

TCR-02-05D TIMER ELECTRICAL ACTUATOR

FEATURES

The TCR-D electric actuator is intended for motorising ¼ turn valves with a torque of 20 or 50 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.

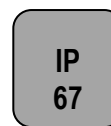
Dual frequency : 50Hz, 60Hz.

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



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

ELECTRICAL FEATURES

Actuator	TCR 02D	TCR 05D
Motor protection	Thermal switch	
Limit switches	Without	
Auxiliary switches	Without	
Anti-condensation	integrated	
Electrical connection	PE M10 + 1.5m cable	PE M20 + 1.5m cable

Actuator	TCR 02D		TCR 05D
Voltage	24V AC - DC	95-265V AC-DC	95-265V AC-DC
Power (W)	15	15	25
Current (A)	0,35	0,035 - 0,075	-
Fuse protection (A)	2	1	2

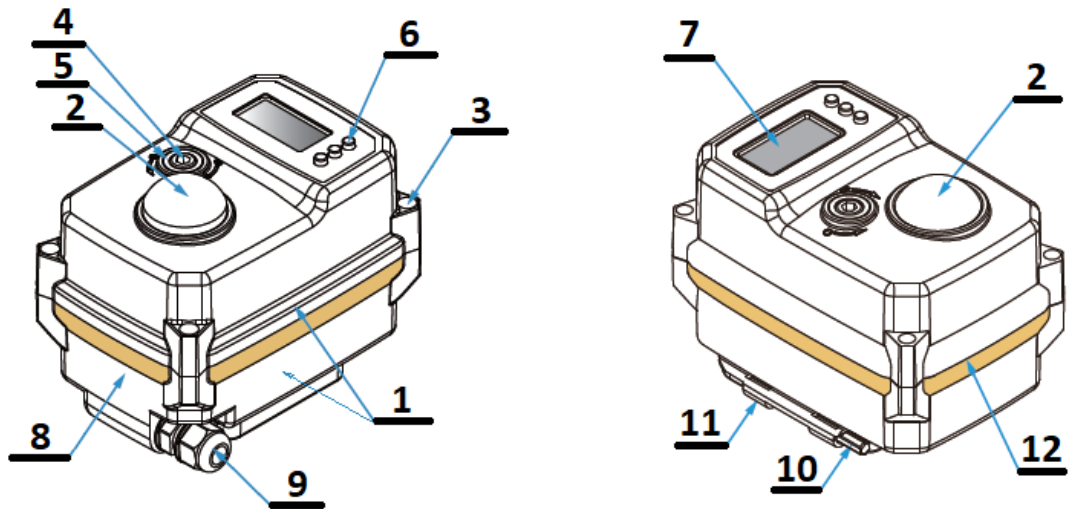
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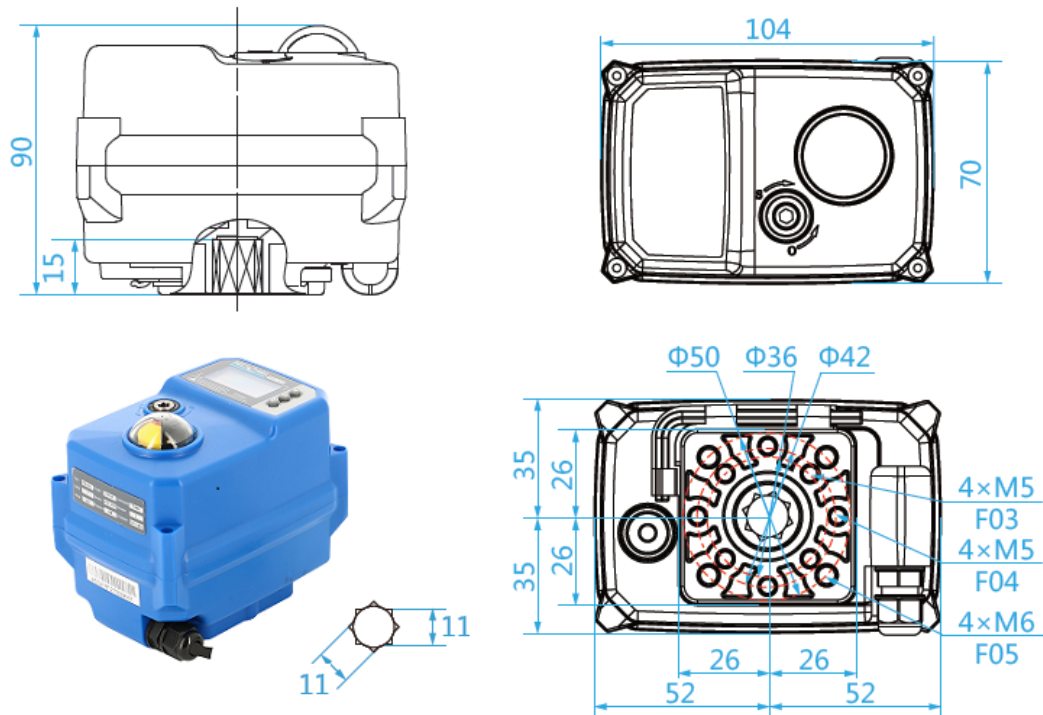
TCR-02-05D TIMER ELECTRICAL ACTUATOR

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)



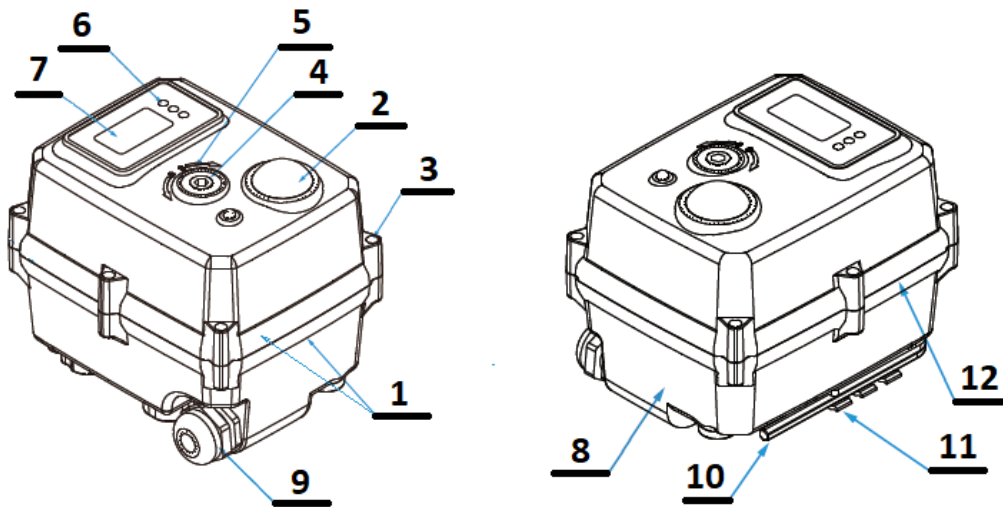
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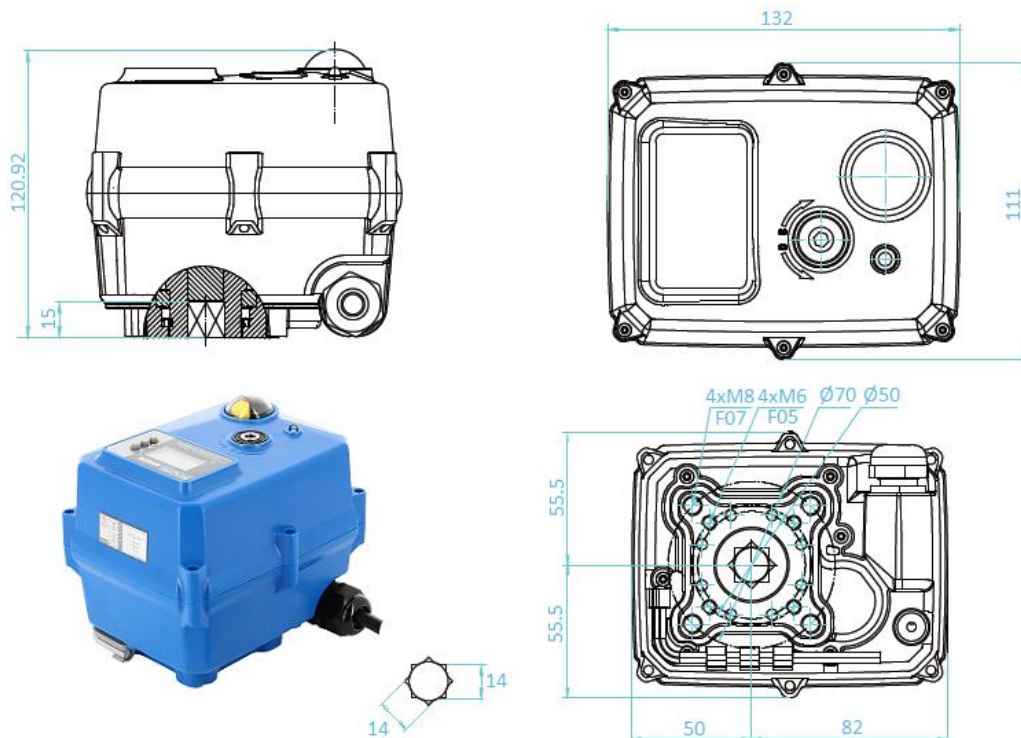
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CONSTRUCTION (TCR-05D)

TCR-05D					
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	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): 1.800					



DIMENSIONS (mm)

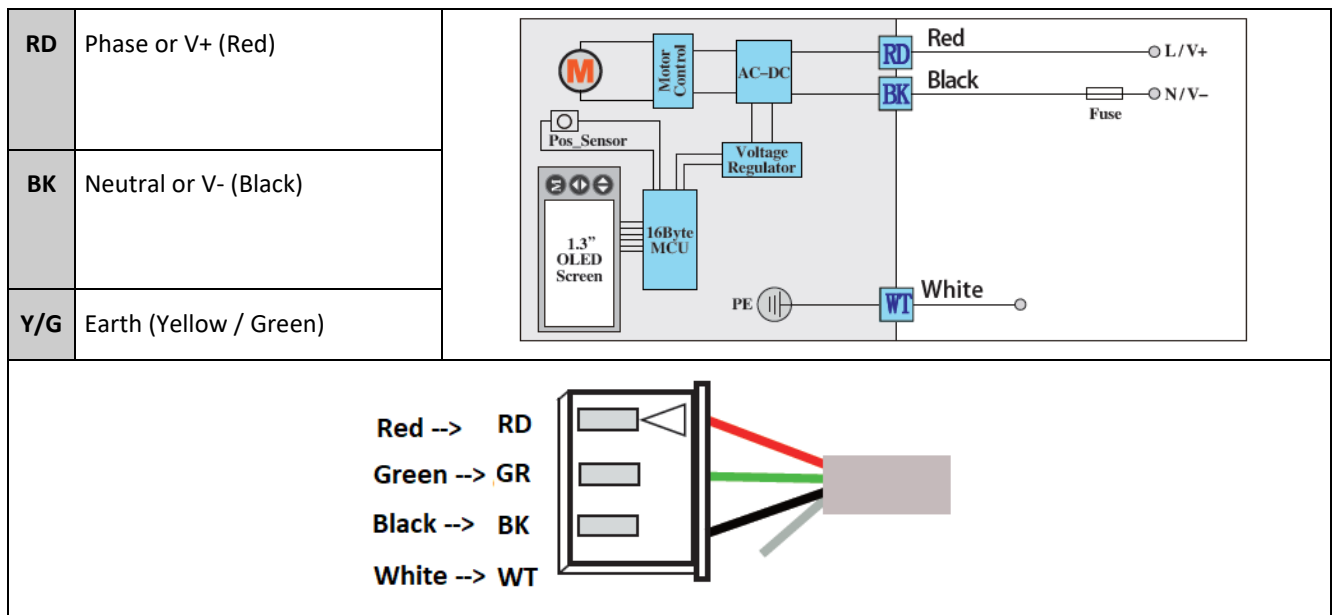


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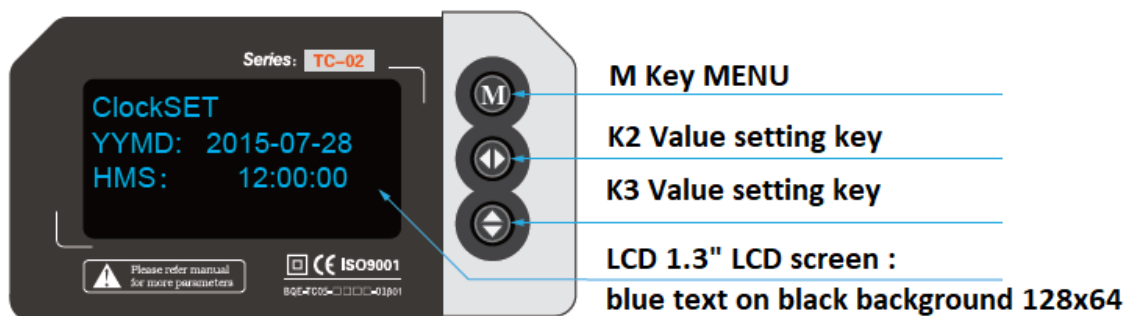
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WIRING DIAGRAM



DESCRIPTION OF THE 1.3" LCD SCREEN

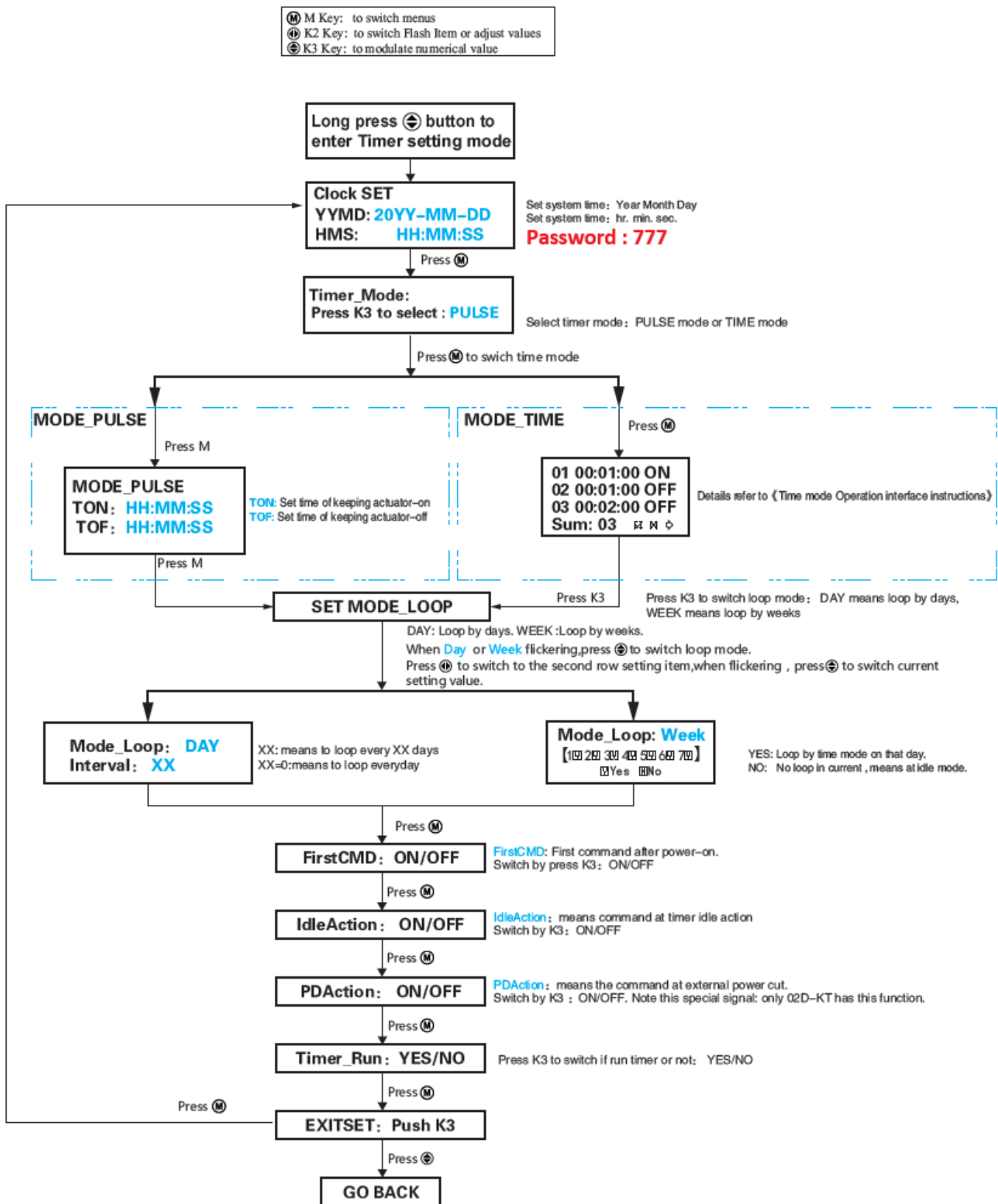


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PARAMETER SETTING MENU OF THE TIMER



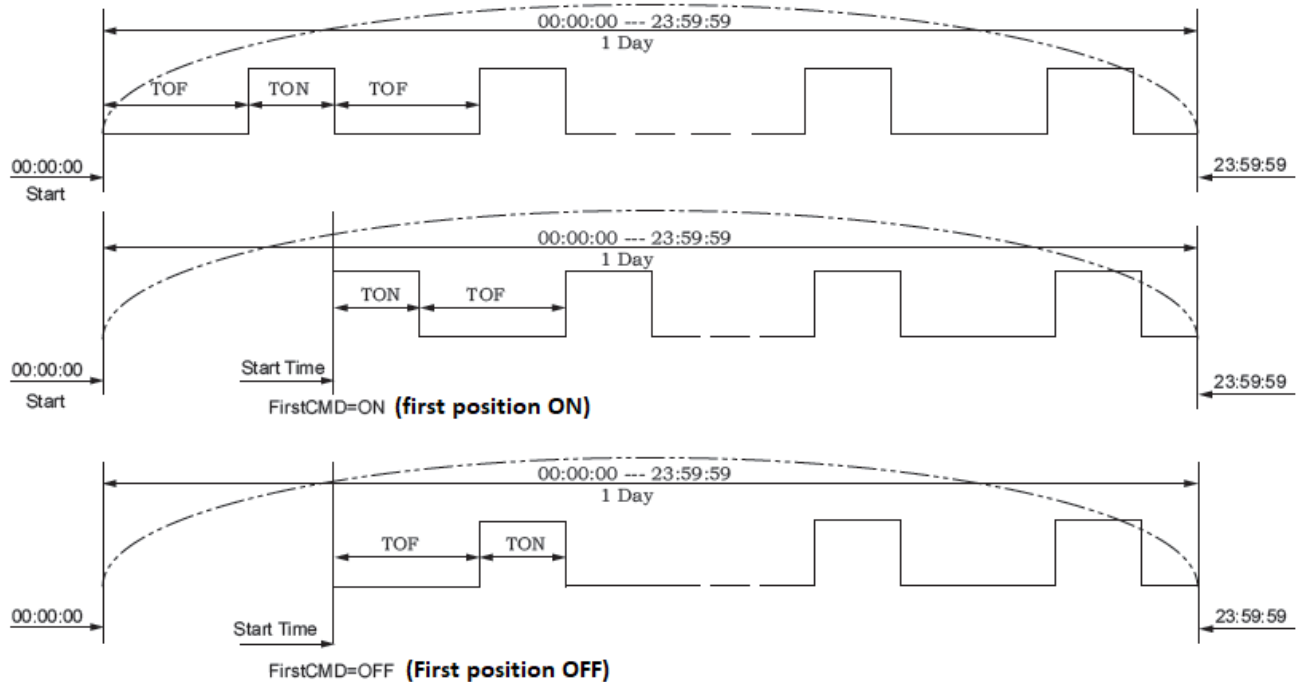
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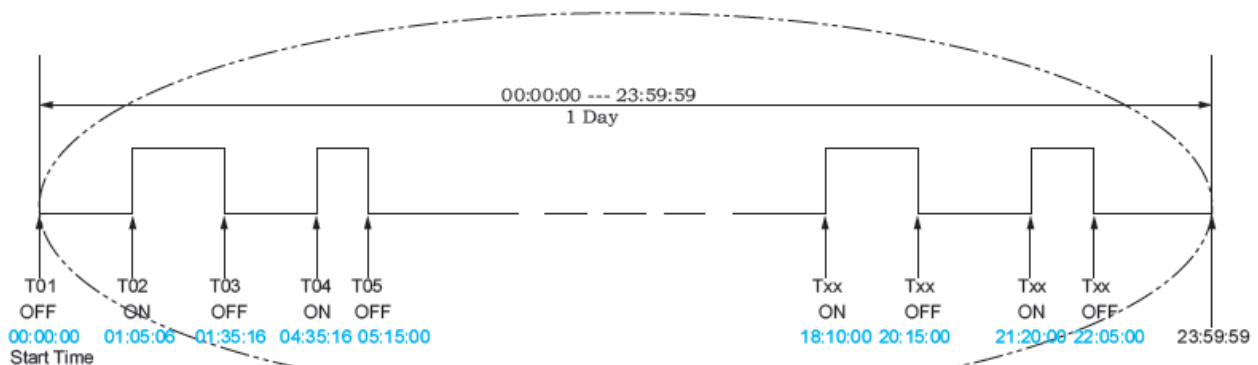
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CHRONOGRAMS

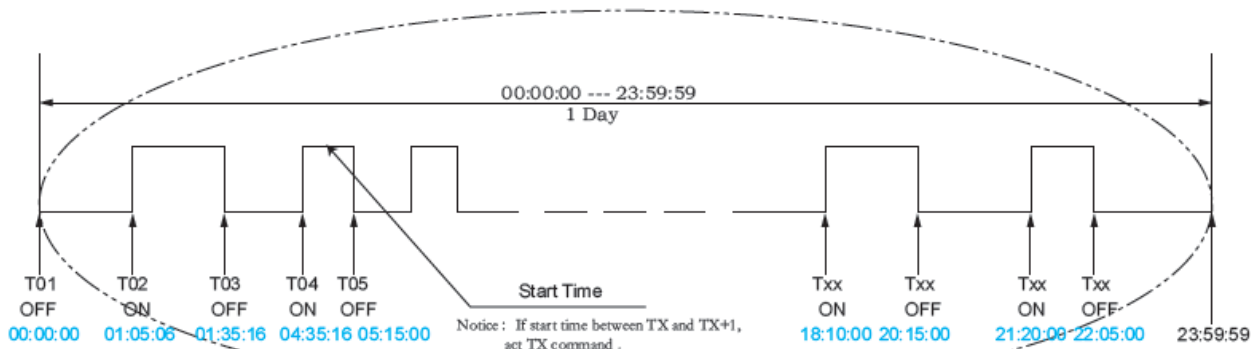
Mode_Pulse



Mode_Time



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



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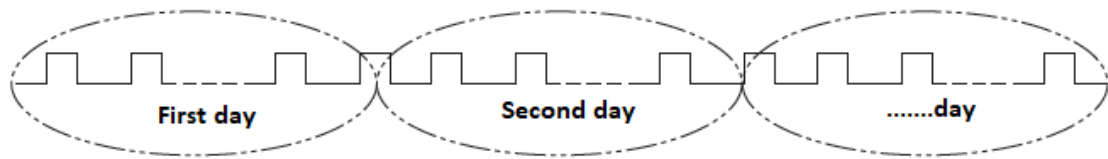
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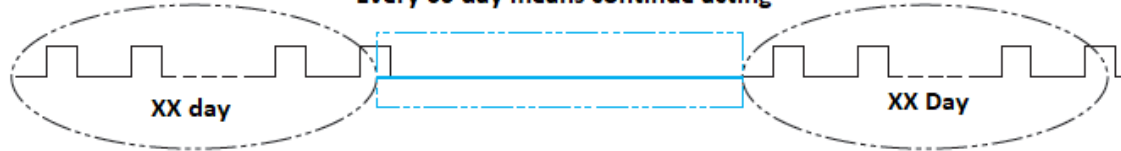
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Loop_Day

Ver: 20161015



Every 00 day means continue acting

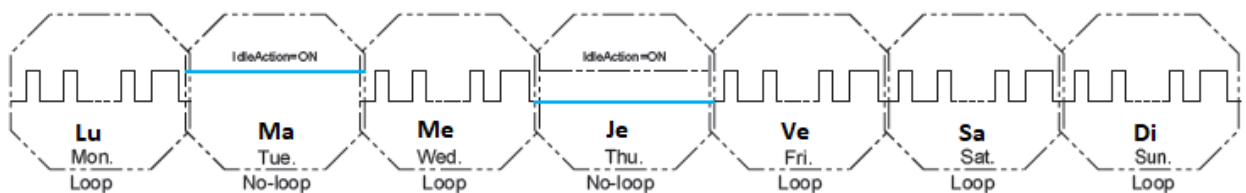
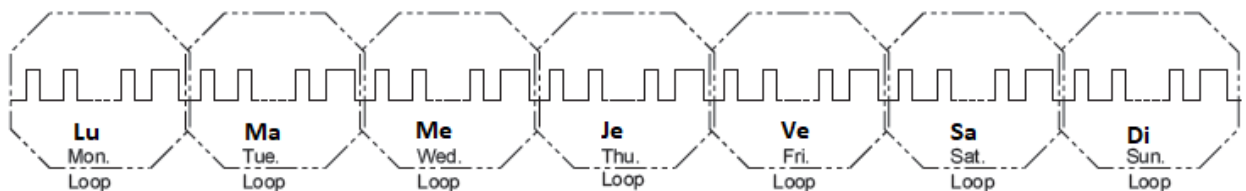


Every XX days : means timer do not loop in blue wireframe
IdleAction = ON



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

Loop_Week :



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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	Press the "M" button for more than 5 s. Enter the code "333" (use the keys K2 and K3) Press again the button "M"
		UserSET: PassWord: XXX
2	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%. Press key M to move to the next parameter.
		UserSET: DeadZone: X.X% UserSET: DeadZone: 9.9% This is maximum UserSET: DeadZone: 0.1% This is minimum
3	Hysteresis value	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.
		UserSET: Hysteres: X.X% UserSET: Hysteres: 0.0% Minimum UserSET: Hysteres: 12.0% Maximum
4	Slight adjustment of the closed position	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.
		UserSET: ClPos_Adj: X.X° UserSET: ClPos_Adj: X.X° Offset-Open UserSET: ClPos_Adj: X.X° Offset-Close UserSET: ClPos_Adj: -X.X° This is minimum UserSET: ClPos_Adj: X.X° This is maximum

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5	Opening/closing time setting	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.
		UserSET: CIPos_Adj: X.X° UserSET: CIPos_Adj: X.X° Offset-Open UserSET: CIPos_Adj: X.X° Offset-Close UserSET: CIPos_Adj: -X.X° This is minimum UserSET: CIPos_Adj: X.X° This is maximum
6	Setting the operating speed	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.
		UserSET: Speed_PUL: XX% UserSET: Speed_PUL: 100% This is maximum UserSET: Speed_PUL: 5% This is minimum
7	Setting the angle of rotation	Parameter which is not used on the TCR-02D standard version
		UserSET: Speed_PWM: 100%
8	Response time	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
		UserSET: StallTime: xx X UserSET: StallTime: 1 X UserSET: StallTime: 20X
9	Parameter setting for the 3 rd position	This function is accessible only on an actuator with a “B33” option For the TRC-D standard model, the parameter setting is not available.
		UserSET: B33Posi: 50%

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10	The charge of the battery	Parameter which is not used on the TCR-02D standard version
		UserSET: BatCharge: XX% UserSET: BatCharge: 60% Minimum UserSET: BatCharge: 99% Maximum
11	Choice of language	English or Mandarin
		UserSET: DisMode: English UserSET: DisMode: Chinese
12	Exiting the menu	Press K3 to exit the menu The system will switch back in the automatic checking mode.
		UserSET: ExitSET: Push K3

IN-BUILT BATTERY

The TCR-D 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.

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