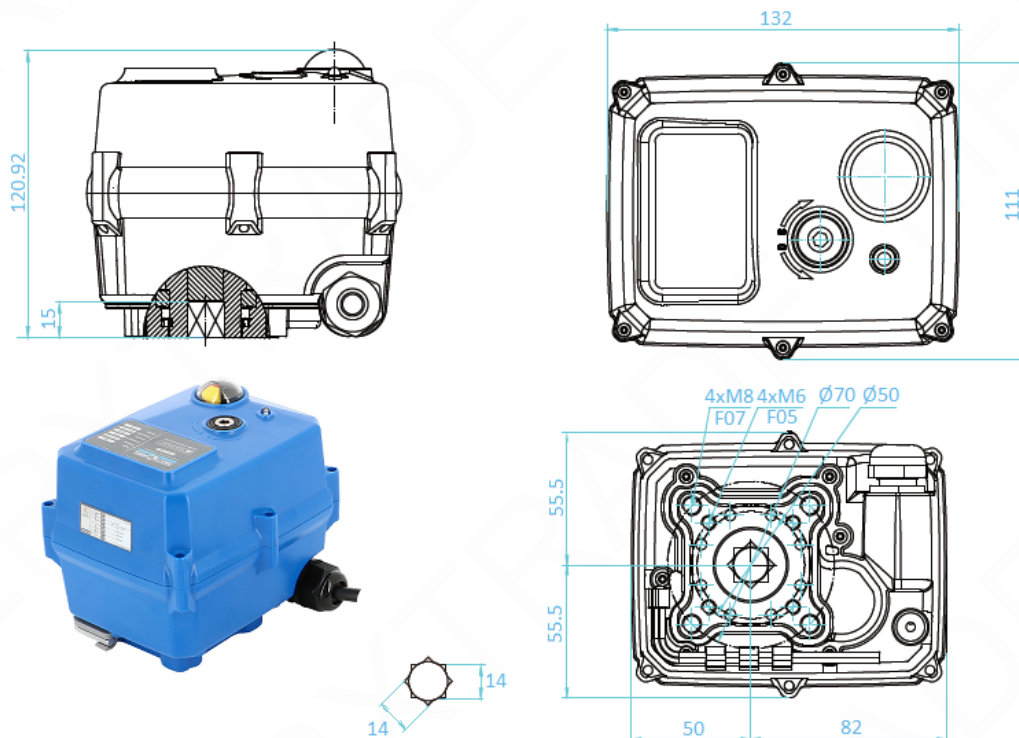
CONSTRUCTION (TCR-05N)

TCR-05N					
No.	Name	Material	No.	Name	Material
1	Casing + lid	Plastic (ABS)	6	Rating plate	PVC
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	Packing gland	Nylon
5	Gasket	NBR	10	Cover gasket	NBR

Weight (kg): 1.800



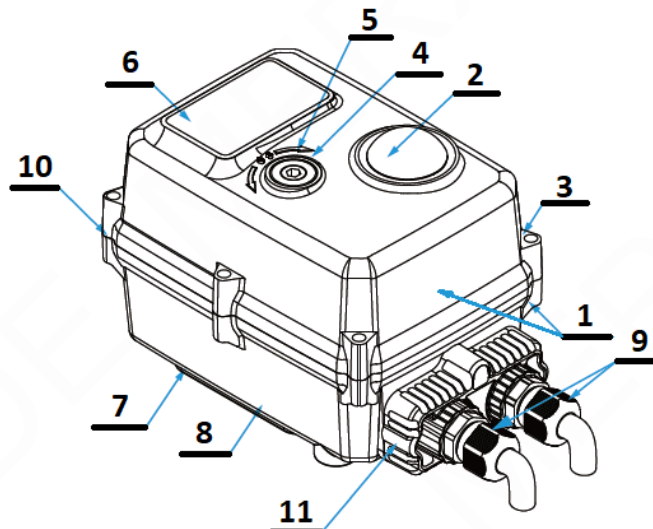
DIMENSIONS (mm)



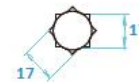
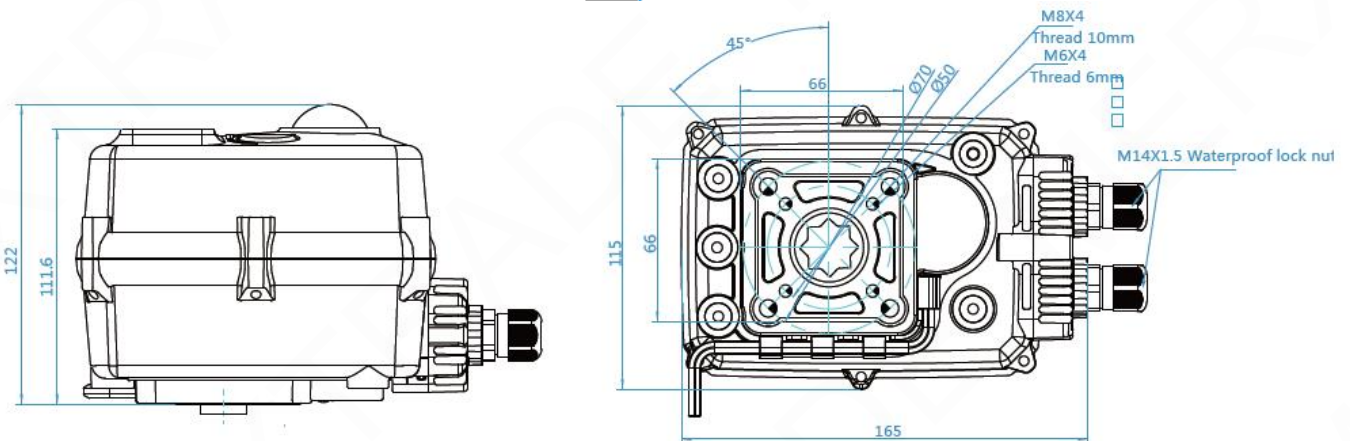
TCR-N ELECTRICAL ACTUATOR

CONSTRUCTION (TCR-11N)

TCR-11N					
No.	Name	Material	No.	Name	Material
1	Casing + lid	Plastic (ABS)	6	Rating plate	PVC
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	Gasket	NBR	10	Cover gasket	NBR
Weight (kg): 2.200			11	Cable gland unit	Plastic (ABS)

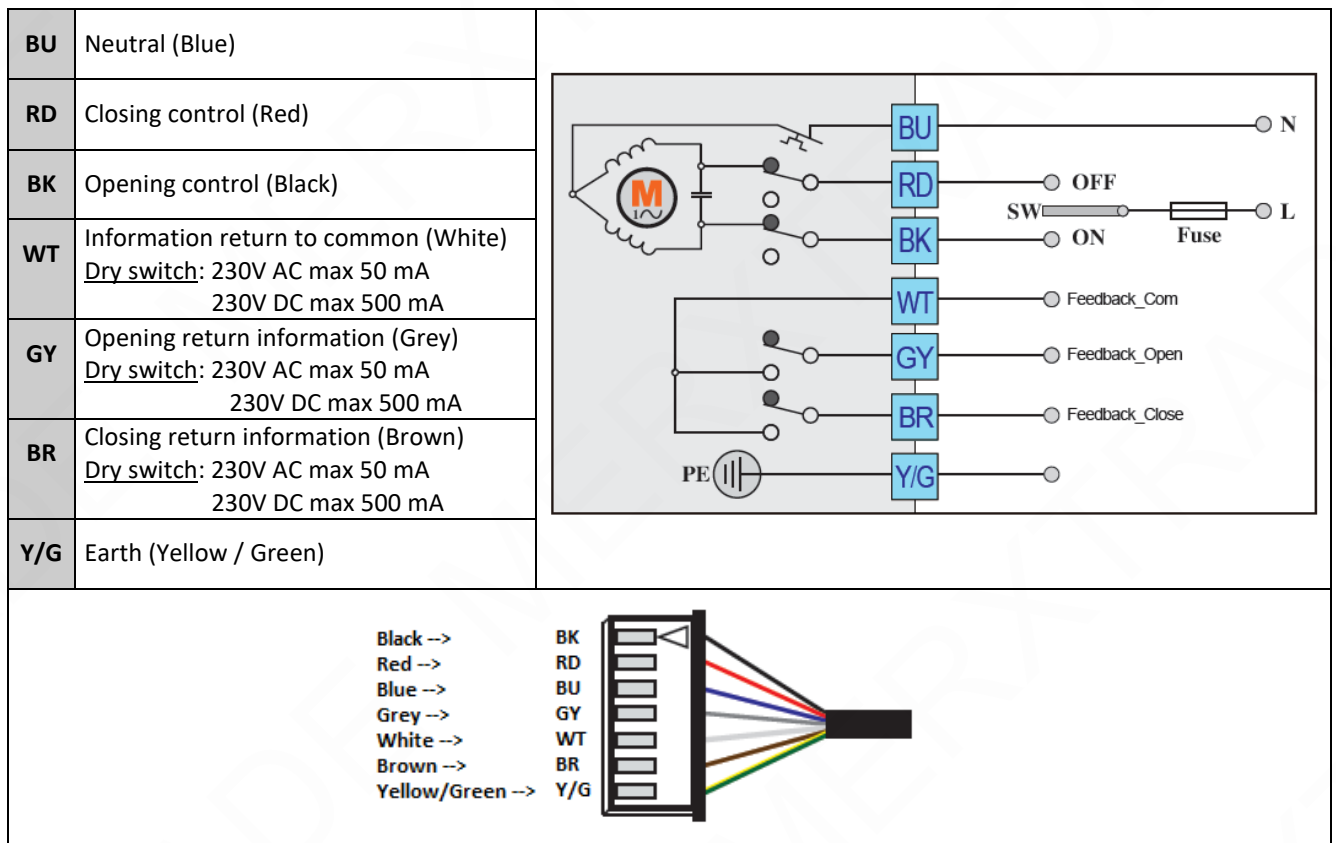


DIMENSIONS (mm)

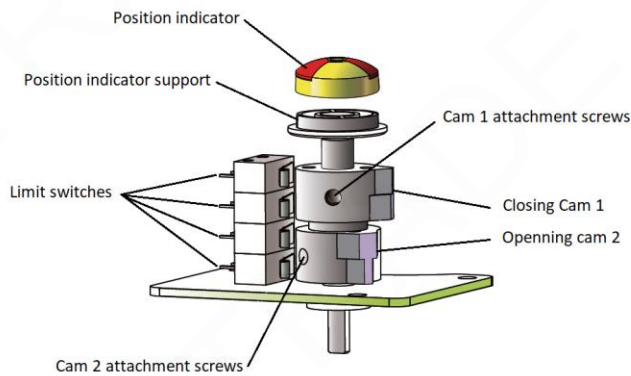


TCR-N ELECTRICAL ACTUATOR

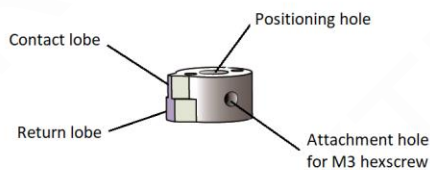
WIRING DIAGRAM



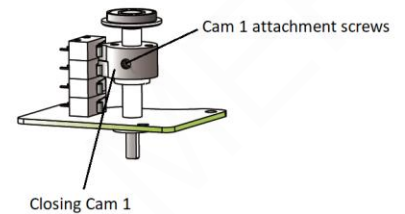
SWITCH SETTING



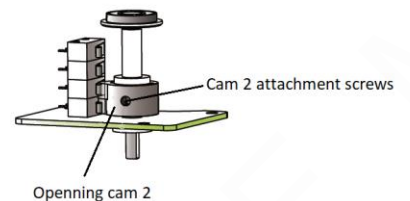
GENERAL VIEW



CAM DETAIL



CLOSING CAM ADJUSTMENT



OPENING CAM ADJUSTMENT

TCR-N ELECTRICAL ACTUATOR

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.

TCR-N-KT CAPACITOR RETURN ELECTRICAL ACTUATOR

FEATURES

The TCR-N-KT electric actuators are intended for motorising ¼ turn valves with a torque of 15, 45, 95 or 110 Nm. **Capacitor return function:** the closing manoeuvre is provided by a capacitor. 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.

AVAILABLE MODELS

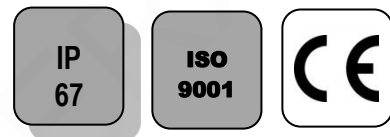
Supply voltages: 230V AC, 24V AC/DC.

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	15 - 45 - 95 - 110 Nm
Angle of rotation	90° +/- 2°
Declutching	without
Override control	By key



Actuator	TCR 02N-KT32		TCR 05N-KT32		TCR 11N-KT32	
	Torques (Nm)	15		45		110
Voltage	24V AC - DC	95-265V AC-DC	24V AC - DC	95-265V AC-DC	24V AC - DC	95-265V AC-DC
Manoeuvring time (s)	15	15	12	12	10	10
ISO 5211:	F03/F04/F05 - star 11		F05/F07 - star 14		F05/F07 - star 17	

ELECTRICAL FEATURES

Actuator	TCR 02N-KT32	TCR 05N-KT32	TCR 11N-KT32
Motor protection	Thermal switch		
Limit switches	2 adjustable switches		
Auxiliary switches	2 adjustable dry switches		
Anti-condensation	integrated		
Electrical connection	PE M10 + 1.5m cable	PE M20 + 1.5m cable	2 x PE M14

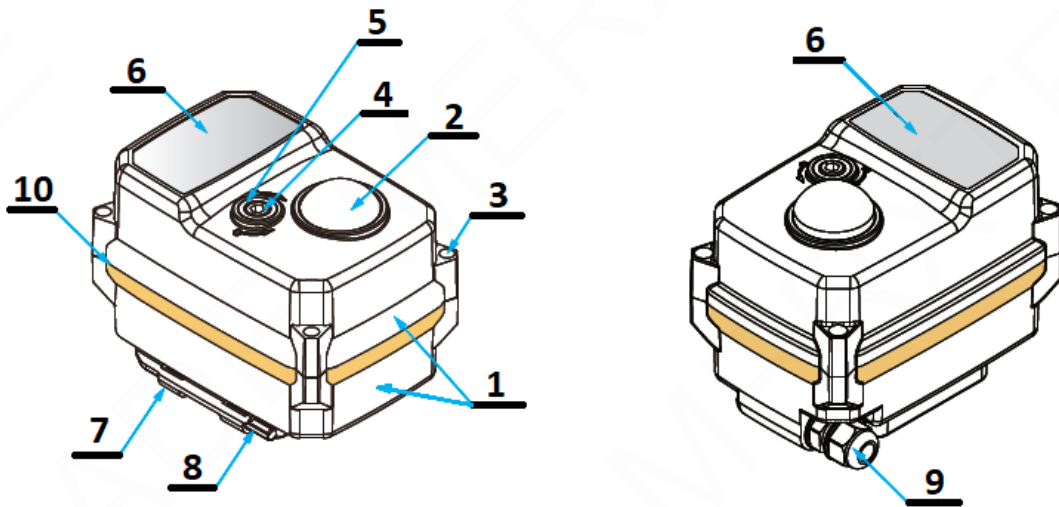
Actuator	TCR 02N-KT32		TCR 05N-KT32		TCR 11N-KT32	
Voltage	24V AC - DC	95-265V AC-DC	24V AC - DC	95-265V AC-DC	24V AC - DC	95-265V AC-DC
Power (W)	36	36	40	40	100	100
Current (A)	1,5	0,09	1,8	1,6	2,5	0,26 - 0,52
Fuse protection (A)	5	1	10	2	5	2

TCR-N-KT CAPACITOR RETURN ELECTRICAL ACTUATOR

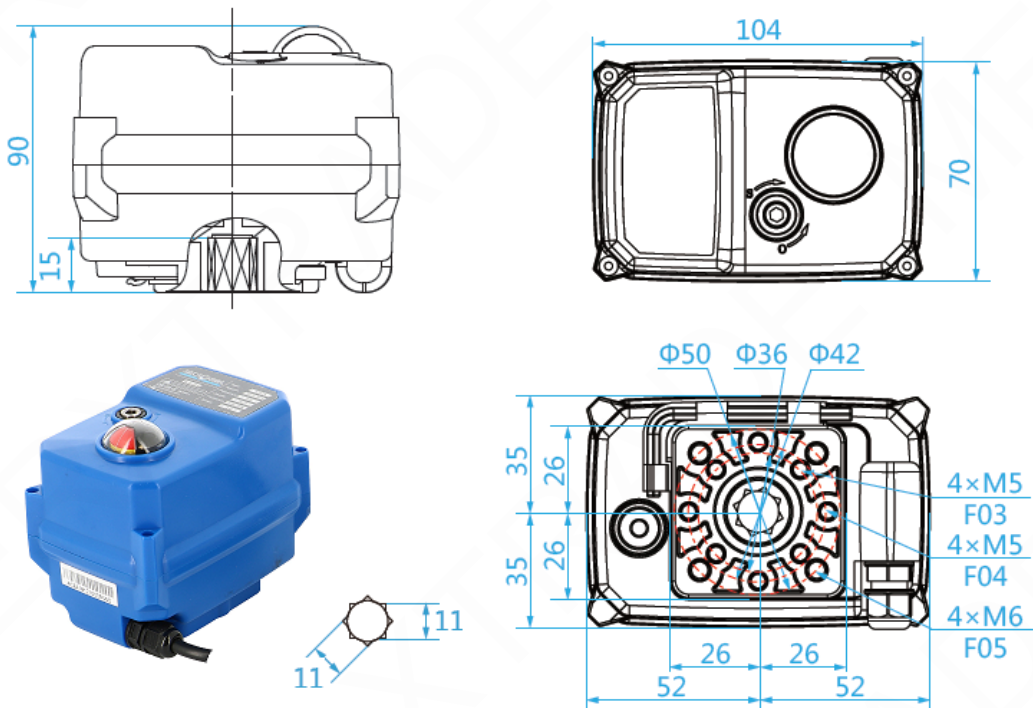
CONSTRUCTION (TCR-02N-KT32)

TCR-02N-KT32					
No.	Name	Material	No.	Name	Material
1	Casing + lid	Plastic (ABS)	6	Rating plate	PVC
2	Position indicator	Polycarbonate plastic	7	Key support	Plastic (ABS)
3	Screw x 4	Aisi 304	8	Hex key	Steel
4	Backup control stem	Aisi 304	9	Packing gland	Nylon
5	Gasket	NBR	10	Cover gasket	NBR

Weight (kg): 0.620



DIMENSIONS (mm)

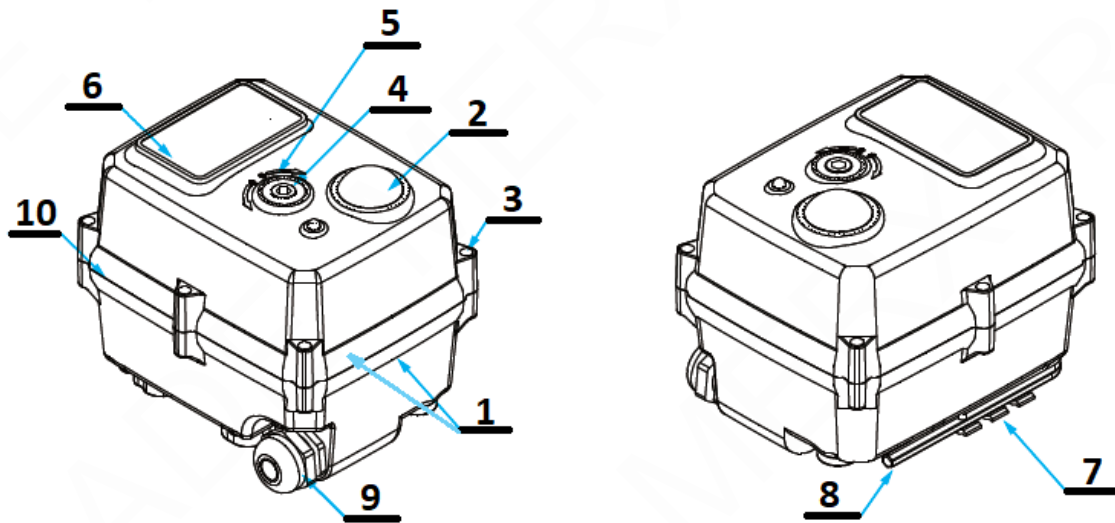


TCR-N-KT CAPACITOR RETURN ELECTRICAL ACTUATOR

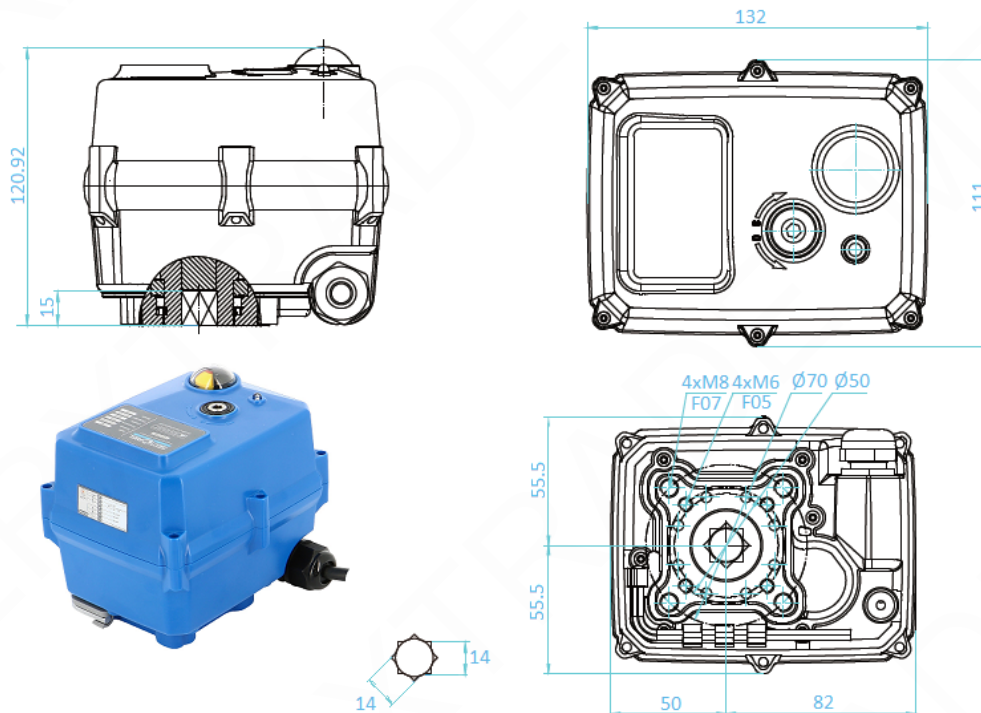
CONSTRUCTION (TCR-05N-KT32)

TCR-05N-KT32					
No.	Name	Material	No.	Name	Material
1	Casing + lid	Plastic (ABS)	6	Rating plate	PVC
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	Packing gland	Nylon
5	Gasket	NBR	10	Cover gasket	NBR

Weight (kg): 1.800



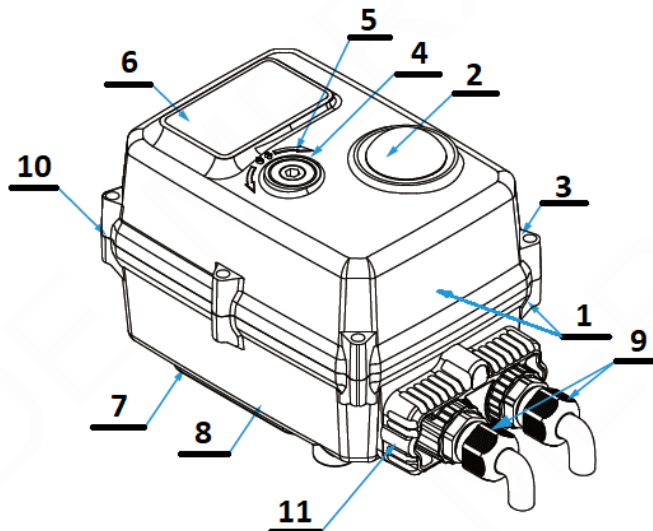
DIMENSIONS (mm)



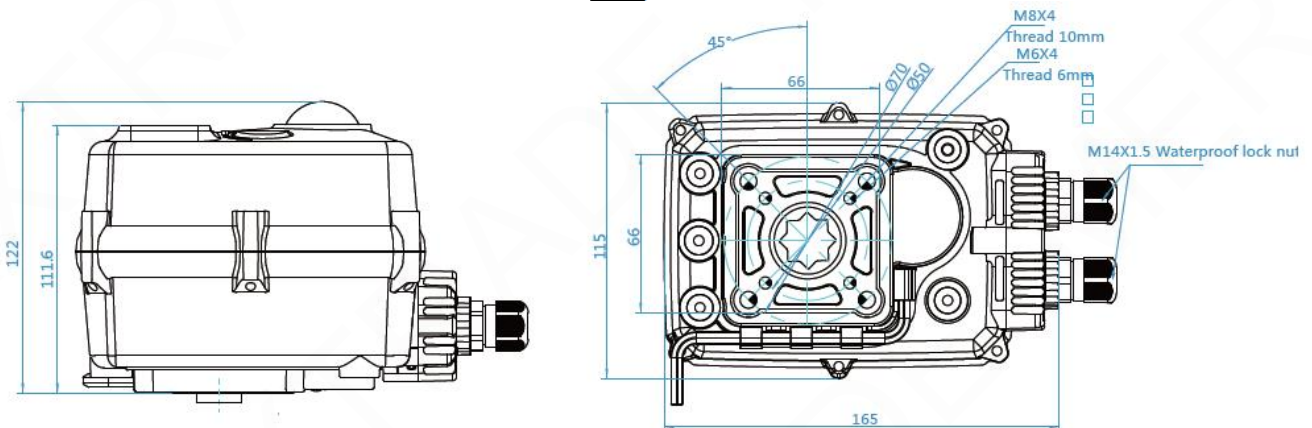
TCR-N-KT CAPACITOR RETURN ELECTRICAL ACTUATOR

CONSTRUCTION (TCR-11N-KT32)

TCR-11N-KT32					
No.	Name	Material	No.	Name	Material
1	Casing + lid	Plastic (ABS)	6	Rating plate	PVC
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	Gasket	NBR	10	Cover gasket	NBR
Weight (kg): 2.200			11	Cable gland unit	Plastic (ABS)



DIMENSIONS (mm)



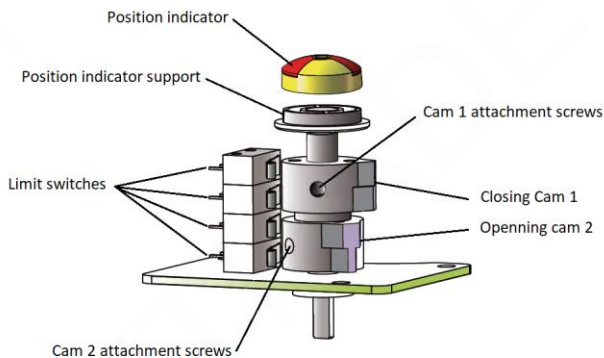
TCR-N-KT CAPACITOR RETURN ELECTRICAL ACTUATOR

WIRING DIAGRAM

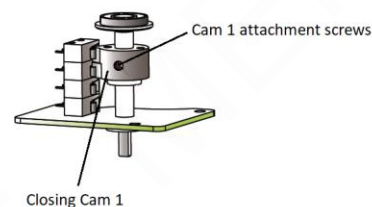
BU	Neutral / V (blue)	
RD	Phase / V+ (Red)	
BK	Control (Black)	
WT	Information return to common (White) Dry switch: 230V AC max 50 mA 230V DC max 500 mA	
GY	Opening return information (Grey) Dry switch: 230V AC max 50 mA 230V DC max 500 mA	
BR	Closing return information (Brown) Dry switch: 230V AC max 50 mA 230V DC max 500 mA	
Y/G	Earth (Yellow / Green)	

<p>Black --> BK</p> <p>Red --> RD</p> <p>Blue --> BU</p> <p>Grey --> GY</p> <p>White --> WT</p> <p>Brown --> BR</p> <p>Yellow/Green --> Y/G</p>	
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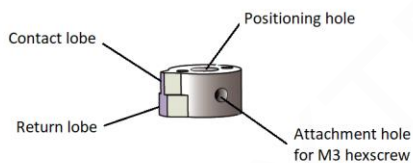
SWITCH SETTING



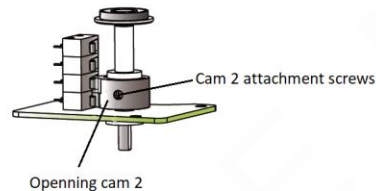
GENERAL VIEW



CLOSING CAM ADJUSTMENT



CAM DETAIL



OPENING CAM ADJUSTMENT

TCR-N-KT CAPACITOR RETURN ELECTRICAL ACTUATOR

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.

TCR-NH HIGH-SPEED ELECTRICAL ACTUATOR

FEATURES

The TCR-NH electric actuators are intended for motorising ¼ turn valves with a torque of 15, 50 or 80 Nm. **High-speed function:** 6-second manoeuvre time. 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.

AVAILABLE MODELS

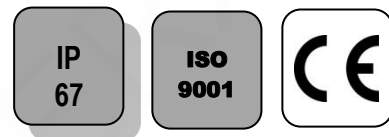
Supply voltages: 230V AC, 24V AC/DC.

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	15 - 50 - 80 Nm
Angle of rotation	90° +/- 2°
Declutching	without
Override control	By key



Actuator	TCR 02NH		TCR 05NH		TCR 11NH	
Torques (Nm)	15		50		80	
Voltage	24V AC - DC	95-265V AC-DC	24V AC - DC	95-265V AC-DC	24V AC - DC	95-265V AC-DC
Manoeuvring time (s)	6	6	5	5	5	5
ISO 5211:	F03/F04/F05 - star 11		F05/F07 - star 14		F05/F07 - star 17	

ELECTRICAL FEATURES

Actuator	TCR 02NH	TCR 05NH	TCR 11NH
Motor protection	Thermal switch		
Limit switches	2 adjustable switches		
Auxiliary switches	2 adjustable dry switches		
Anti-condensation	integrated		
Electrical connection	PE M10 + 1.5m cable	PE M20 + 1.5m cable	2 x PE M14

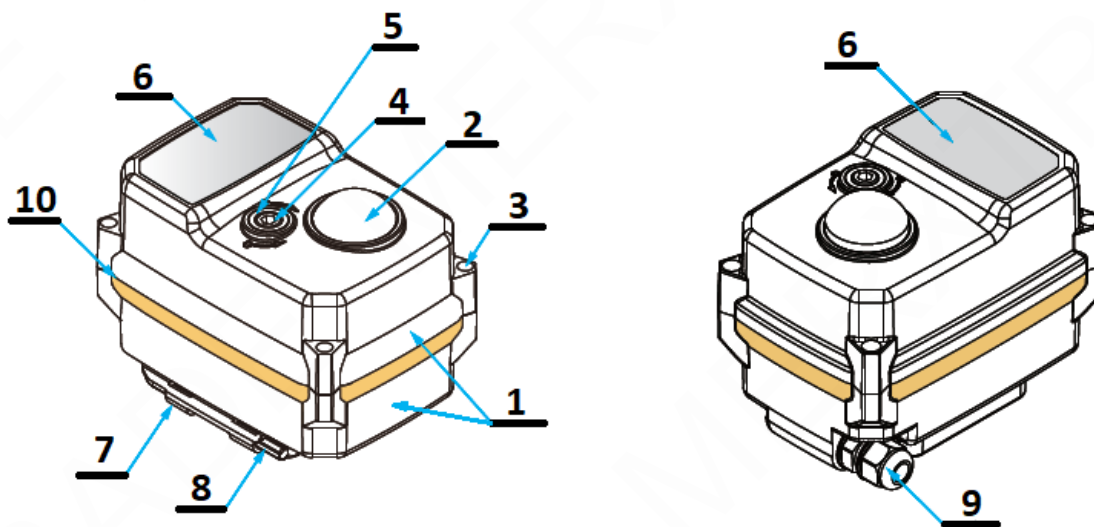
Actuator	TCR 02NH		TCR 05NH		TCR 11NH	
Voltage	24V AC - DC	95-265V AC-DC	24V AC - DC	95-265V AC-DC	24V AC - DC	95-265V AC-DC
Power (W)	100	25	40	40	100	100
Current (A)	1,5	0,12	1,8	1,8	5	0,52
Fuse protection (A)	5	1	10	10	10	2

TCR-NH HIGH-SPEED ELECTRICAL ACTUATOR

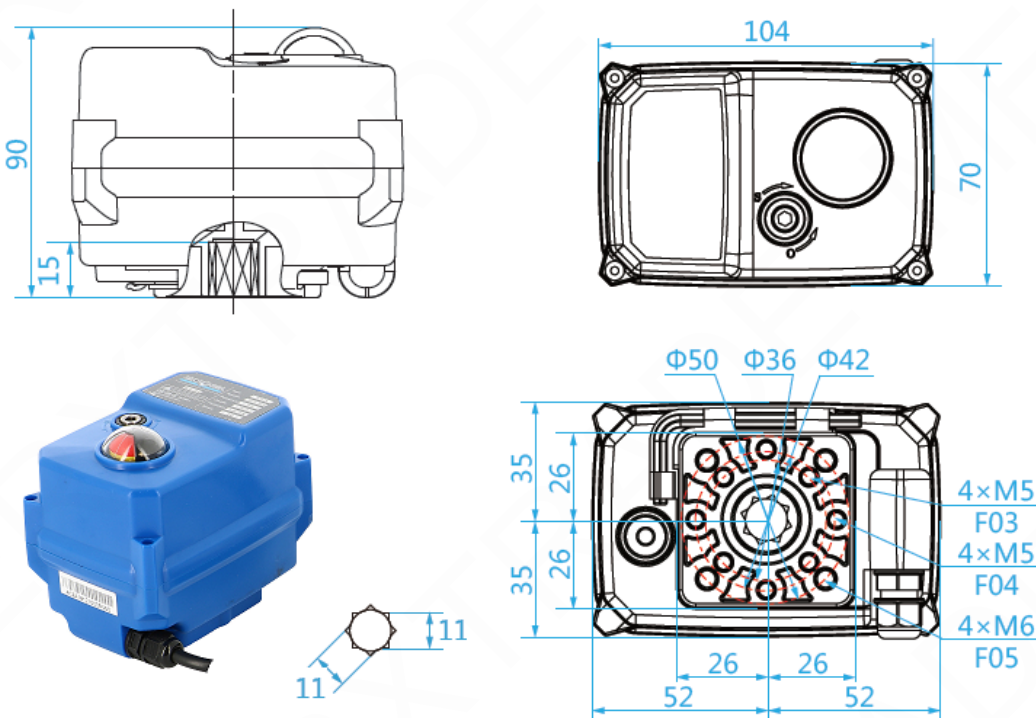
CONSTRUCTION (TCR-02NH)

TCR-02NH					
No.	Name	Material	No.	Name	Material
1	Casing + lid	Plastic (ABS)	6	Rating plate	PVC
2	Position indicator	Polycarbonate plastic	7	Key support	Plastic (ABS)
3	Screw x 4	Aisi 304	8	Hex key	Steel
4	Backup control stem	Aisi 304	9	Packing gland	Nylon
5	Gasket	NBR	10	Cover gasket	NBR

Weight (kg): 0.620



DIMENSIONS (mm)

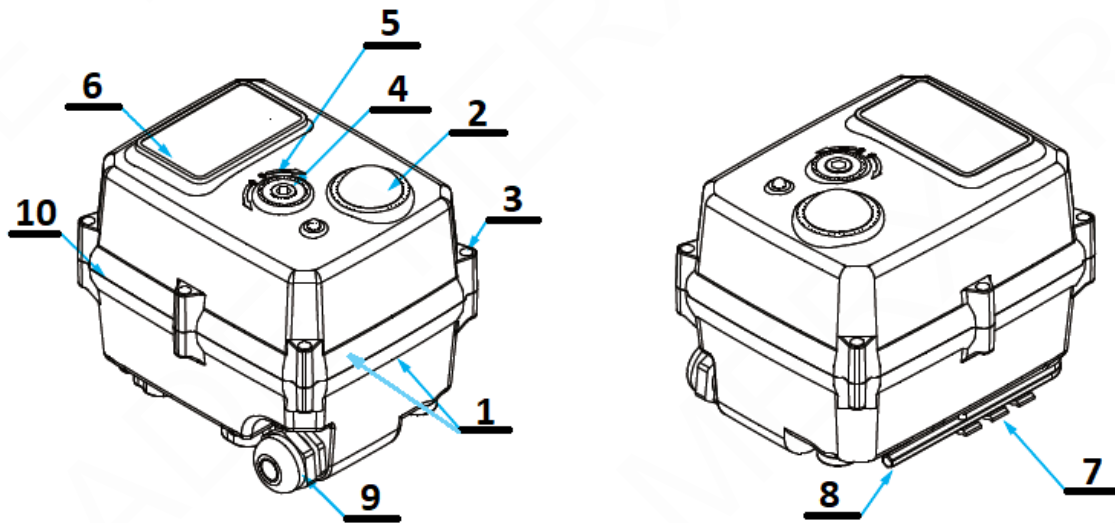


TCR-NH HIGH-SPEED ELECTRICAL ACTUATOR

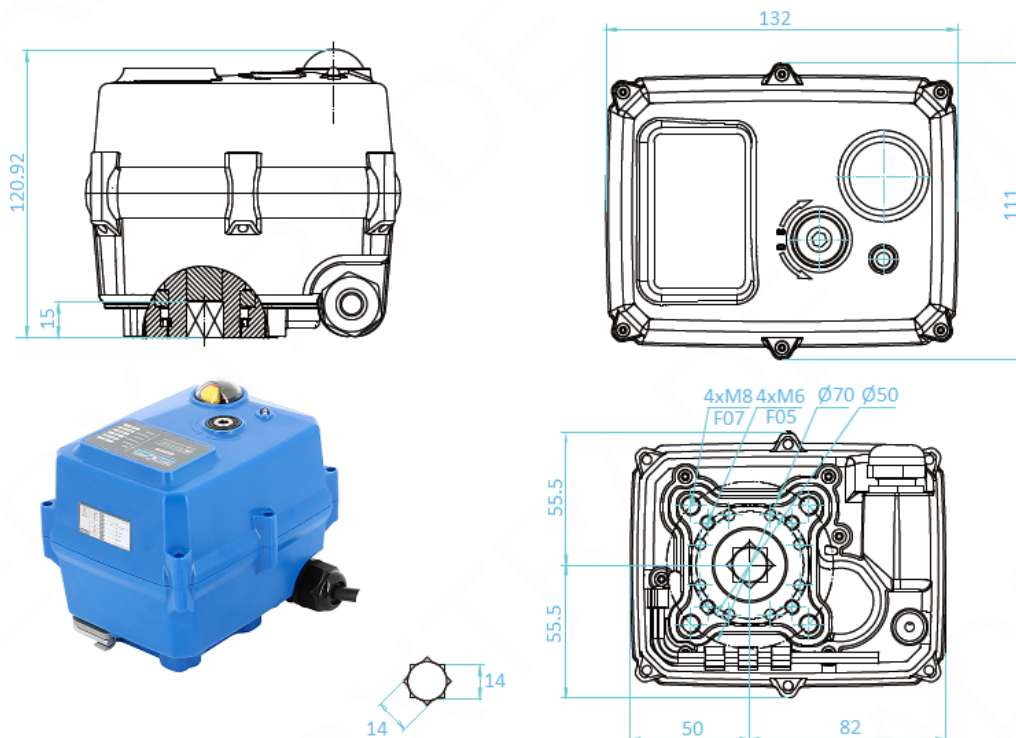
CONSTRUCTION (TCR-05NH)

TCR-05NH					
No.	Name	Material	No.	Name	Material
1	Casing + lid	Plastic (ABS)	6	Rating plate	PVC
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	Packing gland	Nylon
5	Gasket	NBR	10	Cover gasket	NBR

Weight (kg): 1.800



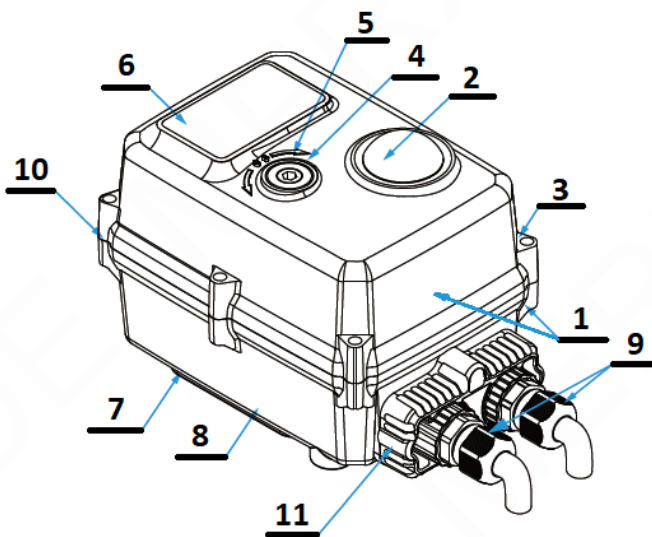
DIMENSIONS (mm)



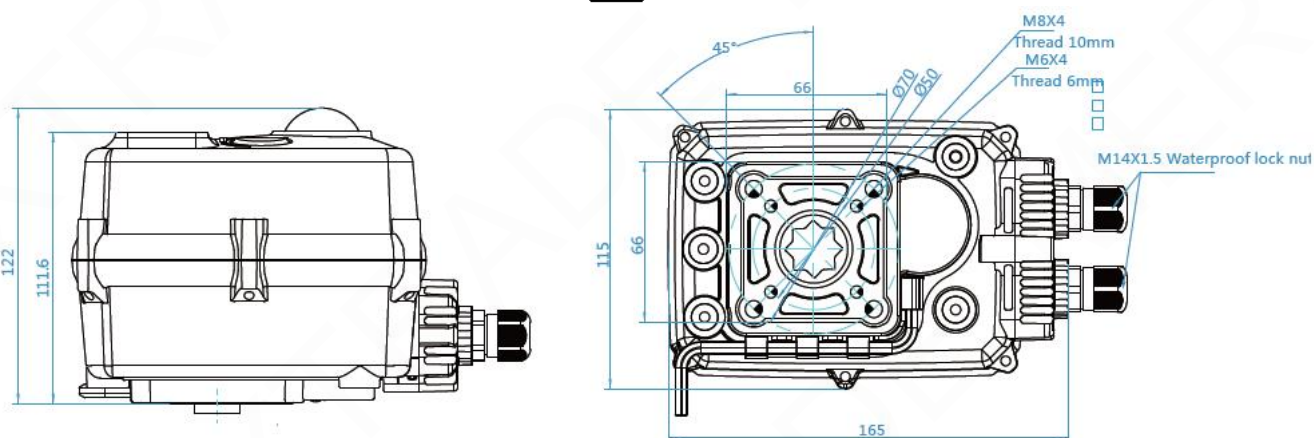
TCR-NH HIGH-SPEED ELECTRICAL ACTUATOR

CONSTRUCTION (TCR-11NH)

TCR-11NH					
No.	Name	Material	No.	Name	Material
1	Casing + lid	Plastic (ABS)	6	Rating plate	PVC
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	Gasket	NBR	10	Cover gasket	NBR
Weight (kg): 2.200			11	Cable gland unit	Plastic (ABS)

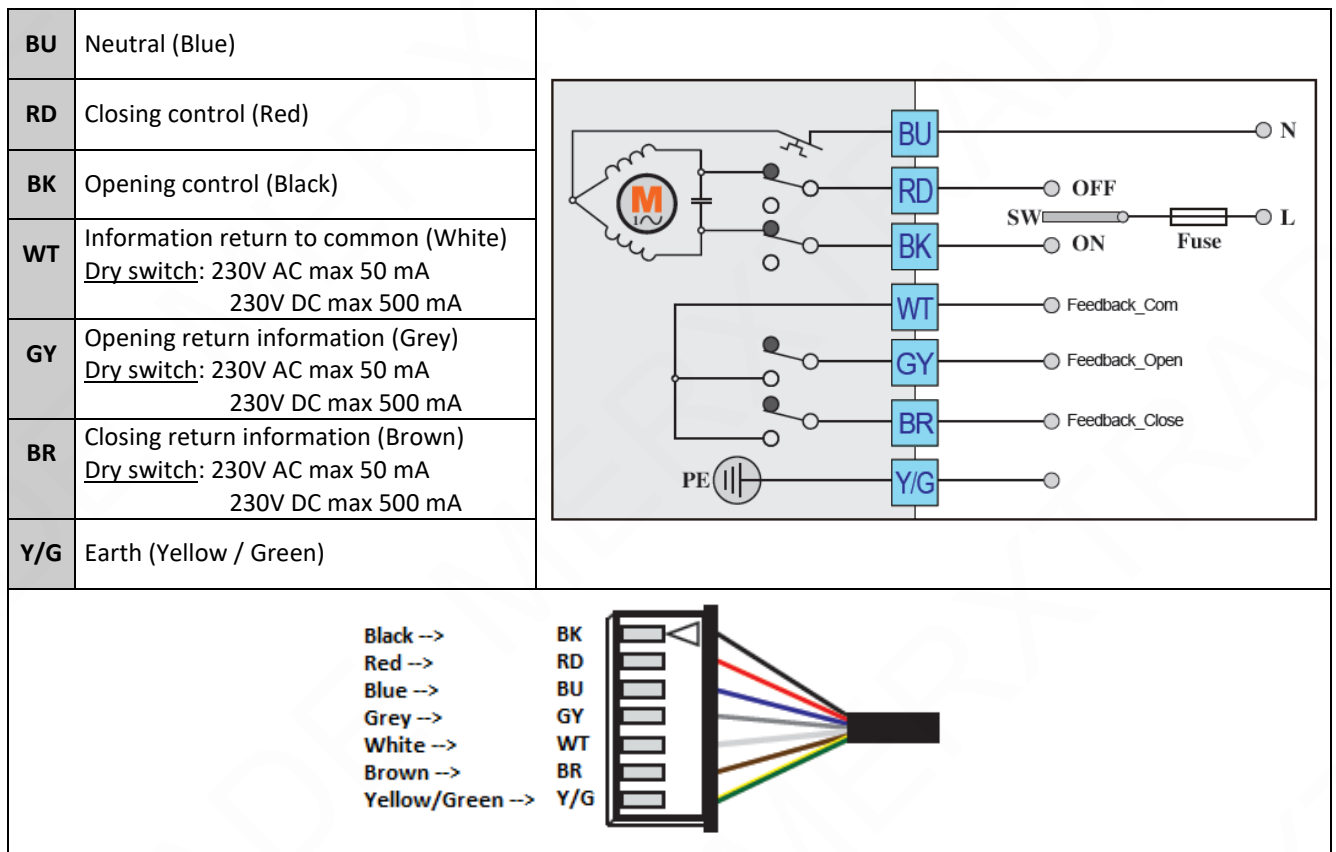


DIMENSIONS (mm)

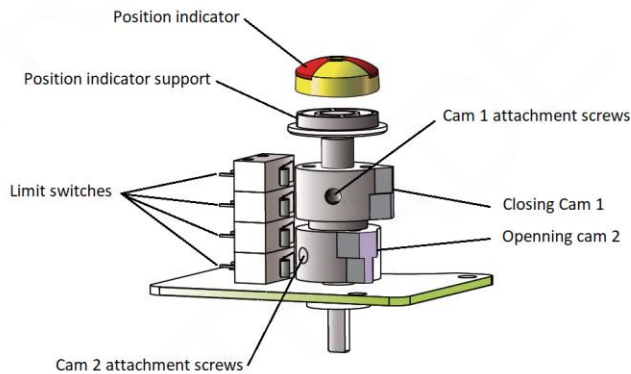


TCR-NH HIGH-SPEED ELECTRICAL ACTUATOR

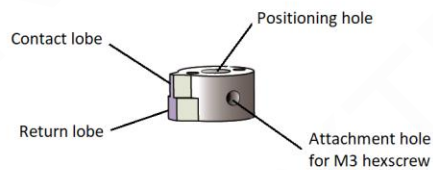
WIRING DIAGRAM



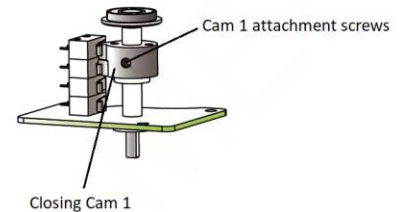
SWITCH SETTING



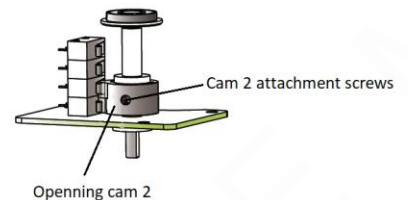
GENERAL VIEW



CAM DETAIL



CLOSING CAM ADJUSTMENT



OPENING CAM ADJUSTMENT

TCR-NH HIGH-SPEED ELECTRICAL ACTUATOR

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.

TCR-02D TIMER ELECTRICAL ACTUATOR

FEATURES

The TCR-02D electric actuator is intended for motorising ¼ turn valves with a torque of 20 Nm., including the “TIMER” function. With a compact construction and plastic housing, it is especially well suited for motorising small dimensions ball valves. The parameters of the TIMER function can be set via a menu. This function is used for programming periodic, automatic openings/closings of a valve (frequency and length of time) under two modes: ON and OFF cycle of lengths of time or clock. 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.

LIMITS OF USE

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

MECHANICAL FEATURES

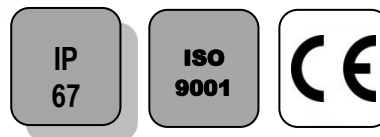
Gear box	treated steel pinions
Torques	20 Nm
Angle of rotation	90° +/- 2°
Declutching	Without
Override control	By key

Actuator	TCR 02D	
Torques (Nm)	20	20
Voltage	24V AC - DC	95-265V AC-DC
Manoeuvring time (s)	10	10
ISO 5211:	F03/F04/F05 - star 11	

ELECTRICAL FEATURES

Actuator	TCR 02D	
Motor protection	Thermal switch	
Limit switches	2 adjustable switches	
Auxiliary switches	2 adjustable dry switches	
Anti-condensation	integrated	
Electrical connection	PE M10 + 1.5m cable	

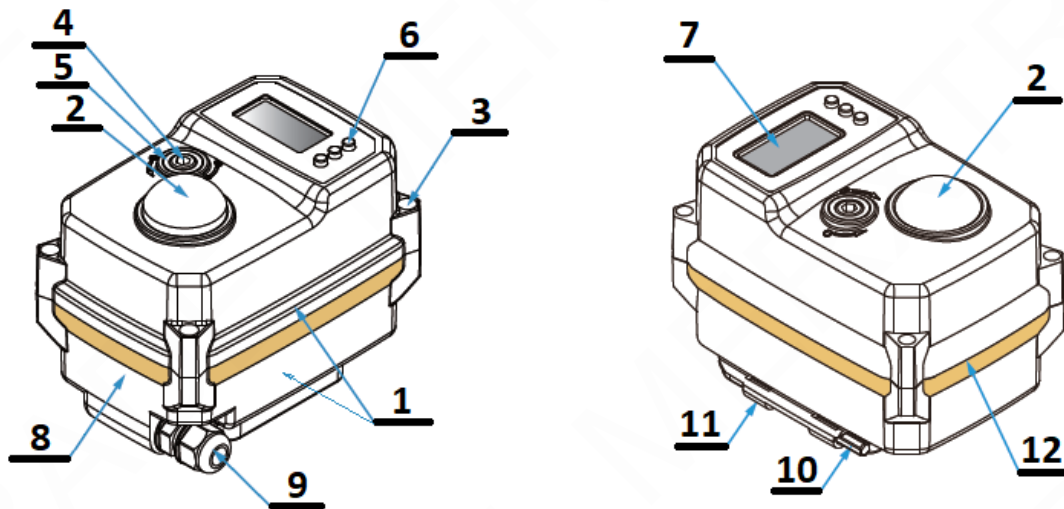
Actuator	TCR 02D	
Voltage	24V AC - DC	95-265V AC-DC
Power (W)	15	15
Current (A)	0,35	0,035 - 0,075
Fuse protection (A)	2	1



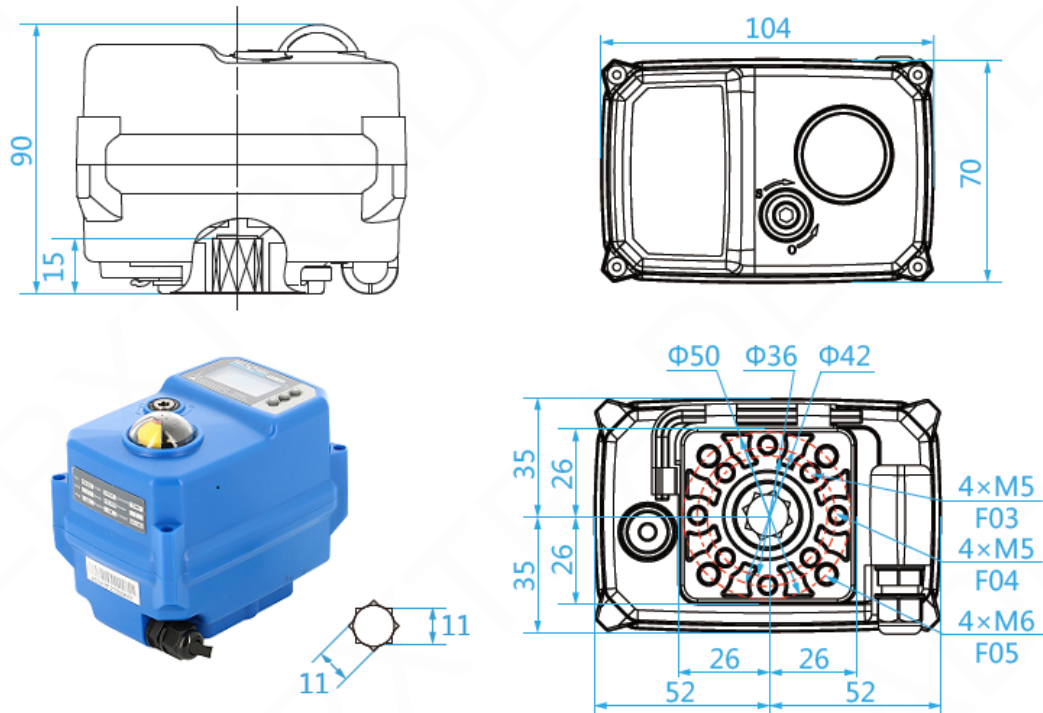
TCR-02D TIMER ELECTRICAL ACTUATOR

CONSTRUCTION (TCR-02D)

TCR-02D					
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	Aisi 304	9	Packing gland	Nylon
4	Backup control stem	Aisi 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					

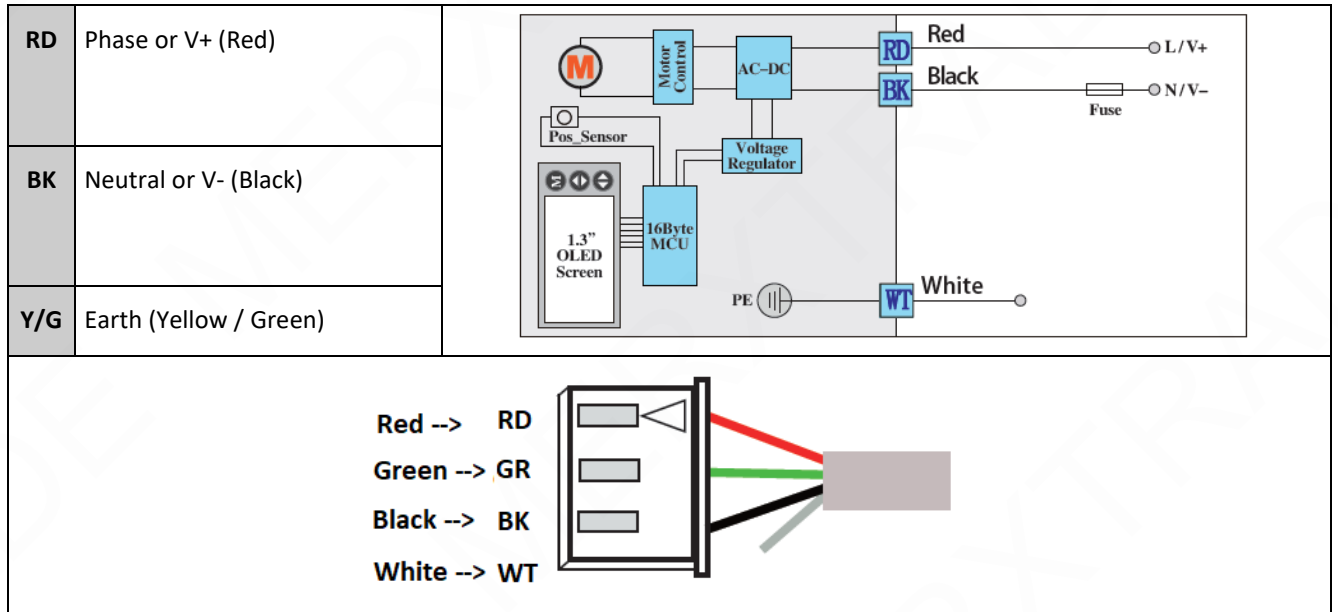


DIMENSIONS (mm)

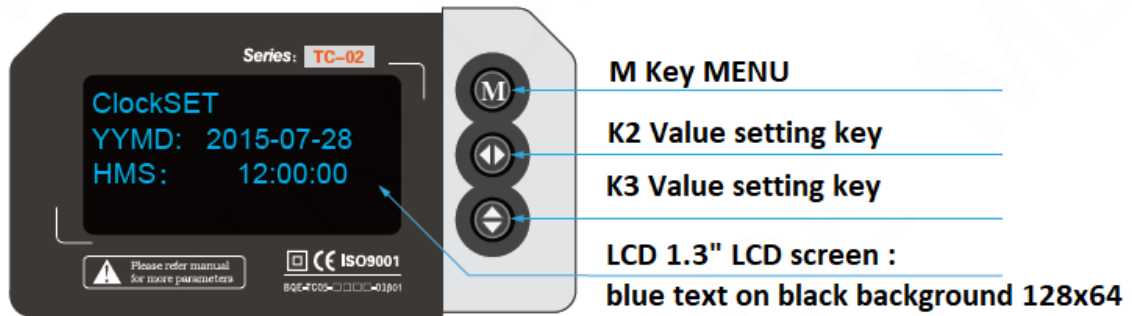


TCR-02D TIMER ELECTRICAL ACTUATOR

WIRING DIAGRAM

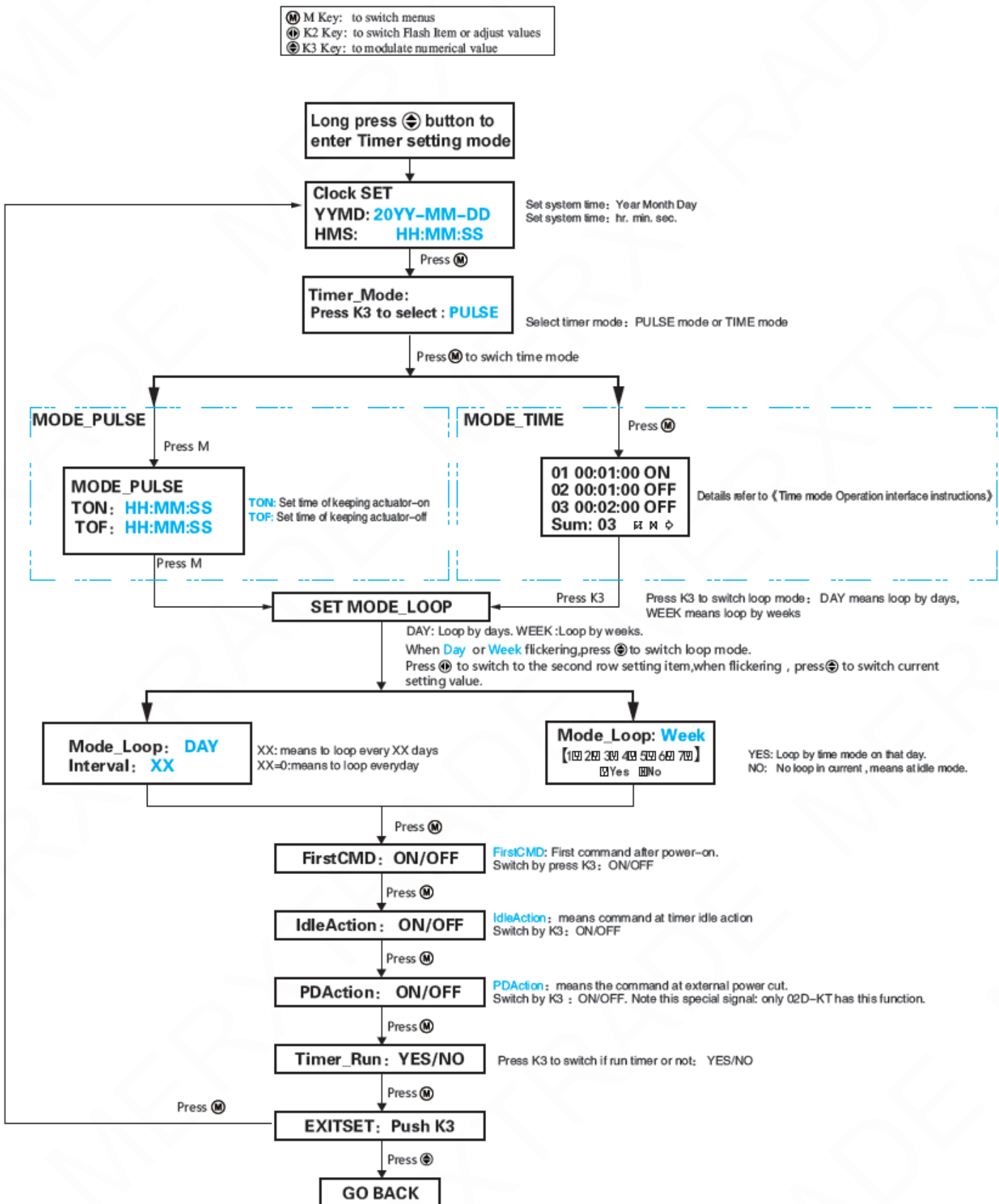


DESCRIPTION OF THE 1.3" LCD SCREEN



TCR-02D TIMER ELECTRICAL ACTUATOR

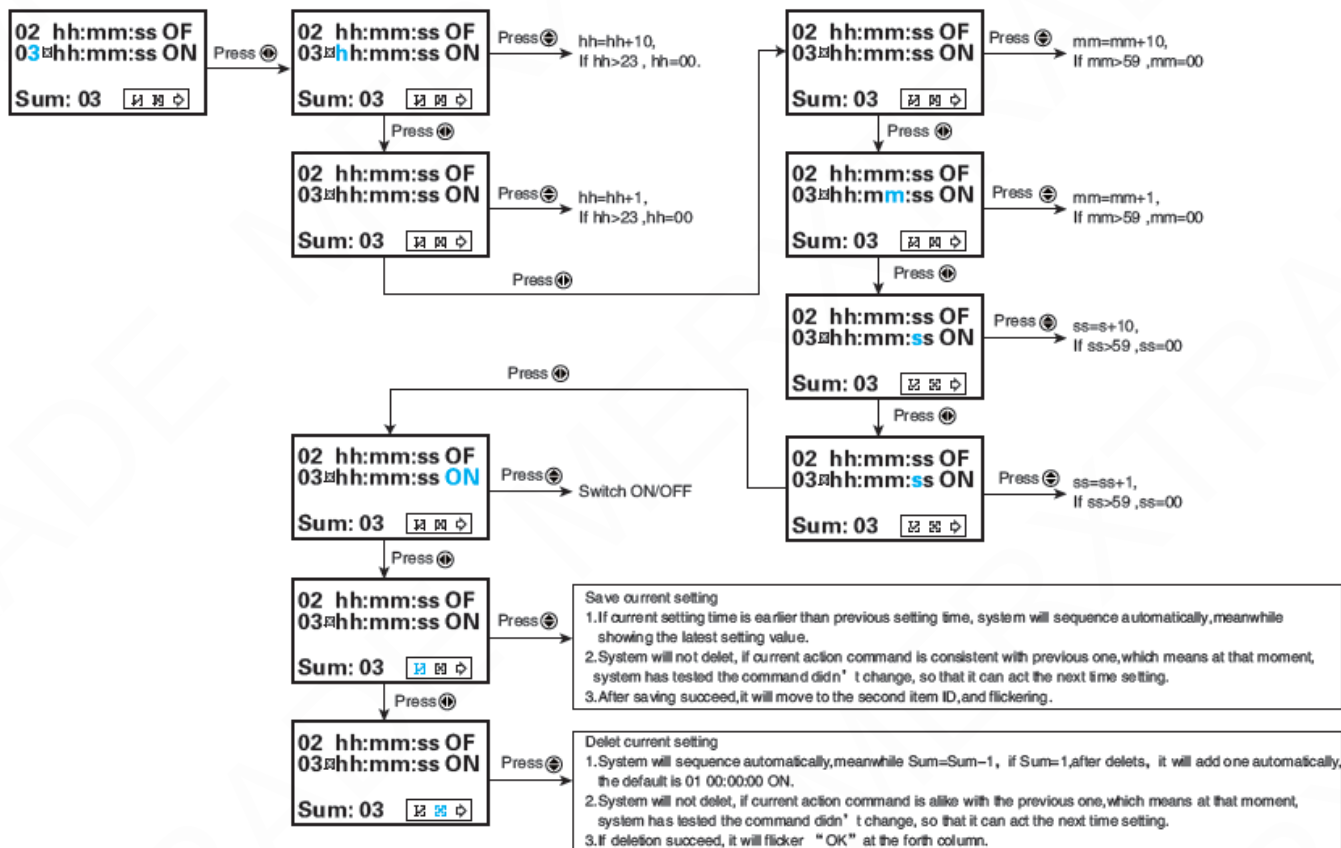
PARAMETER SETTING MENU OF THE TIMER



TCR-02D TIMER ELECTRICAL ACTUATOR

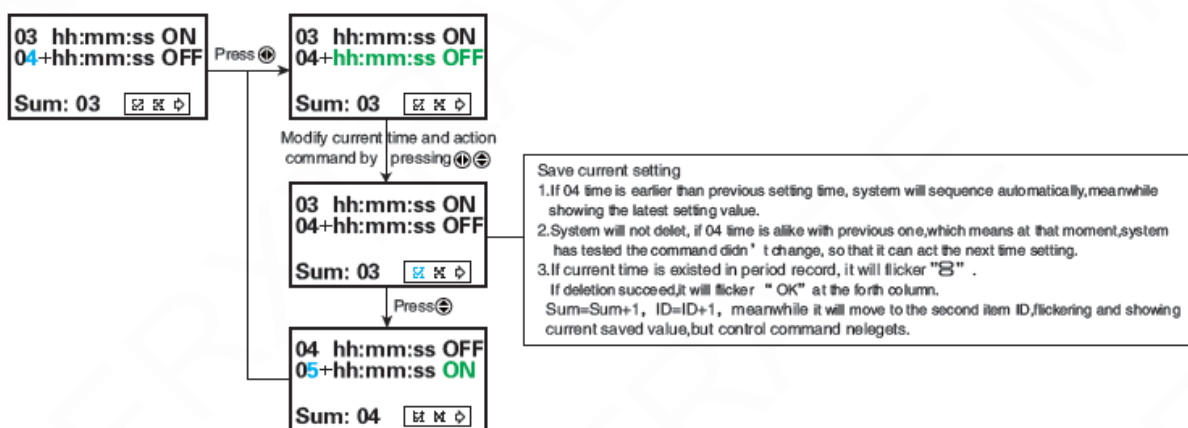
PARAMETER SETTING SUBMENU IN THE CLOCK MODE

Creating and changing schedules



Special Notes: Switch rapidly by flexibly pressing \leftarrow in edition,in order to improve setting efficiency, since it could only move step by step in using \rightarrow .

Inserting new schedules

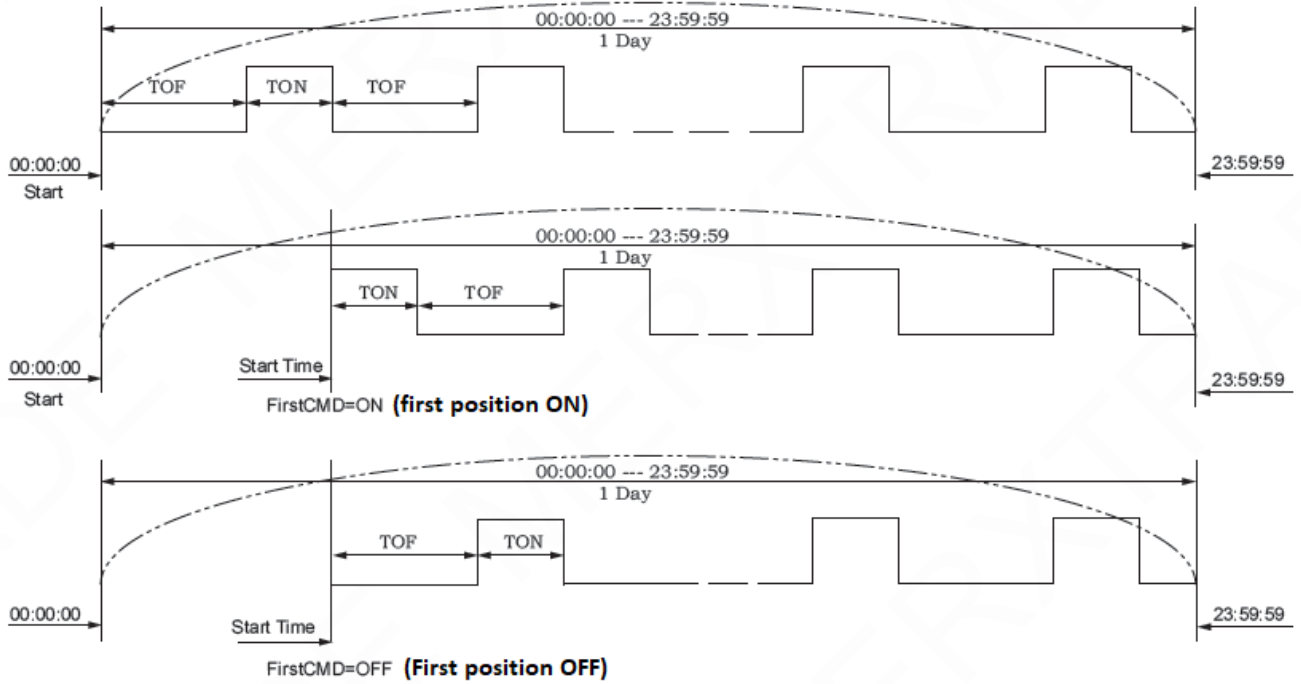


Special Notes: Switch rapidly by flexibly pressing \leftarrow in edition, in order to improve setting efficiency, since it could only move step by step in using \rightarrow .

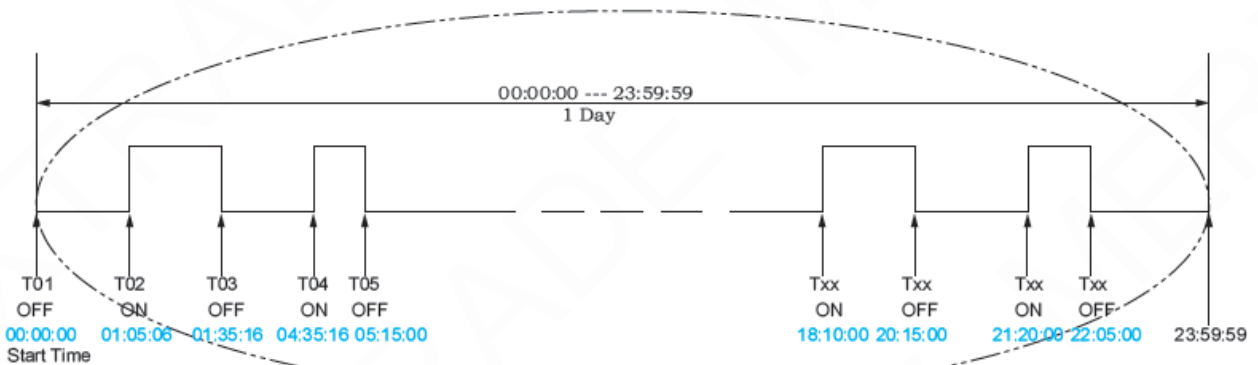
TCR-02D TIMER ELECTRICAL ACTUATOR

CHRONOGRAMS

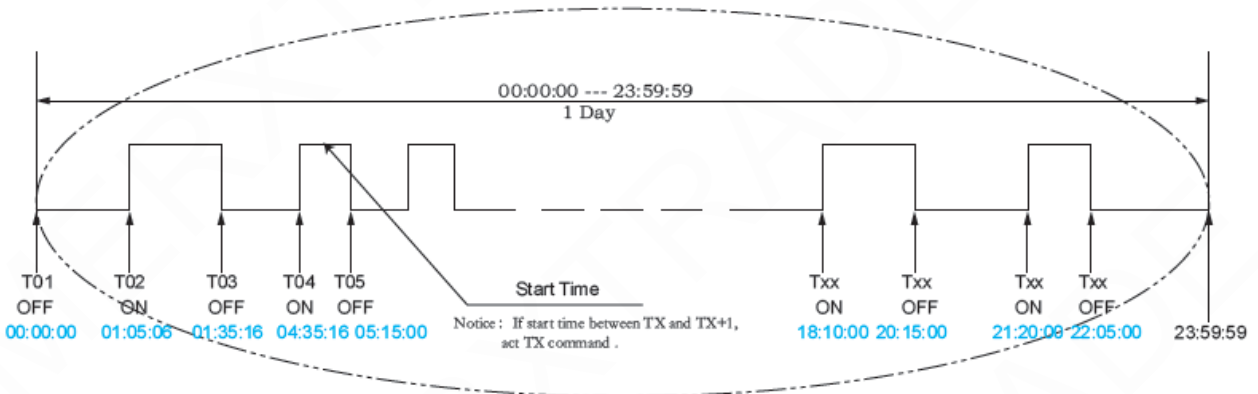
Mode_Pulse



Mode_Time



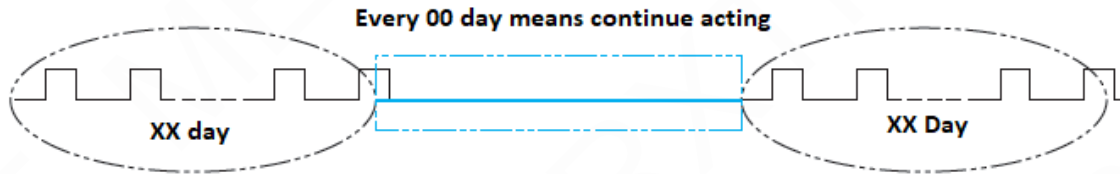
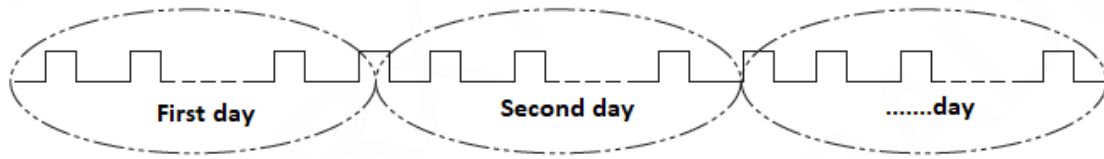
Notice : Start at 00:00:00 , If T01=00: 00: 00 exists, actuators act T01 command, or it will act FirstCMD command.



TCR-02D TIMER ELECTRICAL ACTUATOR

Loop_Day

Ver: 20161015

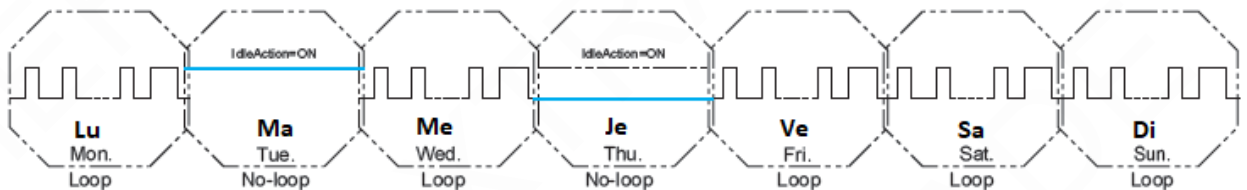
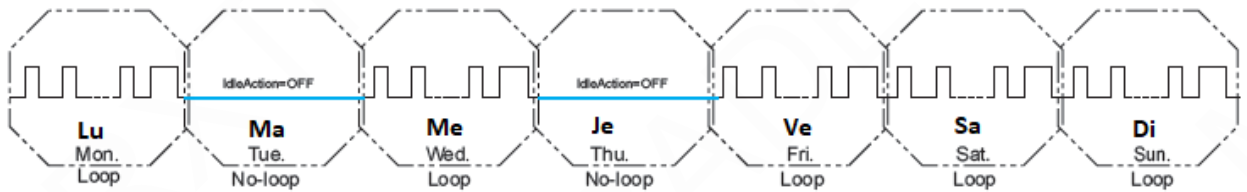
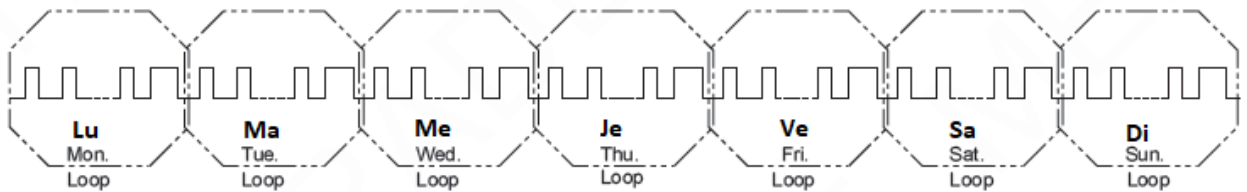


Every XX days : means timer do not loop in blue wireframe
IdleAction = ON



Every XX days : means timer do not loop in blue wireframe
IdleAction = OFF

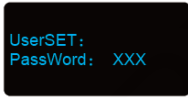
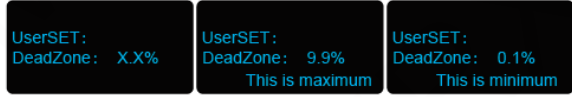
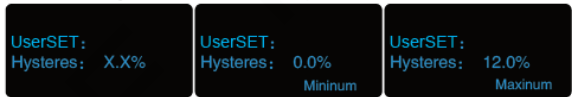
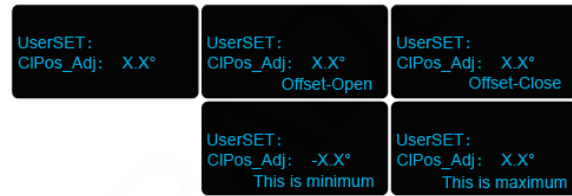
Loop_Week :



TCR-02D TIMER ELECTRICAL ACTUATOR

ADVANCED PARAMETER SETTING MENU

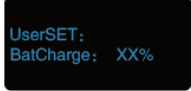
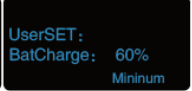
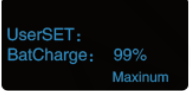
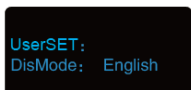

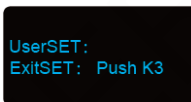
The following functions can have their parameters set from the menu accessible on the screen:

STEP	TITLE	FUNCTION AND VALUES
1	Enter the password	<p>Press the "M" button for more than 5 s. Enter the code "333" (use the keys K2 and K3) Press again the button "M"</p>
		
2	Dead band	<p>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%. Press key M to move to the next parameter.</p>
		
3	Hysteresis value	<p>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. Press key M to move to the next parameter.</p>
		
4	Slight adjustment of the closed position	<p>It is possible to change the closed position of the automatic valve, by a few degrees. This function is interesting if a leak is found along the line. Press key K3 to decrease the opening angle 0.1° (down to -8.5° max) and K2 to (up to -8,5° max). Press key M to move to the next parameter.</p>
		

TCR-02D TIMER ELECTRICAL ACTUATOR

<p>5</p>	<p>Opening/closing time setting</p>	<p>It is possible to set the opening/closing time of the actuator to 5 to 100% of the rated speed. The value by default, is 100%. Press key K3 to increase the manoeuvre time or K2 to decrease it. Press key M to move to the next parameter.</p> <div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="background-color: #333; color: #00aaff; padding: 5px; margin: 5px;">UserSET: CIPos_Adj: X.X°</div> <div style="background-color: #333; color: #00aaff; padding: 5px; margin: 5px;">UserSET: CIPos_Adj: X.X° Offset-Open</div> <div style="background-color: #333; color: #00aaff; padding: 5px; margin: 5px;">UserSET: CIPos_Adj: X.X° Offset-Close</div> <div style="background-color: #333; color: #00aaff; padding: 5px; margin: 5px;">UserSET: CIPos_Adj: -X.X° This is minimum</div> <div style="background-color: #333; color: #00aaff; padding: 5px; margin: 5px;">UserSET: CIPos_Adj: X.X° This is maximum</div> </div>
<p>6</p>	<p>Setting the operating speed</p>	<p>It is possible to set the operating speed of the actuator to 5 to 100% of the rated speed. The value by default, is 100%. Press key K3 to increase the speed (max 100%) or K2 to decrease it (min 5%). Press key M to move to the next parameter. N : it is not recommended to combine functions 5 and 6, the actuator could become overcharged.</p> <div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="background-color: #333; color: #00aaff; padding: 5px; margin: 5px;">UserSET: Speed_PUL: XX%</div> <div style="background-color: #333; color: #00aaff; padding: 5px; margin: 5px;">UserSET: Speed_PUL: 100% This is maximum</div> <div style="background-color: #333; color: #00aaff; padding: 5px; margin: 5px;">UserSET: Speed_PUL: 5% This is minimum</div> </div>
<p>7</p>	<p>Setting the angle of rotation</p>	<p>Parameter which is not used on the TCR-02D standard version</p> <div style="background-color: #333; color: #00aaff; padding: 5px; margin: 5px;">UserSET: Speed_PWM: 100%</div>
<p>8</p>	<p>Response time</p>	<p>Used to set the response speed of the valve. The smaller the value, the less sensitive the rotation. The bigger the value, the more sensitive it is. Increase the value when the response speed of the valve is too low. Setting range: 1 x20x – Value by default 3x</p> <div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="background-color: #333; color: #00aaff; padding: 5px; margin: 5px;">UserSET: StallTime: xx X</div> <div style="background-color: #333; color: #00aaff; padding: 5px; margin: 5px;">UserSET: StallTime: 1 X</div> <div style="background-color: #333; color: #00aaff; padding: 5px; margin: 5px;">UserSET: StallTime: 20X</div> </div>
<p>9</p>	<p>Parameter setting for the 3rd position</p>	<p>This function is accessible only on an actuator with a “B33” option For the TRC-D standard model, the parameter setting is not available.</p> <div style="background-color: #333; color: #00aaff; padding: 5px; margin: 5px;">UserSET: B33Posi: 50%</div>

TCR-02D TIMER ELECTRICAL ACTUATOR

10	The charge of the battery	Parameter which is not used on the TCR-02D standard version
		  
11	Choice of language	English or Mandarin
		 
12	Exiting the menu	Press K3 to exit the menu The system will switch back in the automatic checking mode.
		

IN-BUILT BATTERY

The TCR-02 has an in-built rechargeable Ni-MH (CR) battery which keeps the date and the time when the actuator is not powered. This battery is not used when the actuator is powered. The autonomy of the battery is about 3 months. Past this time, the date and the time have to be updates when switching on the actuator.

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.