

# 1121-1125 BUTTERFLY VALVES + TCR ELECTRICAL ACTUATOR

## FEATURES

1121 to 1125 butterfly valves are intended for the automatic opening /closing of different usual fluid pipes. The valve body is made of grey cast iron. The different configurations of the butterfly materials and of the liner make it suitable for different applications. Wafer mounting with centring ears between PN10/16 or ANSI 150 flanges. The long neck makes the mounting on thermally insulated pipe installations possible. The ISO 5211 mounting pad enables the TCR actuator to be directly assembled. The latter is suitable for S4-type service factor, installed indoors or outdoors under shelter.



## LIMITS OF USE

Fluid pressure: PS	16 bar up to DN 300
Fluid temperature: WT	According to the table below
Prohibited uses	Steam, natural gas
Ambient temperature	-20°C / +60°C
Service factor	S4 – 50%

## AVAILABLE MODELS

DN 40 to DN 125.

Connection between flanges PN10/16 and ANSI 150 RF

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

Ref.	Butterfly	Liner	Example of applications	WT° min	WT° max
1121	stainless steel	NBR	Liquid hydrocarbons - compressed air	-10°C	+90°C
1123	Stainless steel	EPDM	Demineralised water - alkalis	-10°C	+110°C
1125	cast iron	EPDM	Hot water - cold water	-10°C	+110°C

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



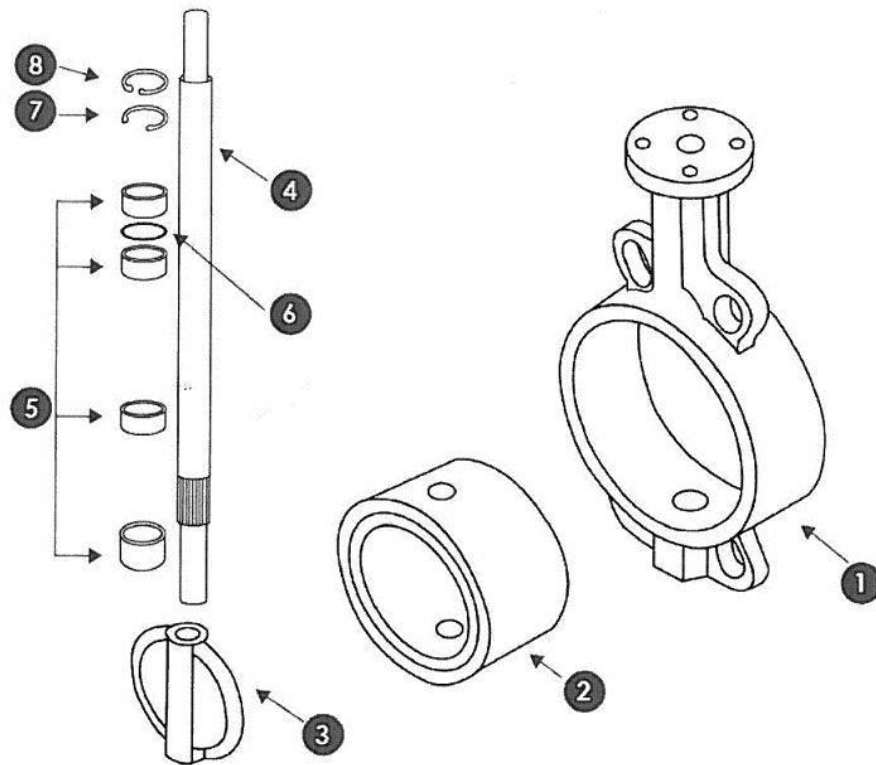
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## DIRECTIVES AND MANUFACTURING STANDARDS

OBJECT	Standard	ON	OBJECT	Standard
Pressure Equipment Directive 2014/68/EC	Cat. III module H	0035	Final test	API 598
Face-to-face dimension	ISO 5752 series 20		Actuator pilot connection	NAMUR
Flange dimension	EN 1092-1		Switch box connection	VDI/VDE 3845
Connection Motorisation	ISO 5211:		SIL 3 level (the actuator alone)	NKS 61508



## CONSTRUCTION

No.	Name	1121	1123	1125
1	Body	EN GJL-250 grey cast iron		
2	Liner	NBR	EPDM	EPDM
3	Butterfly	1.4408 SS	1.4408 SS	EN GJS-400-15 nickel-plated cast iron
4	Crossing stem	416 SS		
5	Bearings	PTFE		
6	O-ring	NBR	NBR	NBR
7	Circlips	Steel		
8	Circlips	Steel		

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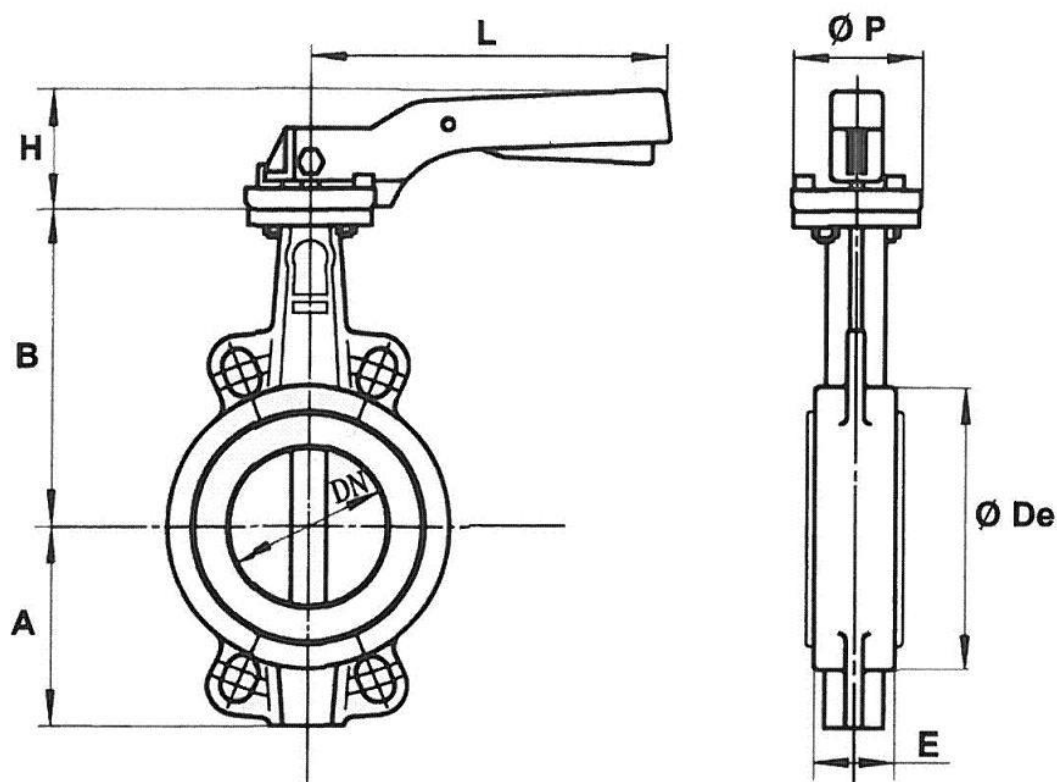


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## DIMENSIONS (mm)



DN	40	50	65	80	100	125	150	200	250	300
A	61	77	87.5	95	107	121	144	171	205	235
B	130	136	142	158	180	192	215	242	280	310
Ø De	82	95	109	127	152	180	207	260	315	370
E	33	43	46	46	52	56	56	60	68	78
H	74	74	74	74	74	79	79	37	37	37
L	200	200	200	200	200	278	278	355	507	507
Ø P	65	65	65	65	65	90	90	125	150	150
Weight (kg)	1.8	2.5	2.9	3.2	4.12	6.7	7.8	14.2	23.4	33.8

## FLOW-RATE COEFFICIENT Kv (m<sup>3</sup>/h)

DN	40	50	65	80	100	125	150	200	250	300
Kv	78	98	167	258	512	872	1347	2675	4555	7037

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# 1121-1125 BUTTERFLY VALVES + 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
40	TCR-05N	25	12s	12s	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: TCR05: 1 x PE M20 + 1.5m cable TCR11: 2 x PE M14 + 1.5m cable
50	TCR-05N	25	12s	12s	
65	TCR-05N	25	12s	12s	
80	TCR-05N	25	12s	12s	
100	TCR-11N	100	10s	10s	
125	TCR-11N	100	10s	10s	

For any other operating conditions, please contact us.

\* indicative time for actuator running empty

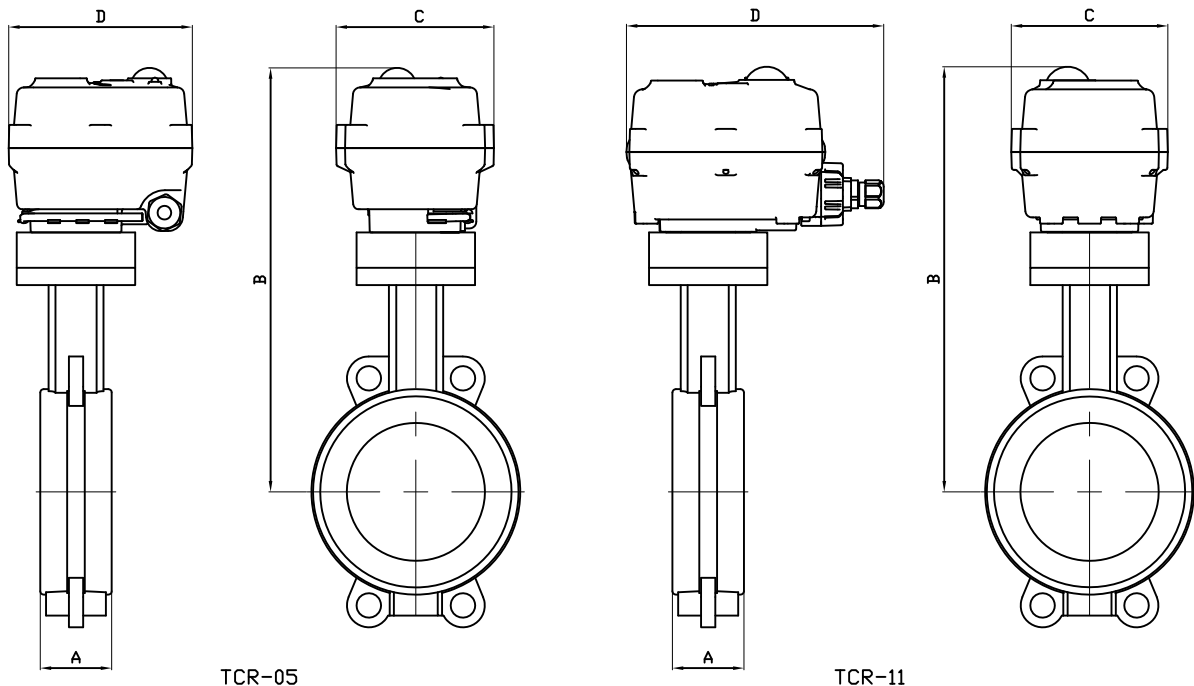
## MOTORISATION OPTIONS

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

1	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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TCR-05

TCR-11

\* : montage avec platine H=26mm

DN	40	50	65	80	100	125
SERVO	TCR05	TCR05	TCR05	TCR05	TCR11	TCR11
A	33	43	46	46	52	56
B	277*	283.5*	289*	305*	328*	340*
C	111	111	111	111	115	115
D	132	132	132	132	165	165
KG	3.9	4.4	5	5.7	7.9	9.5

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

Ech: /	Date :09/09/2019	Dessiné par : E.D.	Tolérances générales : +/- 0.2	Modifications	Date	REV.
ROBINET A PAPILLON 1121-1125/BUTTERFLY VALVE 1121-1125 + SERVOMOTEUR TCR/ELECTRIC ACTUATOR TCR				Matière :		
				Poids <Kg> :		
				Traitement : SANS		
				Plan n° Ens 1386		

45, Rue du Ruisseau  
38297 SAINT QUENTIN FALLAVIER

# 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

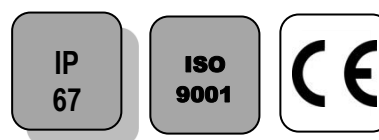
Supply voltages: 230V AC, 24V AC/DC, 12V DC.

## 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

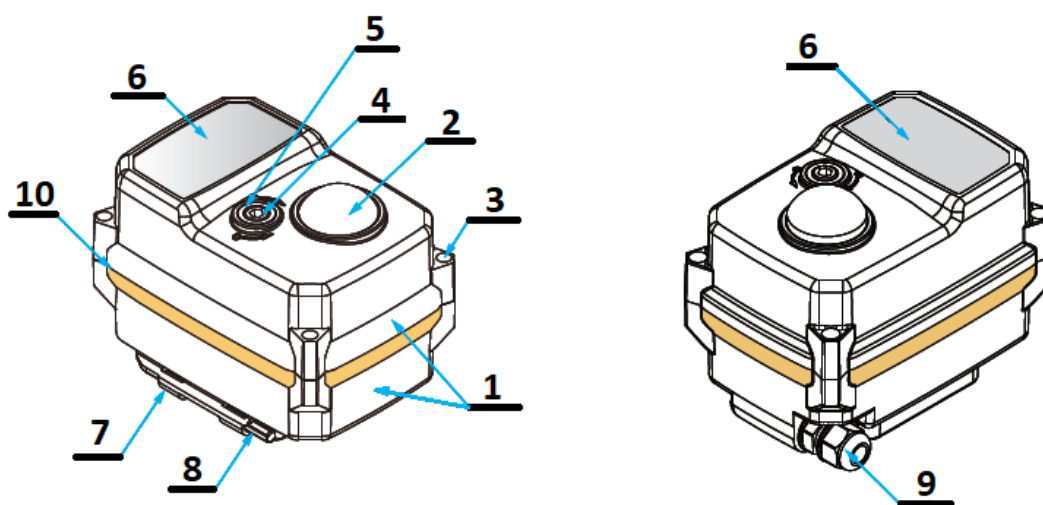
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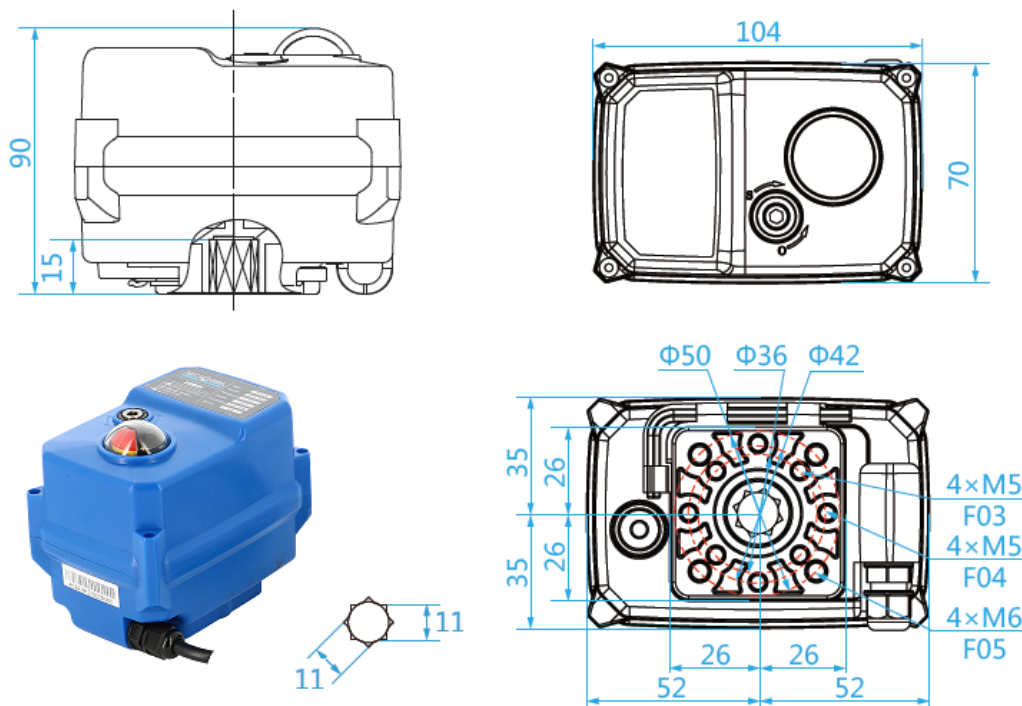
# TCR-N ELECTRICAL ACTUATOR

## 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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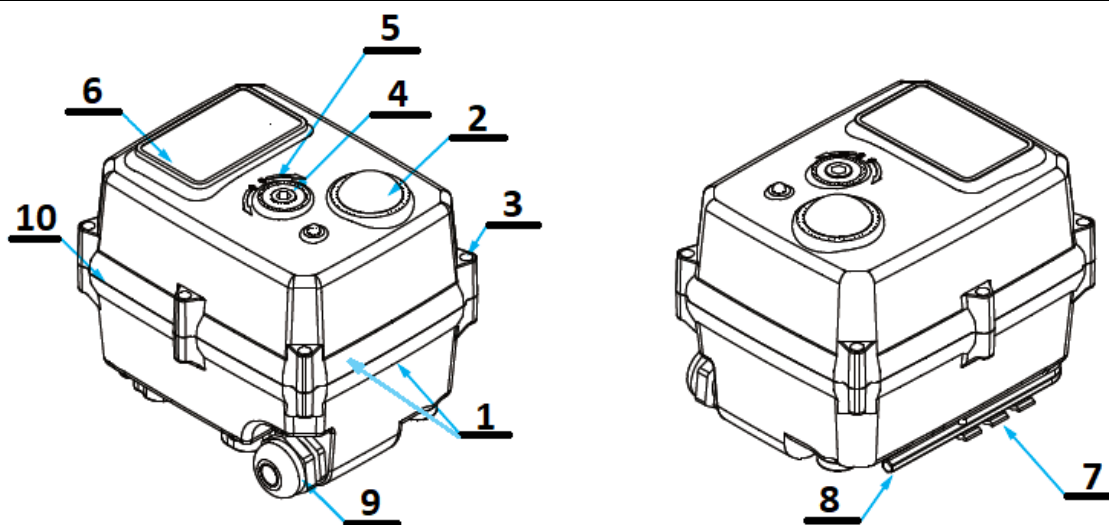
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# TCR-N ELECTRICAL ACTUATOR

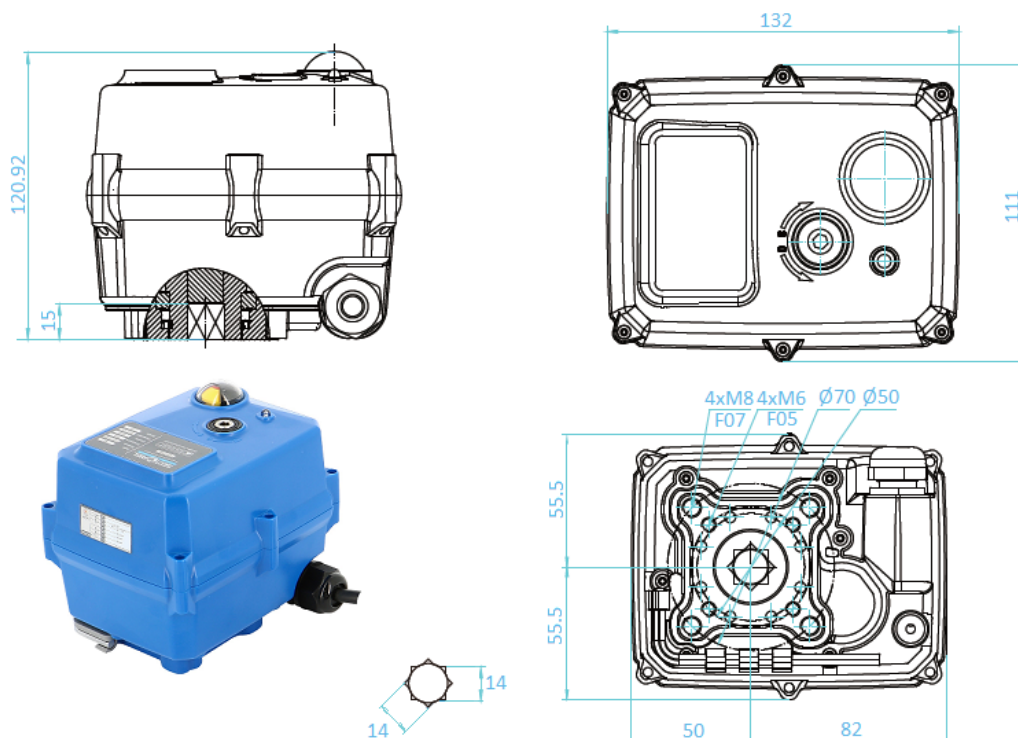
## CONSTRUCTION (TCR-05N)

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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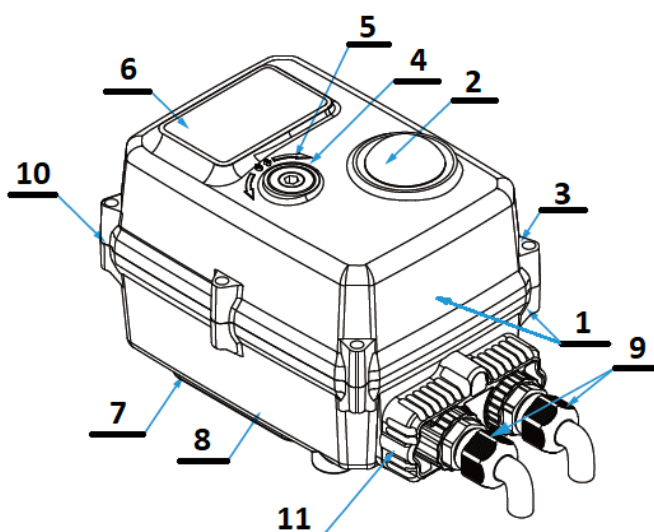
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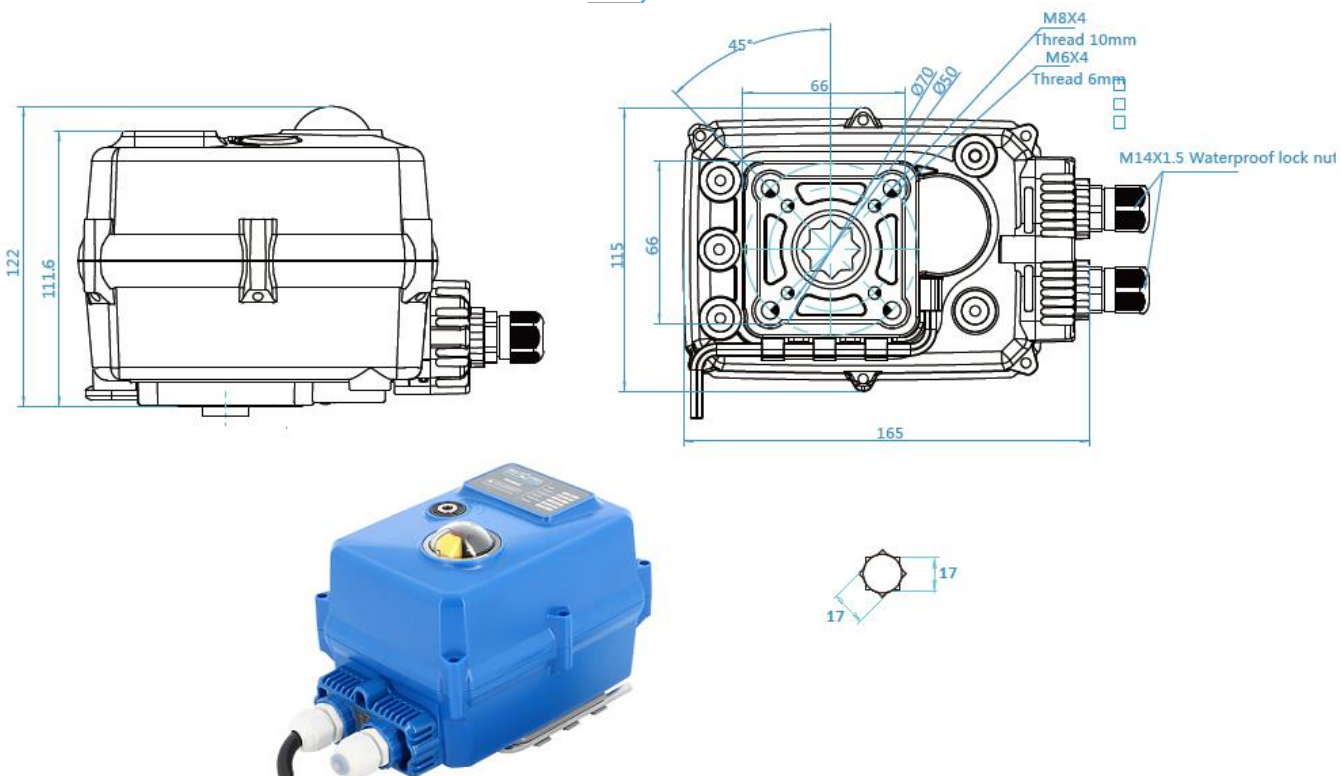
# TCR-N ELECTRICAL ACTUATOR

## 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)

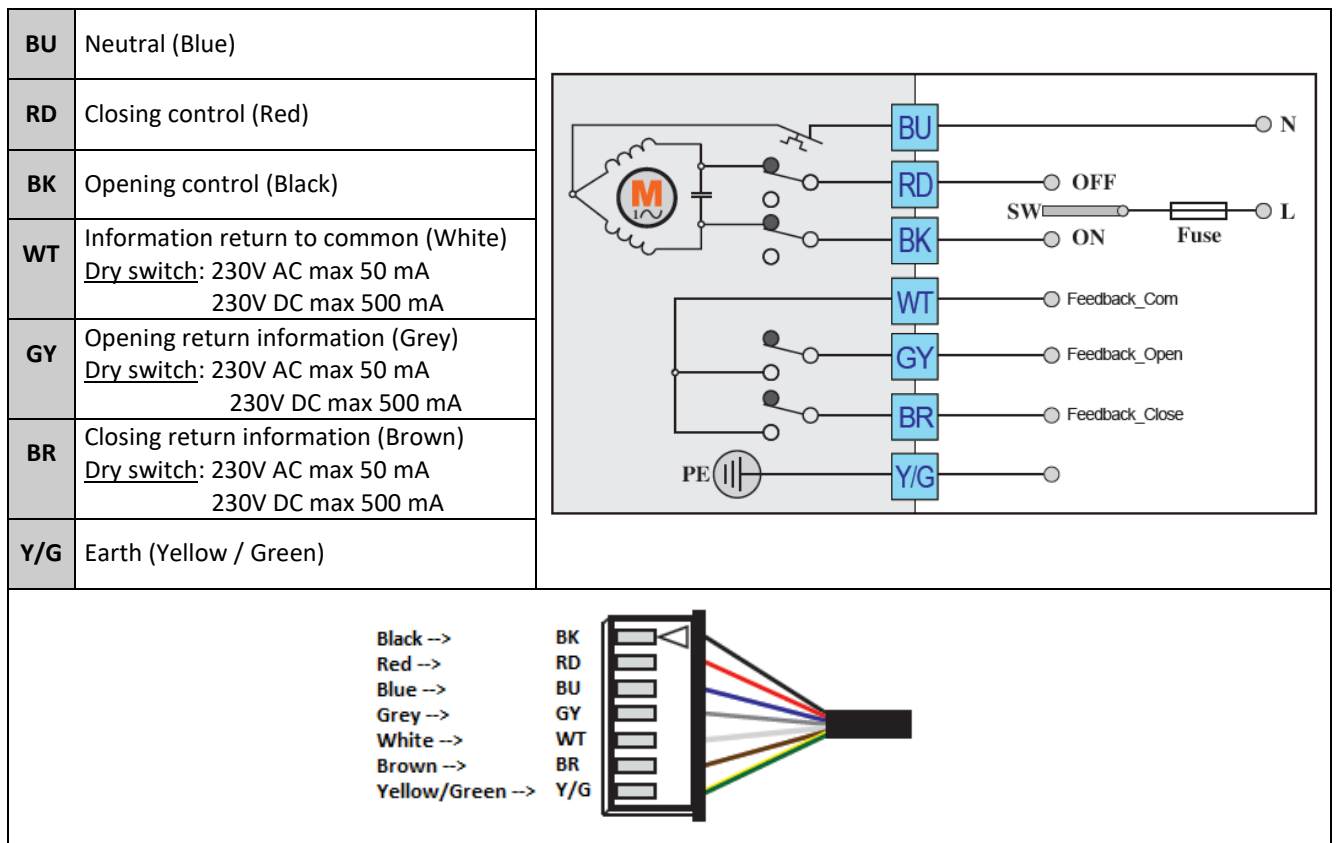


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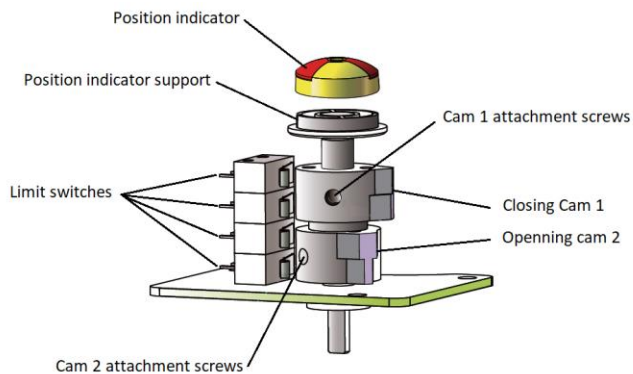
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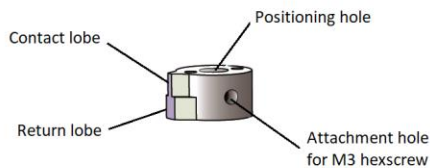
## WIRING DIAGRAM



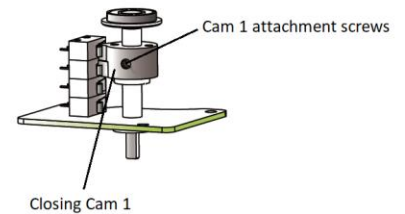
## SWITCH SETTING



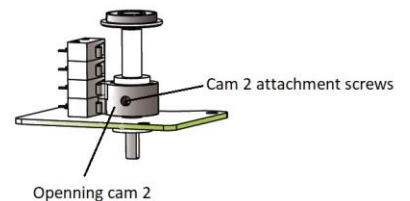
**GENERAL VIEW**



**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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