

# 500 HC VALVE WITH TCR ELECTRICAL ACTUATOR

## FEATURES

The brass 2-way ball valve 500 HC+TCR provides the automatic shut-off function for thermally insulated piping for usual fluids: water, air, hydrocarbons, etc. It is a full-bore valve. It is EC- and ACS-approved (French health compliance certificate). The ISO 5211 mounting pad enables the actuator to be directly assembled. The latter is suitable for S4-type service factor, installed indoors or outdoors under shelter. Many options are available.

## AVAILABLE MODELS

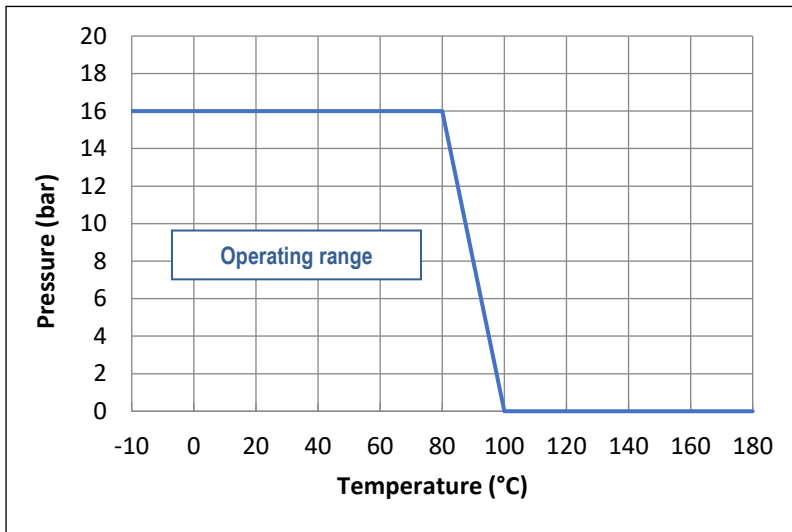
CW 617N brass body.  
1/2" to 2" diameters.  
G thread connections



**Supply voltages:** 24 VAC, 24 VDC and 230 VAC.

## LIMITS OF USE

Fluid pressure: PS	16 bar
Fluid temperature: WT	- 10°C / + 100°C
Ambient temperature	- 10°C / + 60°C
Service factor	S4 - 50 %



## DIRECTIVES AND MANUFACTURING STANDARDS

OBJECT	Standard	ON
Pressure Equipment Directive 2014/68/EC	<b>1/4" to 1"</b> : not subject	
	<b>1"1/4 to 2"</b> : category II	PASCAL 1115
Use for drinking water	A.C.S.	
Connection Motorisation	ISO 5211:	

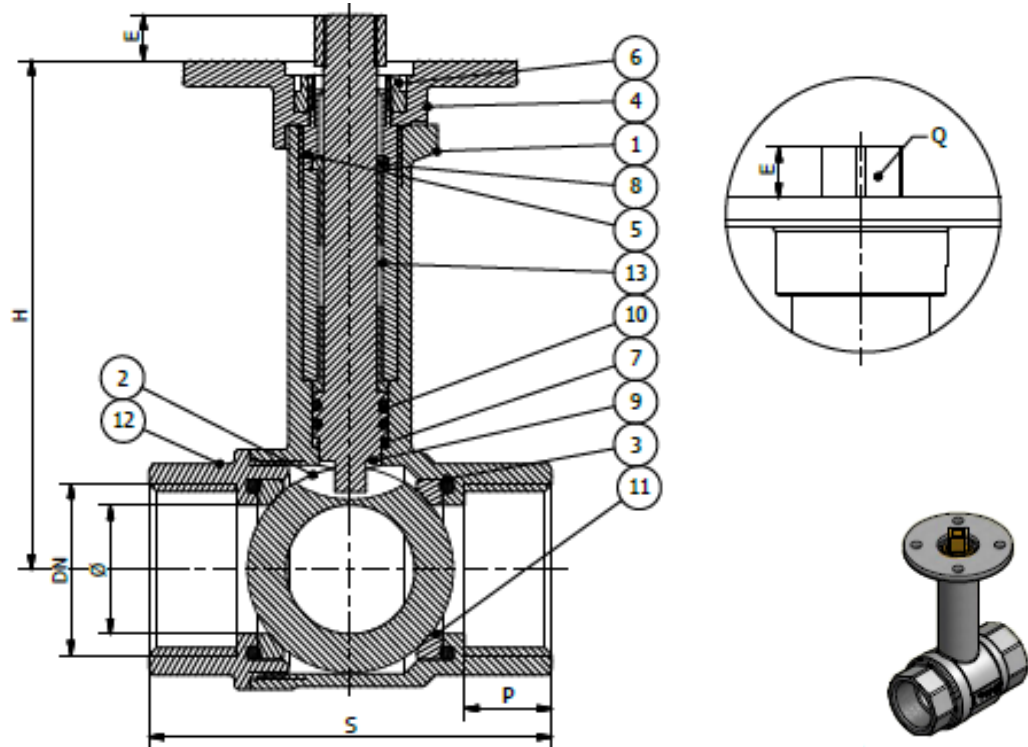
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# 500 HC VALVE WITH TCR ELECTRICAL ACTUATOR

## CONSTRUCTION

No.	Name	Material	No.	Name	Material
1	Body	Nickel-plated CW 617N brass	7	Anti-friction ring	PTFE
2	Ball	Chromium-plated CW 614 brass	8	Anti-friction coupling	PTFE
3	O-ring	NBR	9	Stem	CW 614N brass
4	Motorisation flange	Nickel-plated CW 617N brass	10	O-ring	FPM
5	Nut	CW 614N brass	11	Seat	PTFE
6	Nut	CW 614N brass	12	End	Nickel-plated CW 617N brass
			13	Guiding ring	CW 614N brass



## DIMENSIONS (mm)

DN	1/2"	3/4"	1"	1"1/4	1"1/2	2"
Ø	15	20	25	32	39	48
S	56	68	78	90	100	115
P	14	16	17	18	19	21
H	89	92	98	108	114	131
E	8	8	8	10	10	10
Q	11	11	11	11	11	11
ISO	F05	F05	F05	F05	F05	F05

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# 500 HC VALVE WITH TCR ELECTRICAL ACTUATOR

## TCR ELECTRICAL MOTORISATION

The TCR motorisation proposed as standard comprises:

- IP65 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: <b>TRC02:</b> 1 x PE M10 + 1.5m cable <b>TCR05:</b> 1 x PE M20 + 1.5m cable <b>TCR11:</b> 2 x PE M14 + 1.5m 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	25	12s	12s	
1" 1/2	TCR-02N	25	12s	12s	
2"	TCR-02N	25	12s	12s	

For any other operating conditions, please contact us.

\* indicative time for actuator running empty

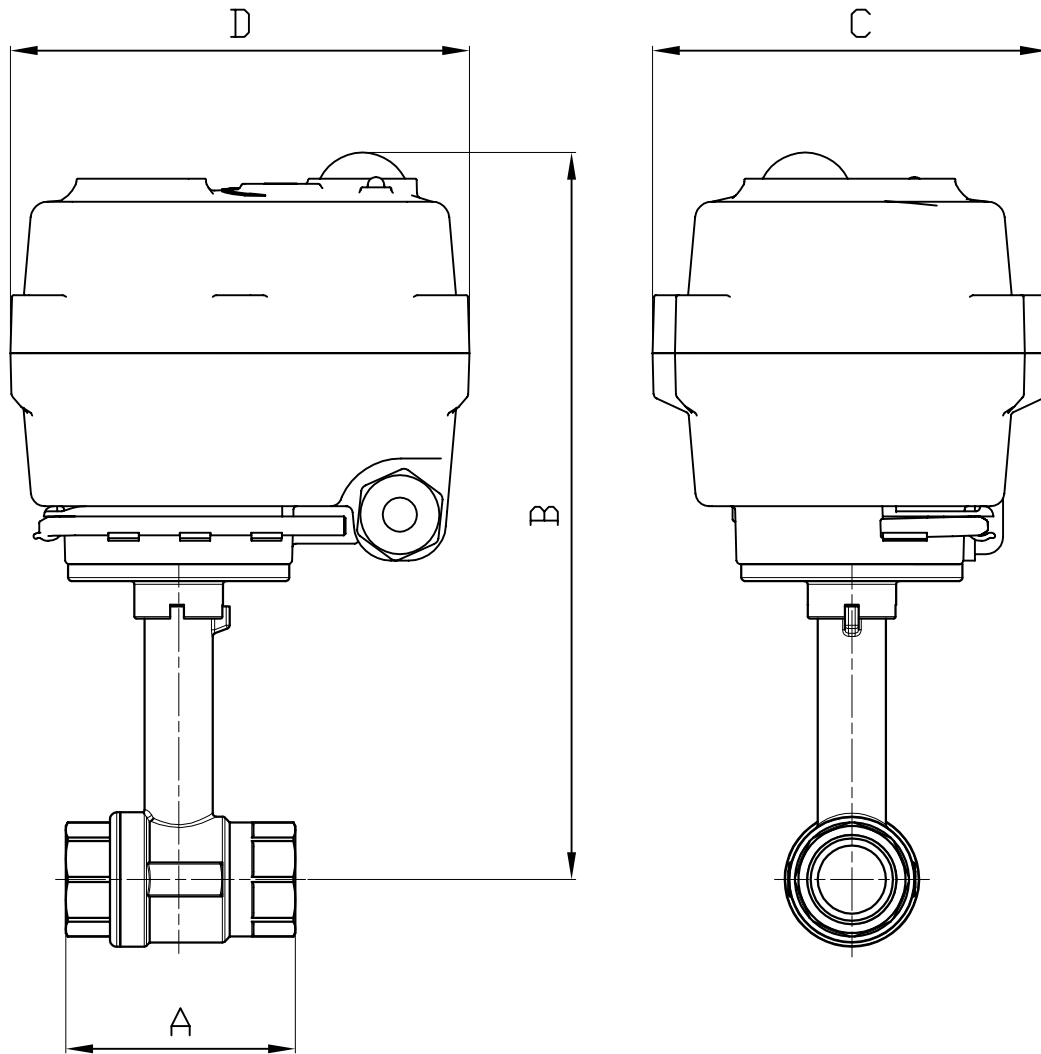
## MOTORISATION OPTIONS

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

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

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DN	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
SERVO	TCR02	TCR02	TCR02	TCR02	TCR02	TCR02
A	56	68	78	90	100	115
B	179	182	188	198	204	221
C	70	70	70	70	70	70
D	104	104	104	104	104	104
KG	1.12	1.25	1.5	1.92	2.22	2.92

# TCR-N ELECTRICAL ACTUATOR

## FEATURES

The TCR-N electric actuators are intended for motorising ¼ turn valves with a torque of 15, 20, 50, 110, 200 or 400 Nm. With a compact construction and plastic housing, they are especially well suited for motorising ball valves and butterfly 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.

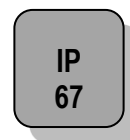


## LIMITS OF USE

IP Code	IP 67
Ambient temperature	- 20°C / +60°C
Service factor	S4 - 50% (TCR 02-05-11)
	S3 - 85% (TCR 20-40)

## MECHANICAL FEATURES

Gear box	treated steel pinions
Torques	15 - 20 - 50 - 110 - 200 - 400 Nm
Angle of rotation	90° +/- 2°
Declutching	Without (TCR 02-05-11)
	With (TCR 20-40)
Override control	By key



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

Actuator	TCR 11N			TCR 20N			TCR 40N		
	Torques (Nm)	110			200			400	
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)	10	10	10	25	25	25	25	25	25
ISO 5211:	F05/F07 - star 17			F07/F10 - star 22			F07/F10 - star 22		

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# TCR-N ELECTRICAL ACTUATOR

## ELECTRICAL FEATURES

Actuator	TCR 02N	TCR 05N
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

Actuator	TCR 02N			TCR 05N		
Voltage	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
Current (A)	1,5	1,5	0,09	1,67		0,18 - 0,37
Fuse Protection (A)	5	5	1	8		1 - 2

Actuator	TCR 11N	TCR 20N	TCR 40N
Motor protection	Thermal switch		
Limit switches	2 adjustable switches		
Auxiliary switches	2 adjustable dry switches		
Anti-condensation	Integrated		
Electrical connection	2 x PE M14 + 1,5m cable	2 x PE M20 + 1.5m cable	2 x PE M20 + 1,5m cable

Actuator	TCR 11N			TCR 20N			TCR 40N		
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)	100	100	100	50	50	50	80	80	80
Current (A)	2,5		0,3 – 0,6	2		0,22	3,3		0,36
Fuse Protection (A)	5		2 - 3	3		5	8		2

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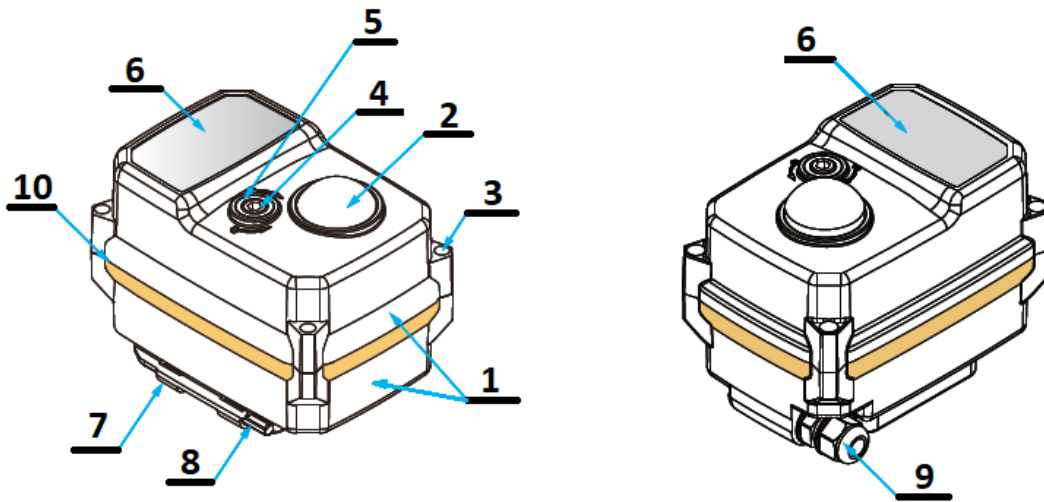


# TCR-N ELECTRICAL ACTUATOR

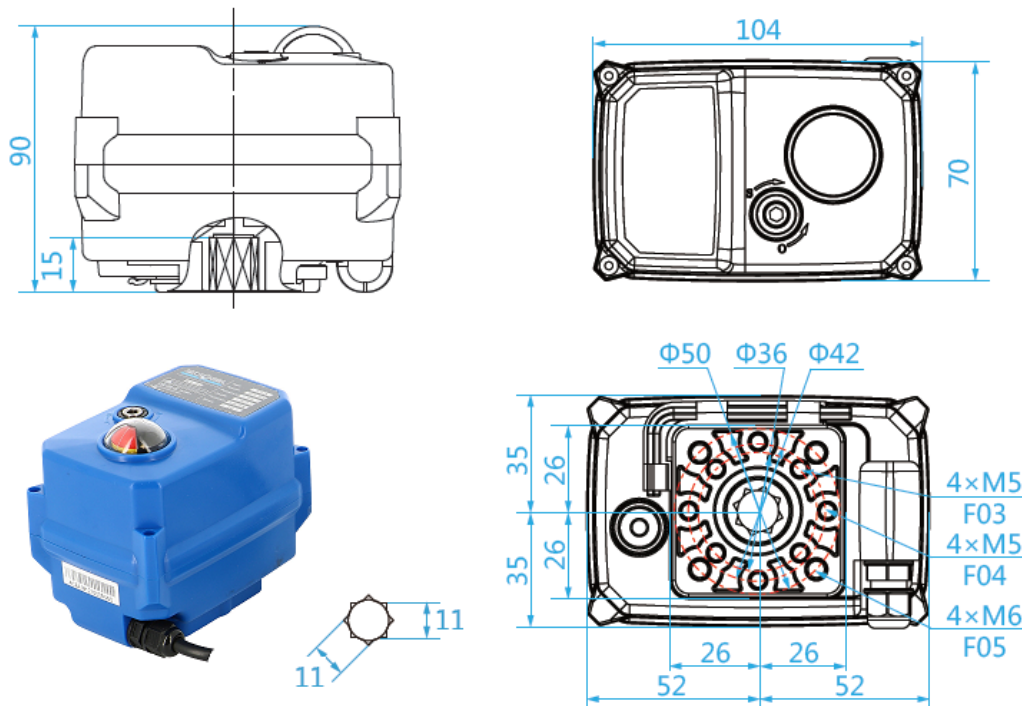
## CONSTRUCTION (TCR-02N)

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)



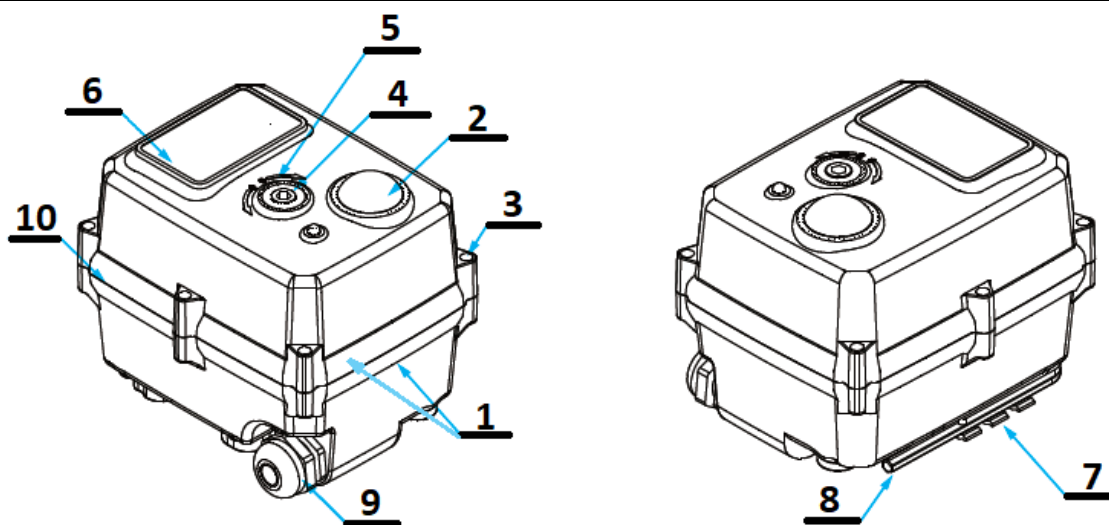
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# TCR-N ELECTRICAL ACTUATOR

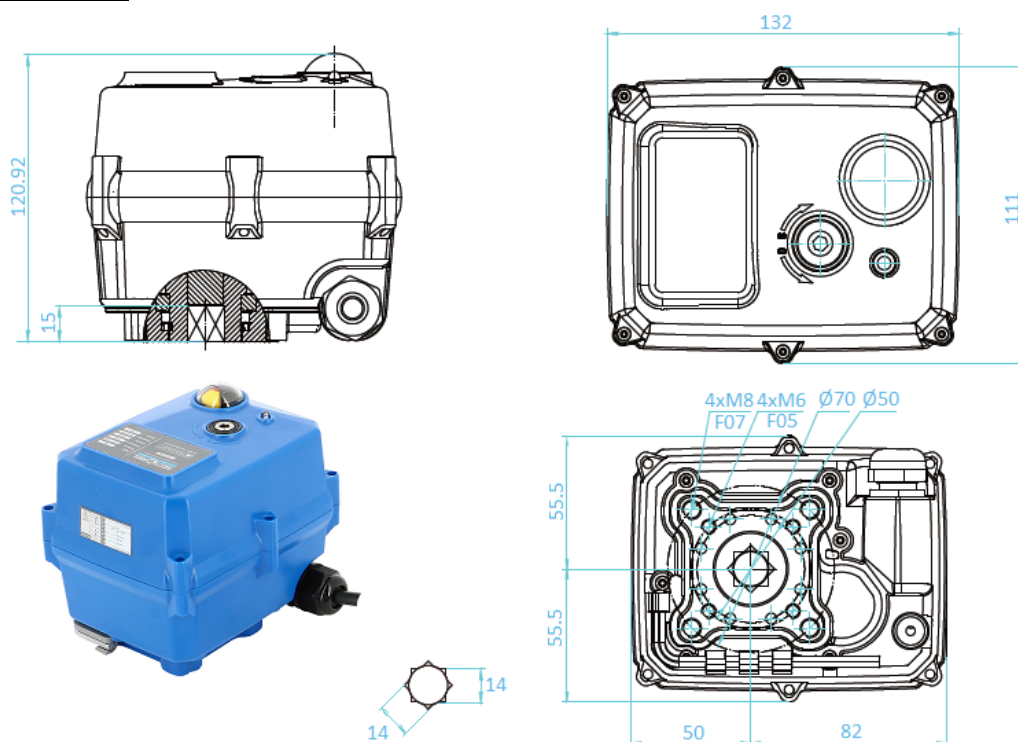
## CONSTRUCTION (TCR-05N)

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)



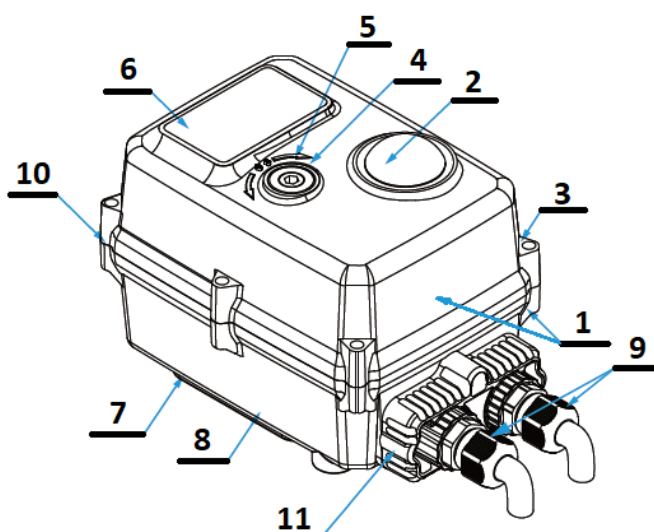
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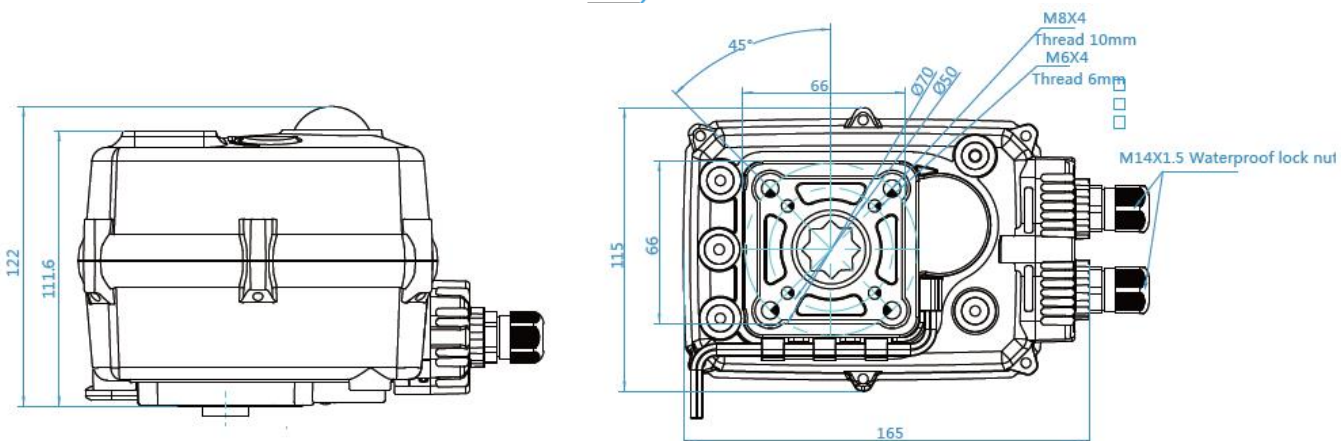
# TCR-N ELECTRICAL ACTUATOR

## 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)

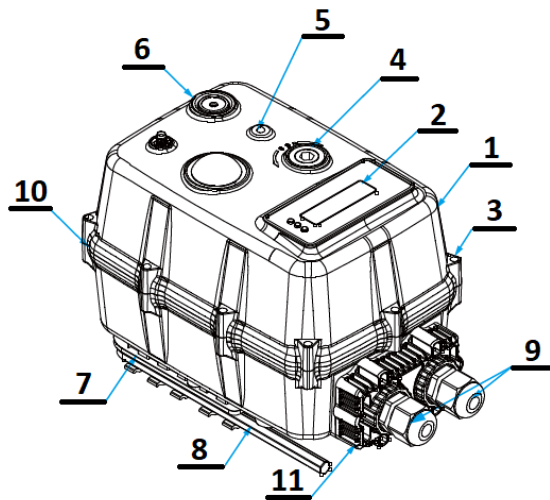


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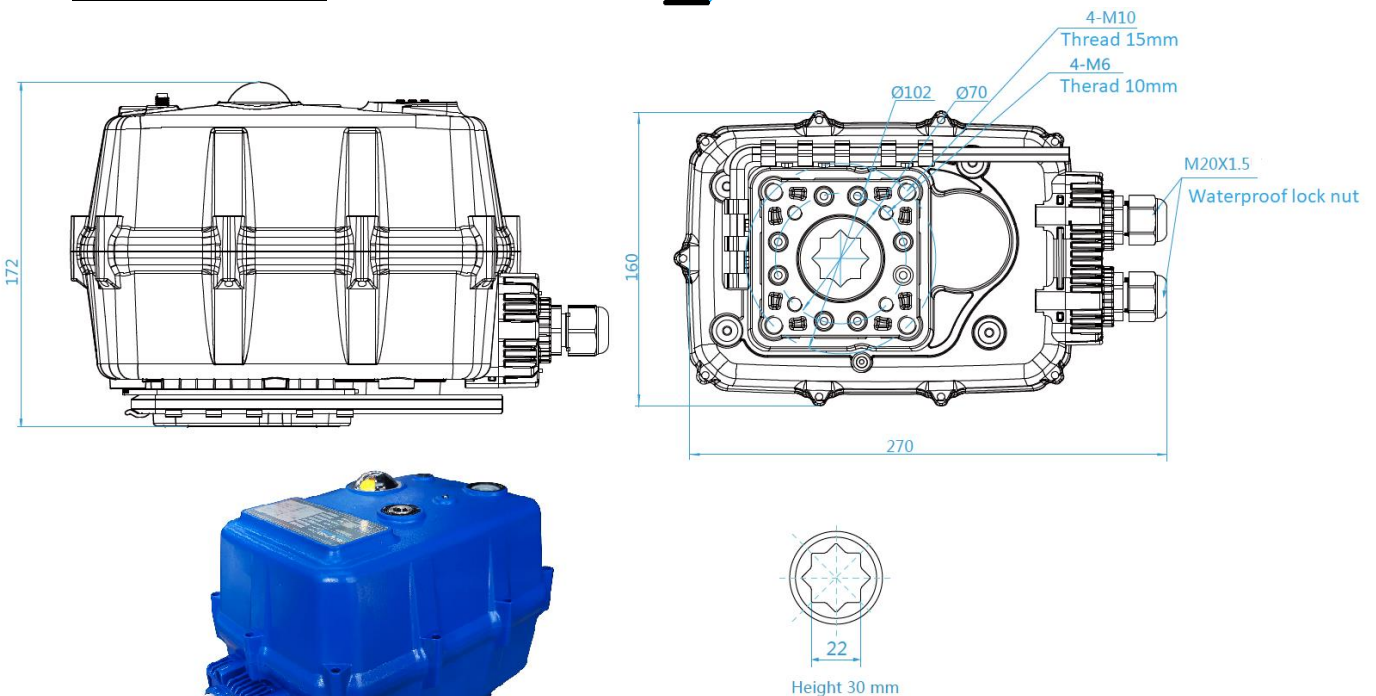
# TCR-N ELECTRICAL ACTUATOR

## CONSTRUCTION (TCR-20N / TCR-40N)

TCR-20N / TCR-40N					
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



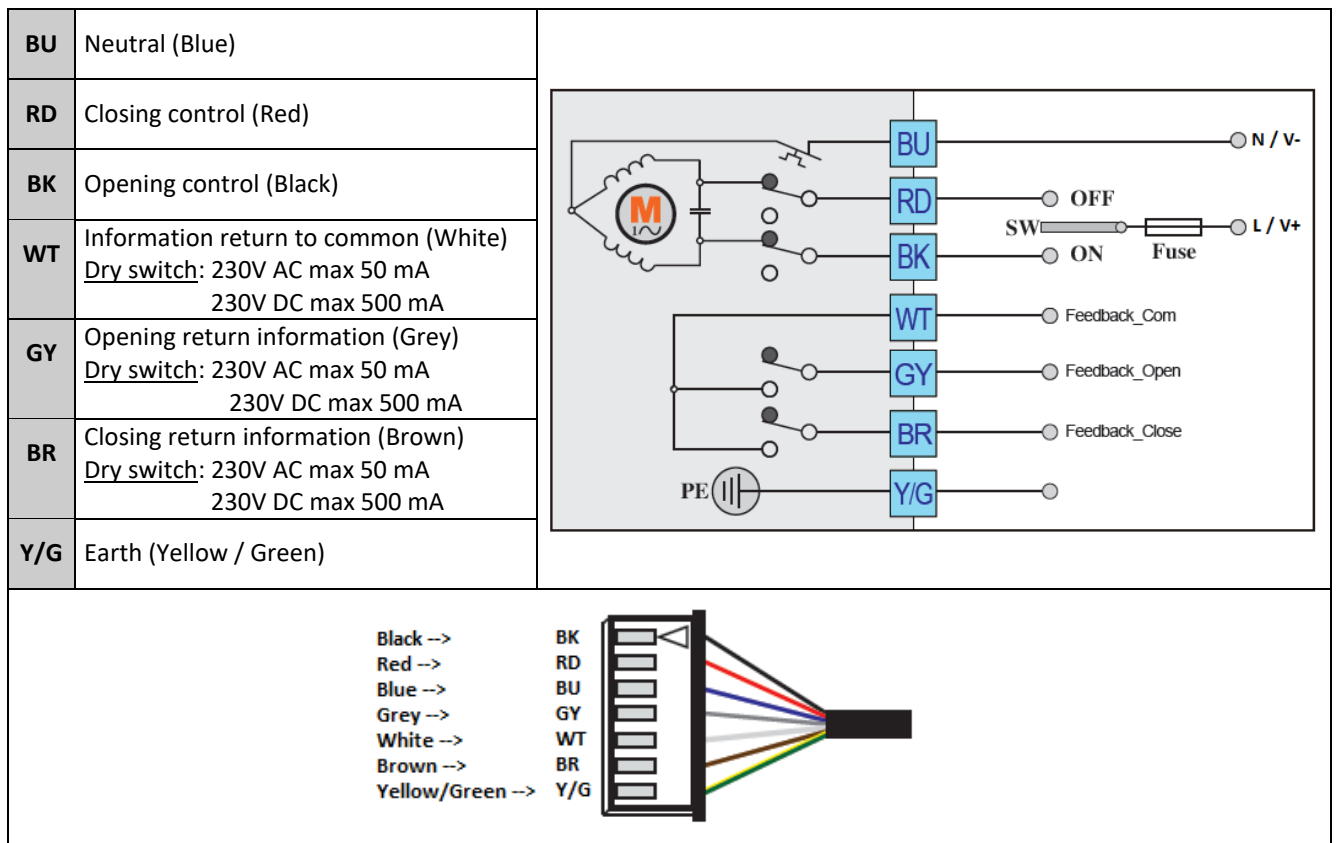
## DIMENSIONS (mm)



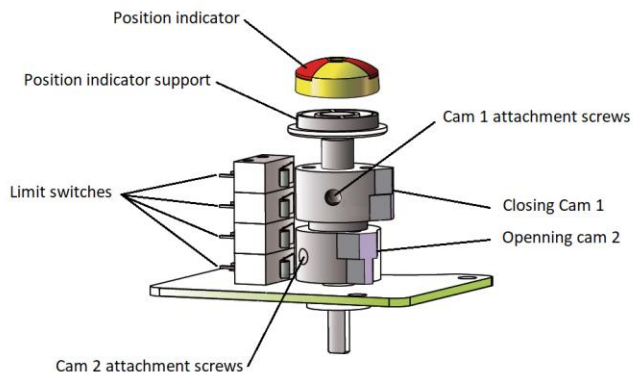
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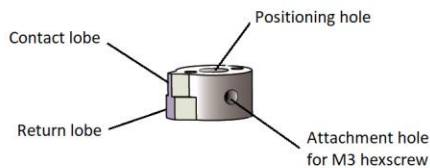
## WIRING DIAGRAM



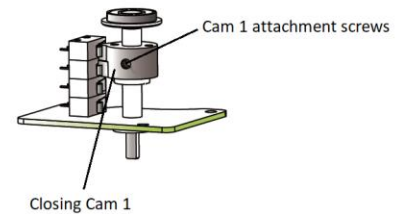
## SWITCH SETTING



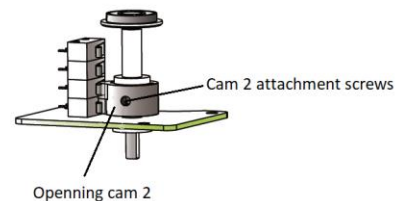
**GENERAL VIEW**



**CAM DETAIL**



**CLOSING CAM ADJUSTMENT**



**OPENING CAM ADJUSTMENT**

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# 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.

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