

PL1 VALVE WITH TCR ELECTRIC ACTUATOR

FEATURES

The PL2 butterfly-valves are wafer-style valves intended for current valve applications automatic fluid disconnection. This PN10 butterfly-valve of reinforced polypropylene is used to isolate low-pressure water, acid or alkaline* fluid networks. The materials used are anti-UV coated. The valve has an ISO 5211 mounting pad for the direct mounting of the TCR actuator. The latter is suitable for S3-S4-type service factor, installed indoors or outdoors under shelter.

(*Cf. Sectoriel's table of resistance of materials)



AVAILABLE MODELS

PVC-U or PP body, PP-GF butterfly, EPDM or FPM liner.

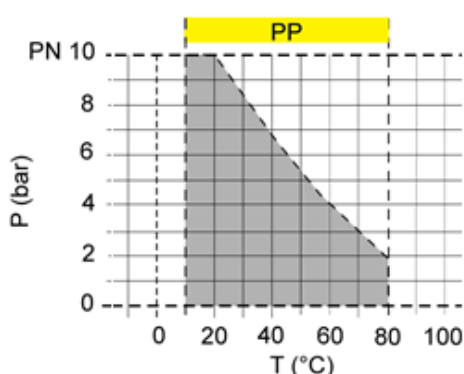
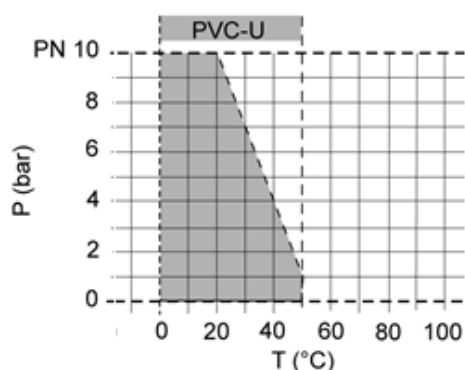
DN40 to DN350 diameters.

Connection between EN1092-1 PN10 flanges.

Supply voltages : 12V dc, 24V ac-dc and 230V ac.

LIMITS OF USE

Fluid pressure : PS	10 bar
Fluid temperature : WT°	See tables
Ambiant temperature	- 20°C / + 60°C
Service factor	S4 - 50%
	S3 - 85% (TCR 40N)



DIRECTIVES AND MANUFACTURING STANDARDS

OBJET	Standard	ON	OBJET	Standard
Pressure Equipment 2014/68/EC	DN40 to 350 : Category I		Connection Motorization	ISO 5211
Flange dimensions	EN 1092-1			
Final test	EN 12266			

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



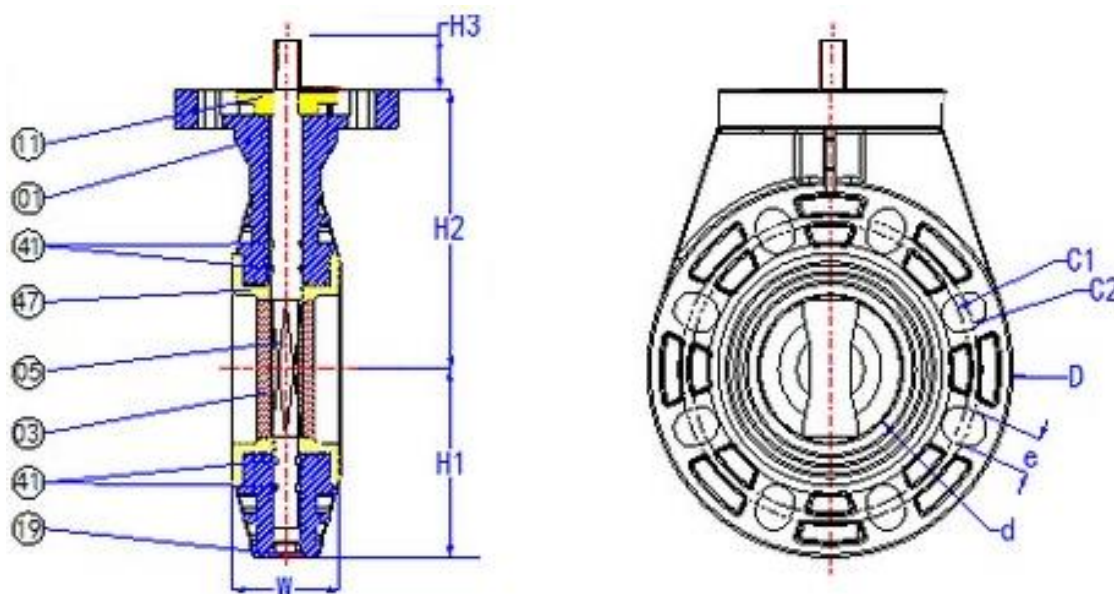
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Rev.	06
Date	09/2025

PL1 VALVE WITH TCR ELECTRIC ACTUATOR

DIMENSIONS (mm)

DN	d	C1	C2	H1	H2	H3	D	W	e
40	40	98	110	74	114	15	148	34	19
50	52	120	1250	81	124	15	162	44	19
65	66	140	145	89.5	129	19	179	46	19
80	78.5	150	160	97.5	145	18	195	57	19
100	104	175.5	190.5	112.5	160	19	225	60	19
125	127	210	216	127.5	175	16	255	66	23
150	151	240	241	140	190	20	280	72	23
200	200	290	298	172.5	219.5	25	340	82	23
250	251	350	362	205	257	-	410	92	25
300	290	400	431.5	242.5	302	-	485	98	25




CONSTRUCTION

n°	Item	PL1 PVC-U	PL1 PP
01	Body	PVC-u	PP
03	Butterfly	PP-GF	PP-GF
05	Stem	Stainless steel 1.4301	Stainless steel 1.4301
11	Stem ring	PVC-u	PP
19	Plug	PP	PP
41	O-ring	EPDM / FPM	EPDM / FPM
47	Liner	EPDM / FPM	EPDM / FPM

FLOW-RATE COEFFICIENT Kv (m³/h)

DN	40	50	65	80	100	125	150	200	250	300
Kv	70	87,6	123	201	372	663,6	939	2349	Consult us	

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PL1 VALVE WITH TCR ELECTRIC ACTUATOR

TCR ELECTRICAL MOTORIZATION

The TCR motorization proposed as standard extends to:

- IP67 epoxy plastic housing for actuator and steel gear box.
- safety coefficient of 1.3 minimum compared to the nominal torque of the valve.
- 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 ca	Time 24 V ca-cc	Standard equipment of the actuator
40	TCR-05N	25	12s	12s	2 adjustable limit switches 2 dry auxiliary contacts Thermal protection of the motor Regulated 2-3W anti-condensation heater Stand-by manual control with key 3D Visual Position Indicator Electrical connection : TCR05 : 1 x PE M20 + 1,5 cable TCR11 : 2 x PE M14 + 1,5 cable TCR40 : 2 x PE M20 + 1,5 cable
50	TCR-05N	25	12s	12s	
65	TCR-05N	25	12s	12s	
80	TCR-05N	25	12s	12s	
100	TCR-05N	25	12s	12s	
125	TCR-11N	100	10s	10s	
150	TCR-11N	100	10s	10s	
200	TCR-11N	100	10s	10s	
250	TCR-40N	80	25s	25s	
300	TCR-40N	80	25s	25s	

For any other operating conditions, please contact us.


* indicative time for actuator running empty

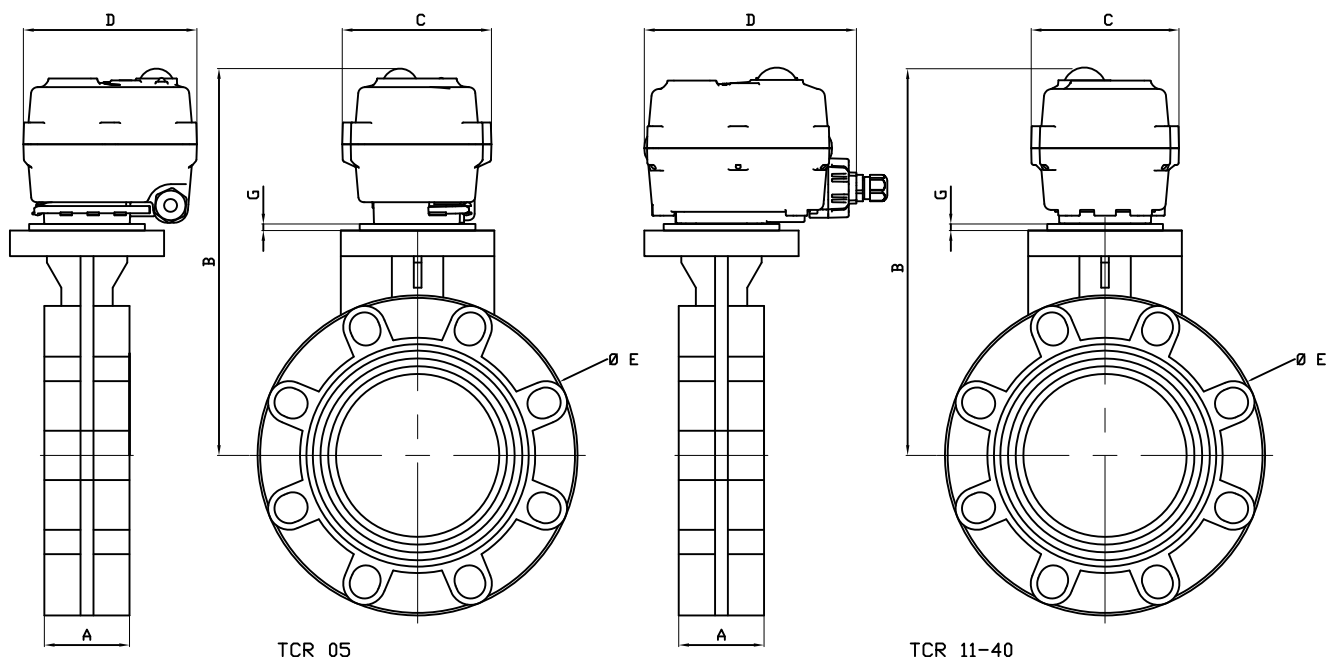
MOTORIZATION OPTIONS

There are many options for which you are invited to contact our sales service:

1	NF actuator – return via condenser – TCR-KT32
2	High-speed actuator - TRC-NH
3	Smart actuator with manoeuvring time adjustment - TCR-C
4	Control actuator – TCR-T
5	NF control actuator – return via condenser – TCR-T-KT32
6	Field bus actuator - TCR-B
7	Actuator with in-built timer – TCR-D
8	Wireless actuator – TCR-R


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DN	40	50	65	80	100
SERVO	TCR05	TCR05	TCR05	TCR05	TCR05
A	34	44	46	57	60
B	235	245	255	271	286
C	111	111	111	111	111
D	132	132	132	132	132
ØE	148	162	179	195	225
G	-	-	5	5	5
KG	2.7	2.7	3.21	3.41	3.71
DN	125	150	200	250	300
SERVO	TCR11	TCR11	TCR11	TCR40	TCR40
A	66	72	82	92	98
B	302	317	377	434	519
C	115	115	115	160	160
D	165	165	165	270	270
ØE	255	280	340	410	485
G	5	5	35	5	45
KG	6.81	7.31	10.8	22.5	31.1

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

				Ajout DN200-250	29/03/2021	A
Ech: /	Date : 24/01/2020	Dessiné par : E.D.	Tolérances générales : +/- 0.2	Modifications	Date	REV.
ROBINET A PAILLON PL1/BUTTERFLY VALVE PL1 + SEVOMOTEUR TCR/ELECTRIC ACTUATOR TCR				Matière :		
				Poids (Kg) :		
				Traitement : SANS		
				45, Rue du Ruisseau		
				38297 SAINT QUENTIN FALLAVIER		
				Plan n° Ens 1416A		

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.

Dual frequency : 50Hz, 60Hz.

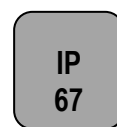


LIMITS OF USE

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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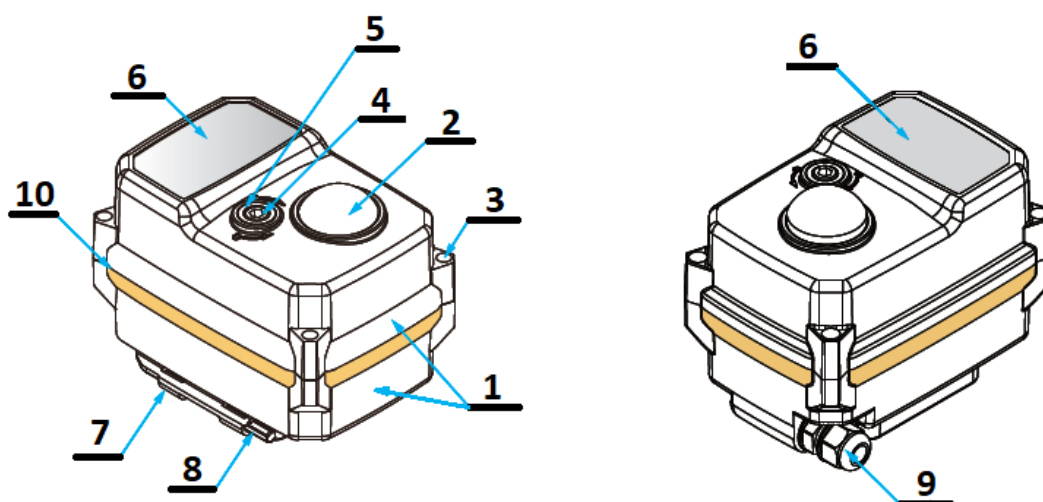
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TCR-N ELECTRICAL ACTUATOR

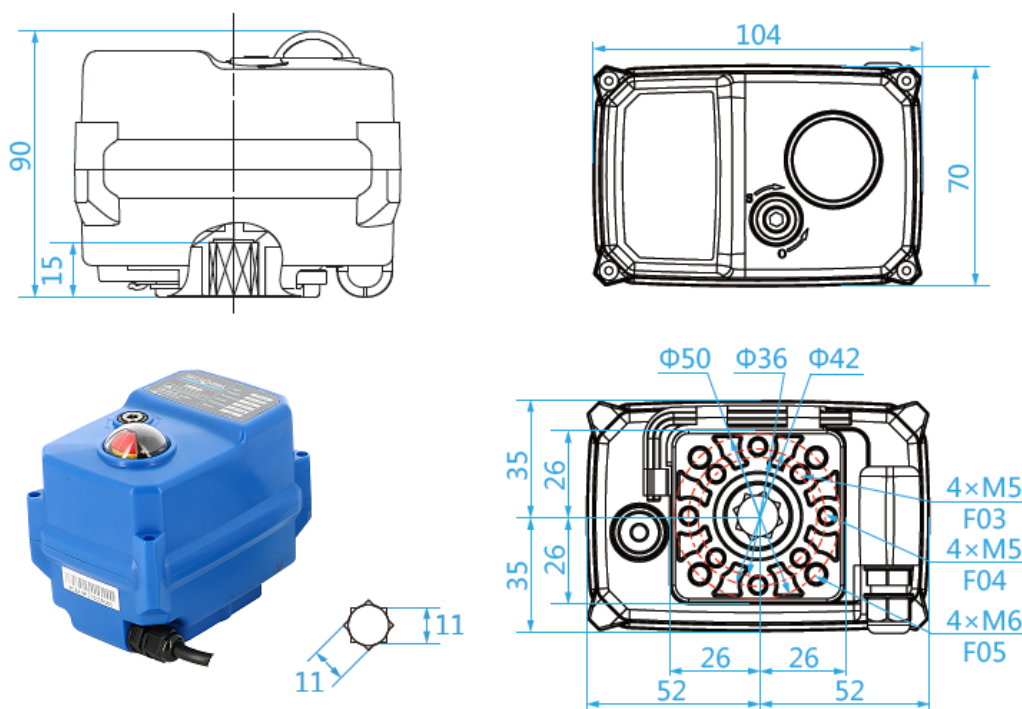
CONSTRUCTION (TCR-02N)

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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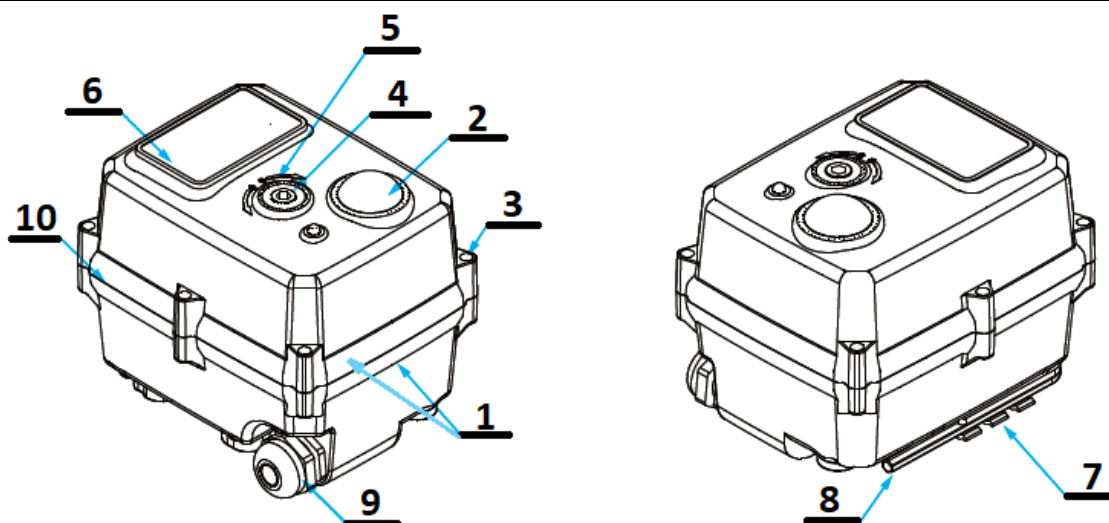
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TCR-N ELECTRICAL ACTUATOR

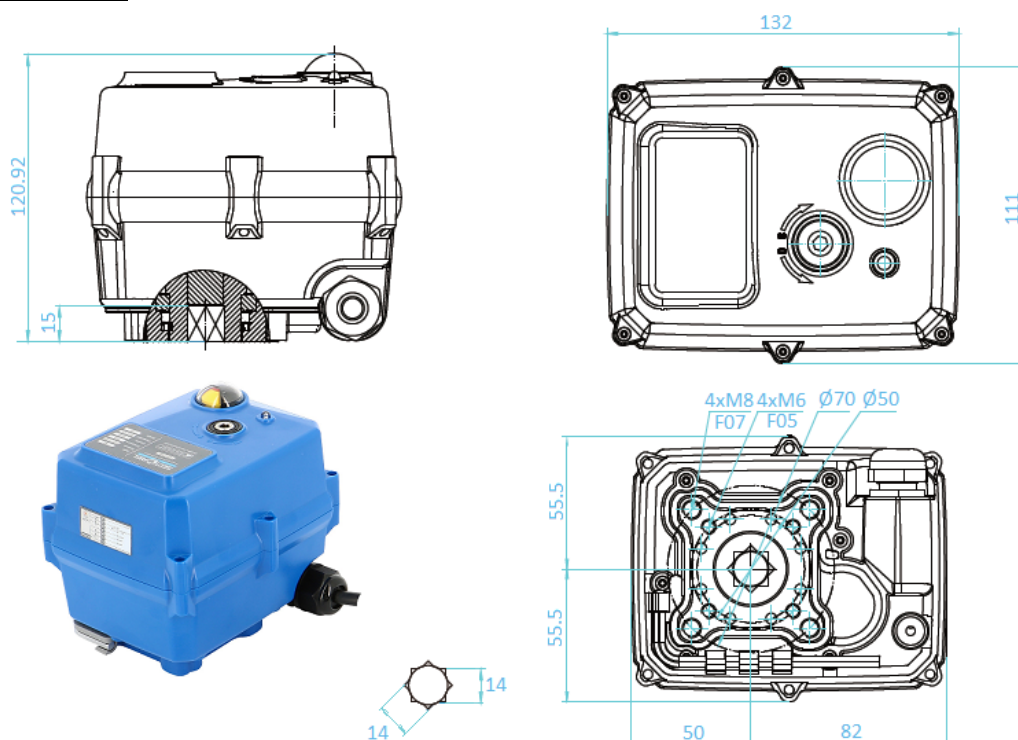
CONSTRUCTION (TCR-05N)

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)



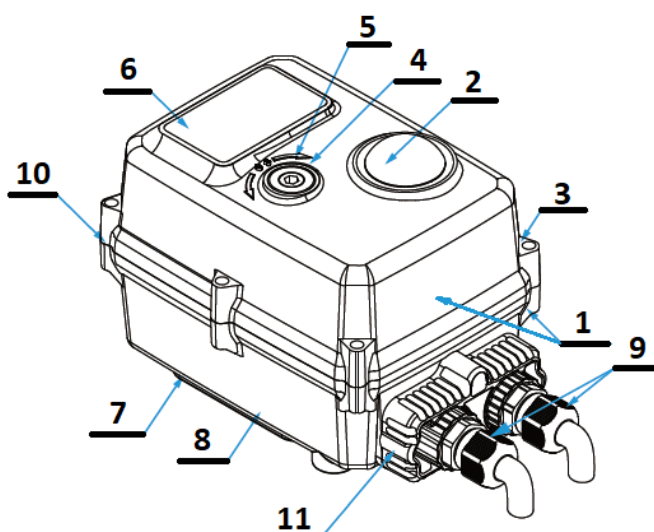
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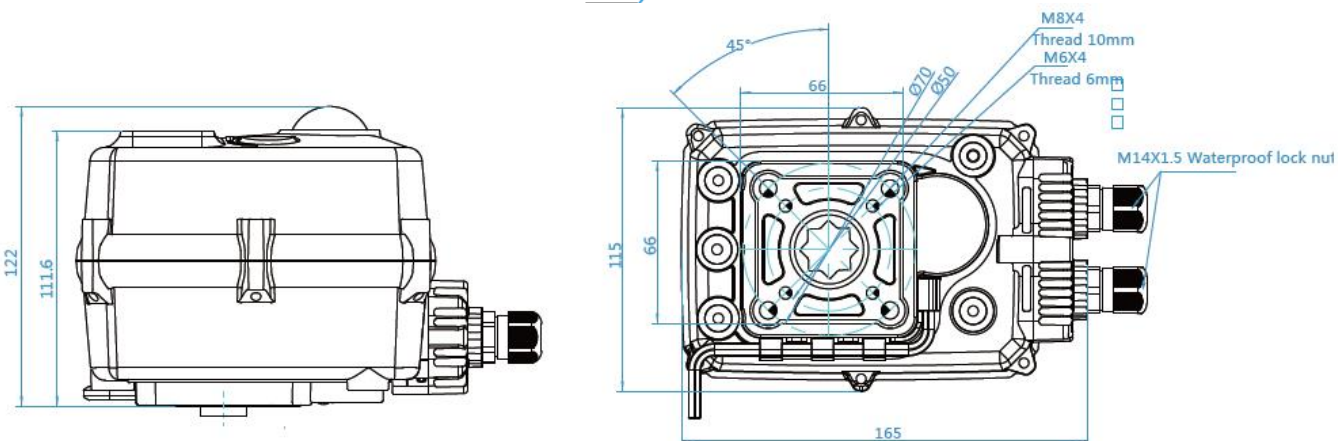
TCR-N ELECTRICAL ACTUATOR

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 2 Packing gland	Nylon
5	Gasket	NBR	10	Cover gasket	NBR
Weight (kg): 2.200			11	Cable gland unit	Plastic (ABS)



DIMENSIONS (mm)



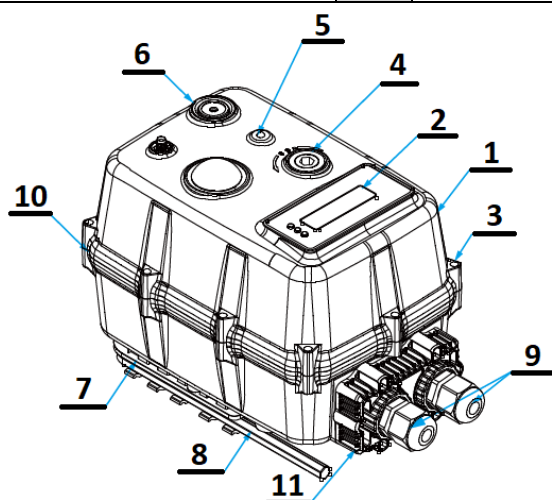
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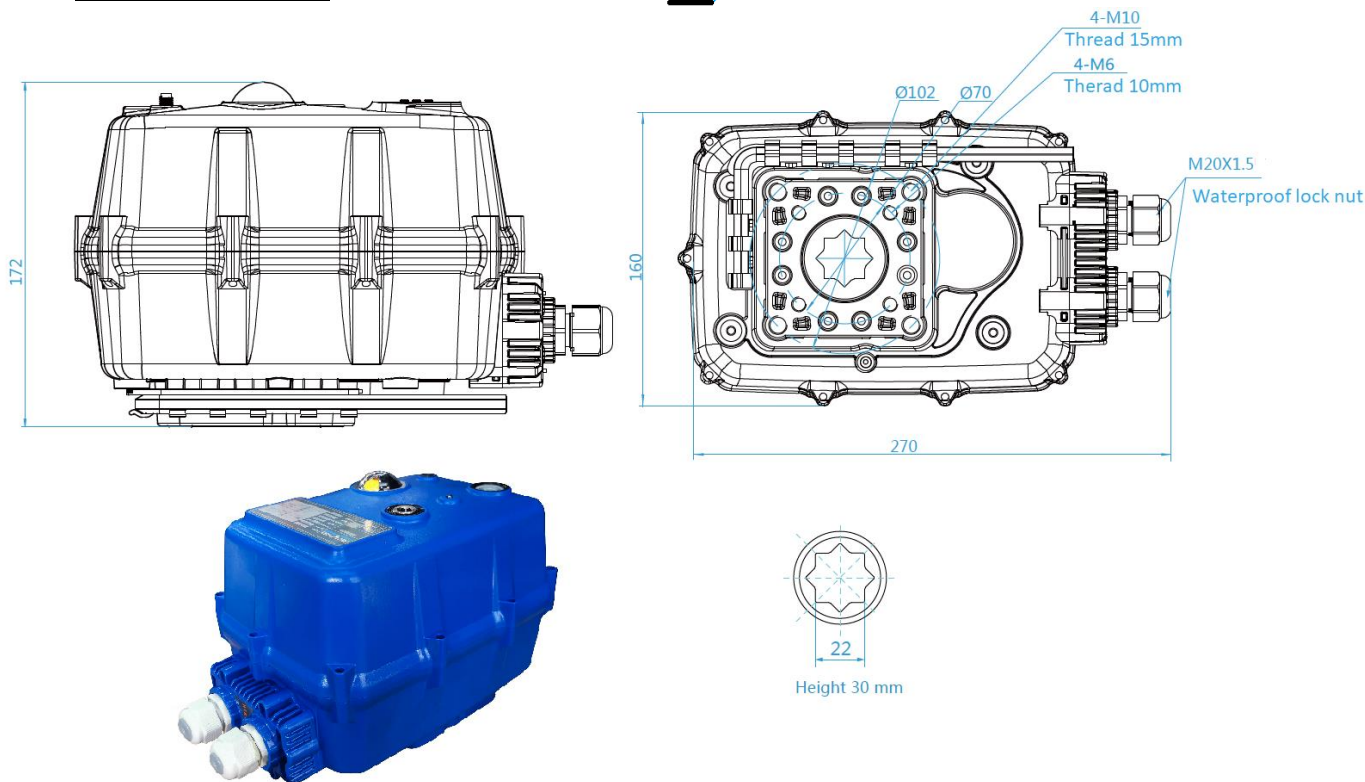
TCR-N ELECTRICAL ACTUATOR

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)

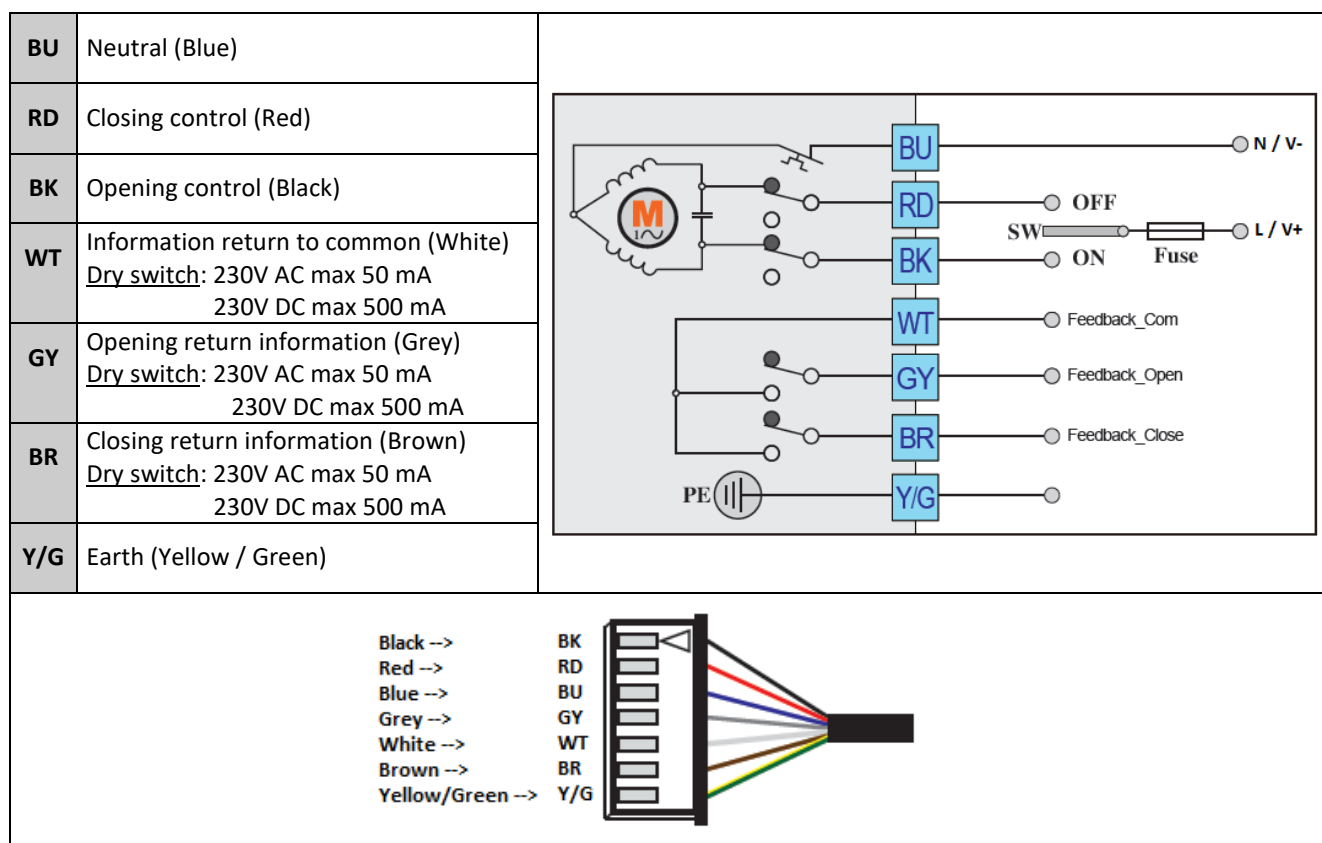


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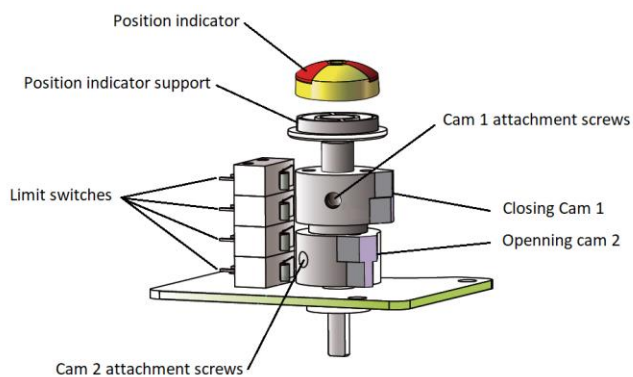
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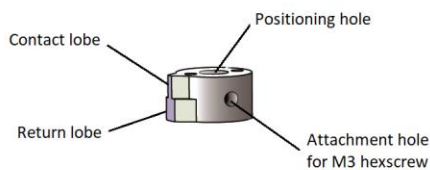
WIRING DIAGRAM



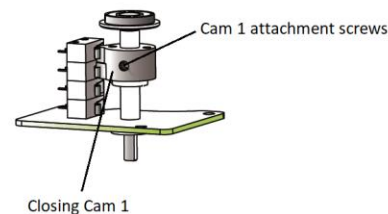
SWITCH SETTING



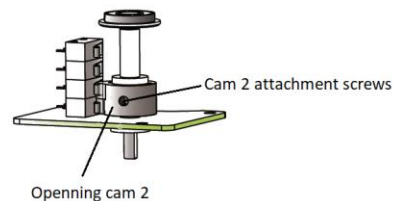
GENERAL VIEW



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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