

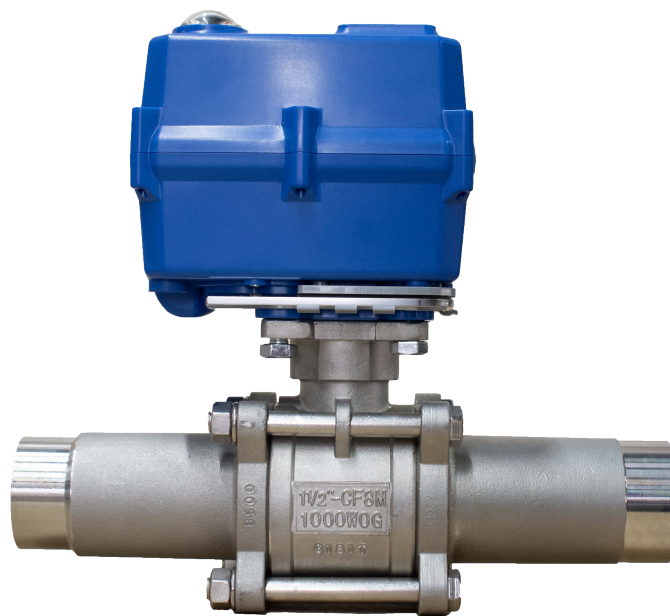
3-DELAD KULVENTIL I SYRAFAST STÅL DN10-100 PA 176 MM MED ELEKTRISKT VRIDDON



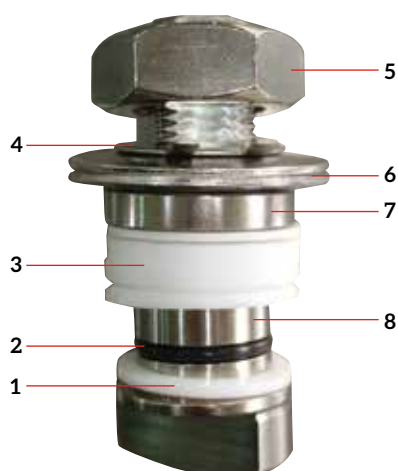
PA Ventiler AB

GO WITH OUR FLOW

PA 176 är en tredelad kulventil av syrafast stål med fullt genomlopp. Lång svetsände. DN10-50 i tryckklass PN63 samt DN65-100 i tryckklass PN40. Med elektriskt vriddon för valfri spänning. Borstlöst elektriskt 90 graders ställdon med justerbara gränslägesbrytare och antikondensvärmare som standard, IP67-kapsling. Visuell lägesindikering samt möjlighet till manuell manövrering.



KONSTRUKTION



1. SPINDELPACKNINGEN. Är det första steget i skydd mot läckage. Packningen tätar under den roterande rörelsen och fungerar även som lagring.

2. O-RINGEN ÄR DET ANDRA STEGET I EN EFFEKTIV SPINDELTÄTNING. Stabiliserar spindeln och ger förbättrad tätning samt lagring av spindeln.

3. V-FORMAD PACKNING. Det tredje steget består av flera lager av v-formade Chevron-packningar som expanderar horisontellt då de blir utsatta för ett vertikalt tryck vilket motverkar läckage.

4. LÅSBRICKA. Säkrar spindelmuttern.

5. MUTTER. Denna trycker på hela spindel-paketet.

6. BELLEVILLE-FJÄDERBRICKA. Fjäderfunktionen anpassar packningen vid förändring av tryck och temperatur.

7. GLAND AV ROSTFRITT STÅL. Fördelar trycket jämt över packningarna.

8. HÖG YTFINISH. Ytan på spindeln är behandlad för att reducera friktionen mot packningen och ger ett lågt vridmoment.

3-DELAD KULVENTIL I SYRAFAST STÅL DN10-100 PA 176 MED PNEUMATISK DUBBELVERKANDE VRIDDON



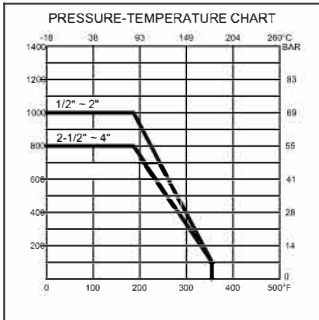
PA Ventiler AB

GO WITH OUR FLOW

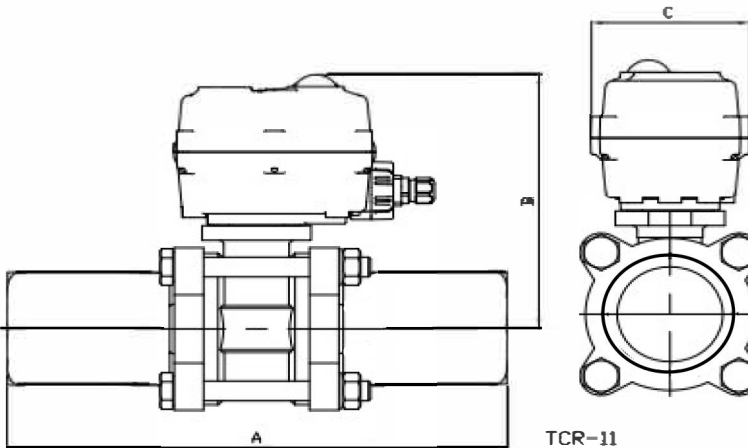
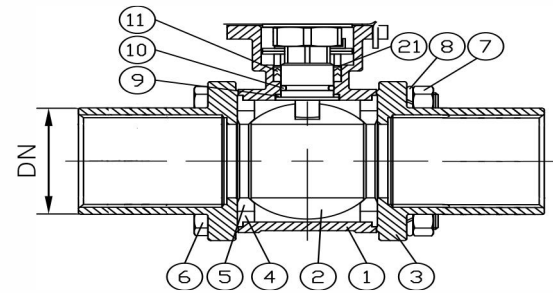
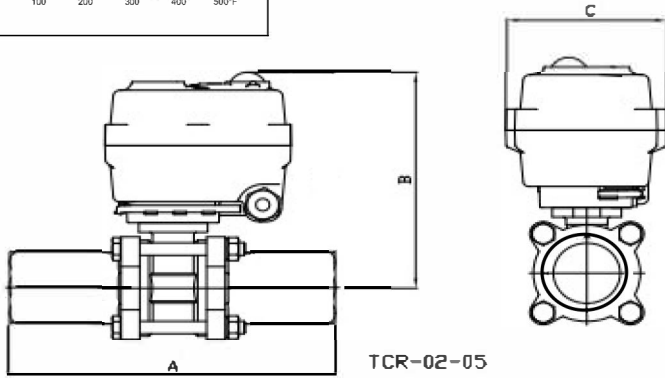
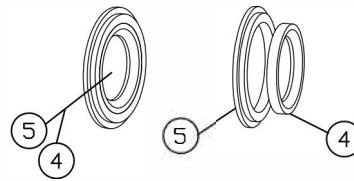
FEATURES

Svetsände MM

Working temperature: -20 - +180°C



DIN 15 – DIN 25 DIN 32–DIN 100



* MATERIALS LIST *

NO.	DESCRIPTION	QTY	MATERIAL	
1	BODY	1	ASTM-A351-CF8M	ASTM-A216-WCB
2	BALL	1	ASTM-A351-CF8M	ASTM-A351-CF8
3	CAP	2	ASTM-A351-CF8M	ASTM-A216-WCB
4	SEAT	2	PTFE	PTFE
5	JOINT GASKET	2	PTFE	PTFE
6	BOLT	4-6	SUS 304	SUS 304
7	NUT	4-12	SUS 304	SUS 304
8	SPRING WASHER	4-12	SUS 304	SUS 304
9	THRUST WASHER	1	PTFE	PTFE
10	O-RING	1	VITON	VITON
11	STEM PACKING	1	PTFE	PTFE
21	THRUST WASHER	1	PTFE 15%	PTFE 15%

DN	10	15	20	25	32	40	50	65	80	100
SERVO	TCR02	TCR02	TCR02	TCR02	TCR05	TCR05	TCR05	TCR11	TCR11	TCR11
A	141	141	141	141	164	210	240	240	275	333
B	132,3	132,3	132,8	144	180,2	194,5	204	229	239,3	254,3
C	70	70	70	70	111	111	111	115	115	115
KG	1,34	1,3	1,56	2,1	3,9	4,9	6,5	13,7	17,3	25,1

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		

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

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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		
	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	1,67	0,18 - 0,37
Fuse Protection (A)	5	5	1	8	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		
	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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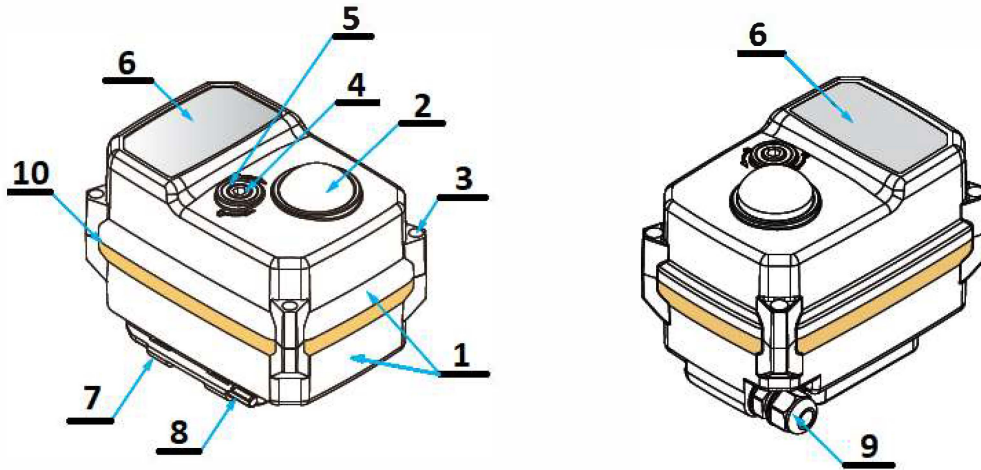
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TCR-N ELECTRICAL ACTUATOR

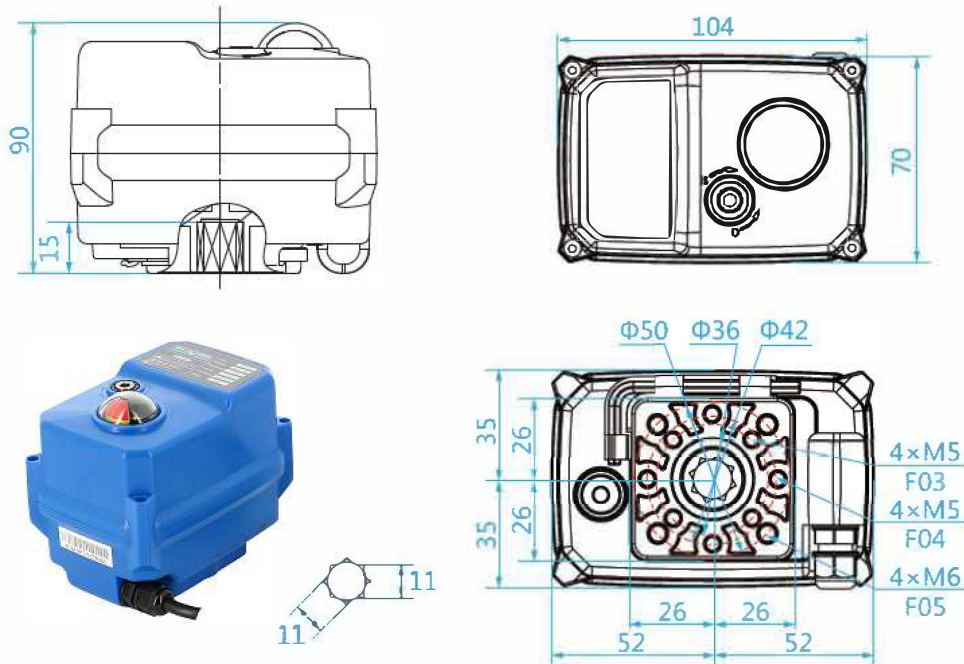
CONSTRUCTION (TCR-02N)

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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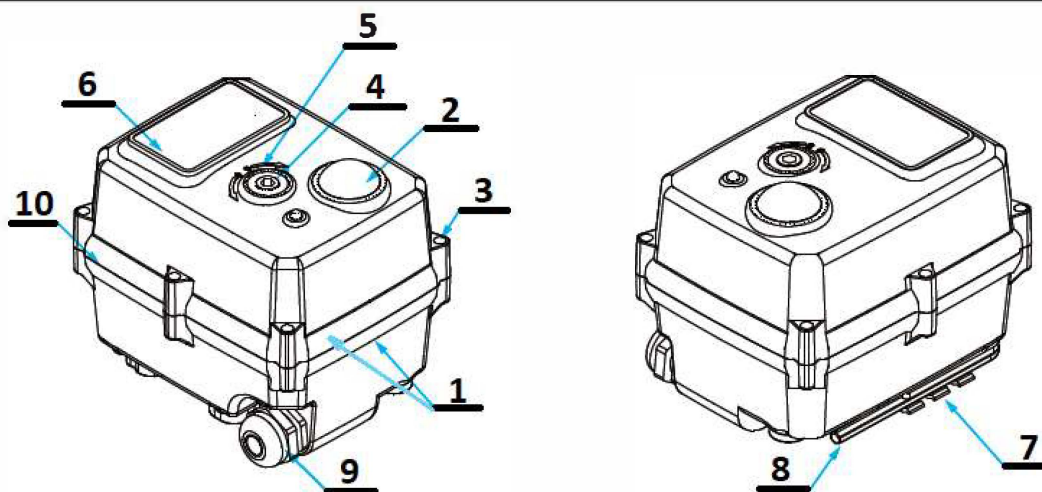
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TCR-N ELECTRICAL ACTUATOR

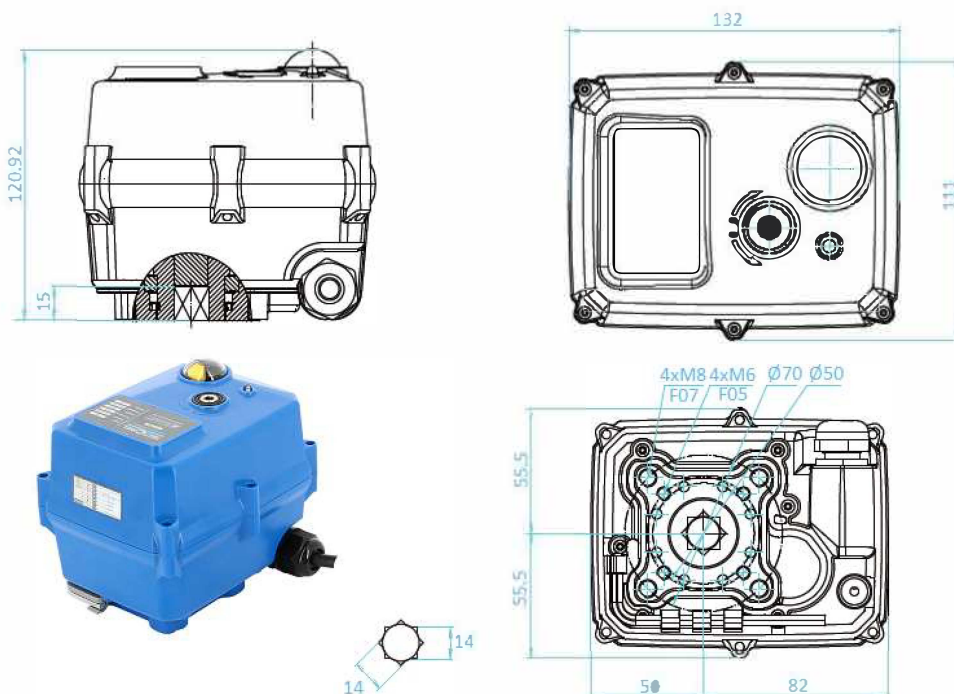
CONSTRUCTION (TCR-05N)

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)



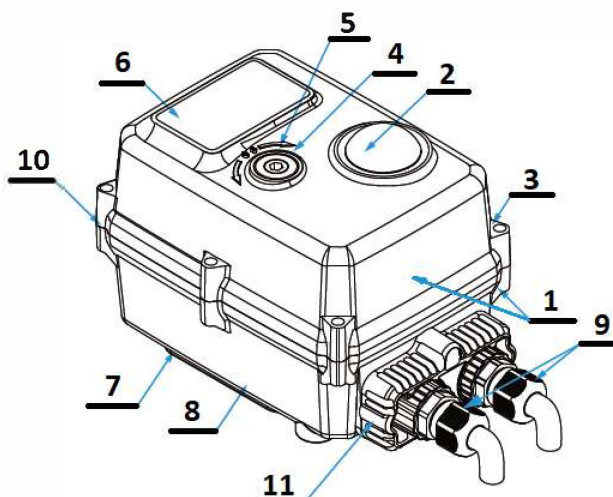
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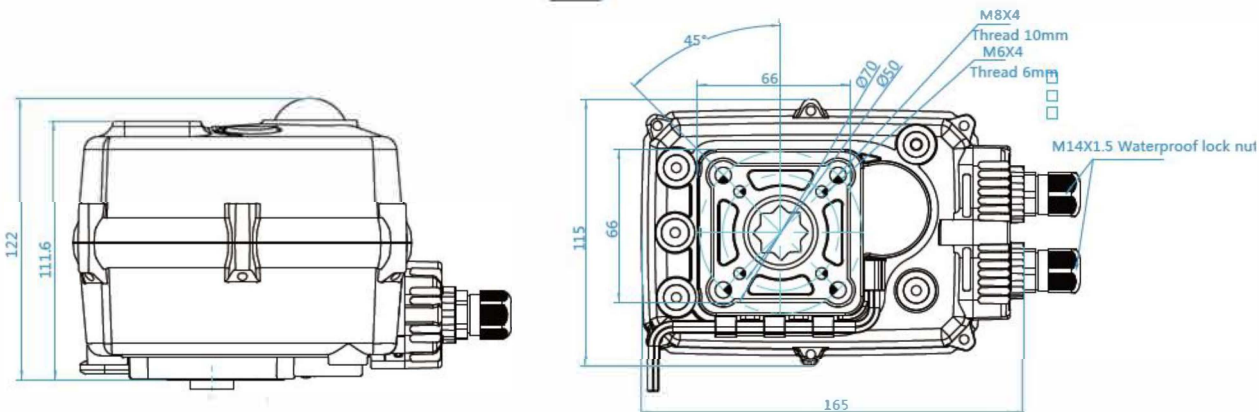
TCR-N ELECTRICAL ACTUATOR

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)



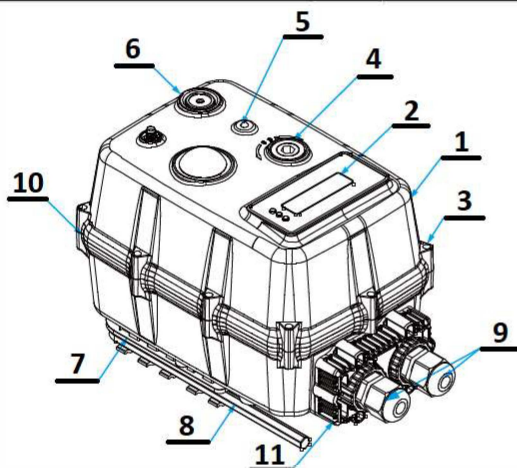
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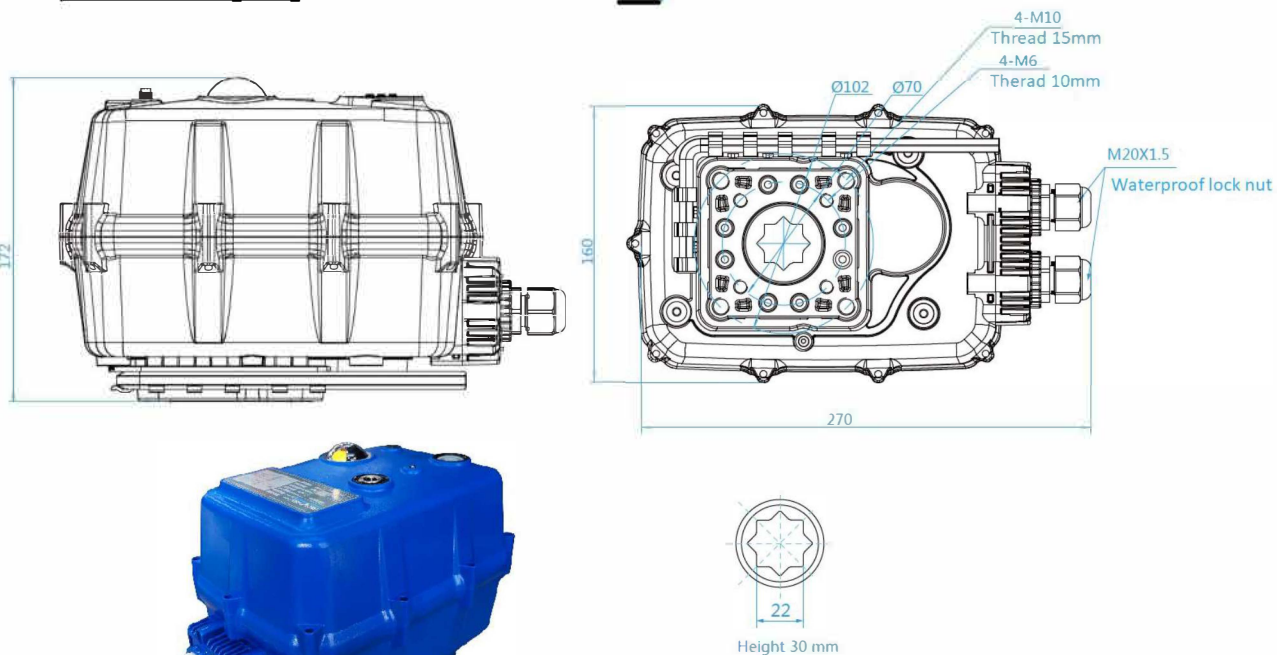
TCR-N ELECTRICAL ACTUATOR

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)

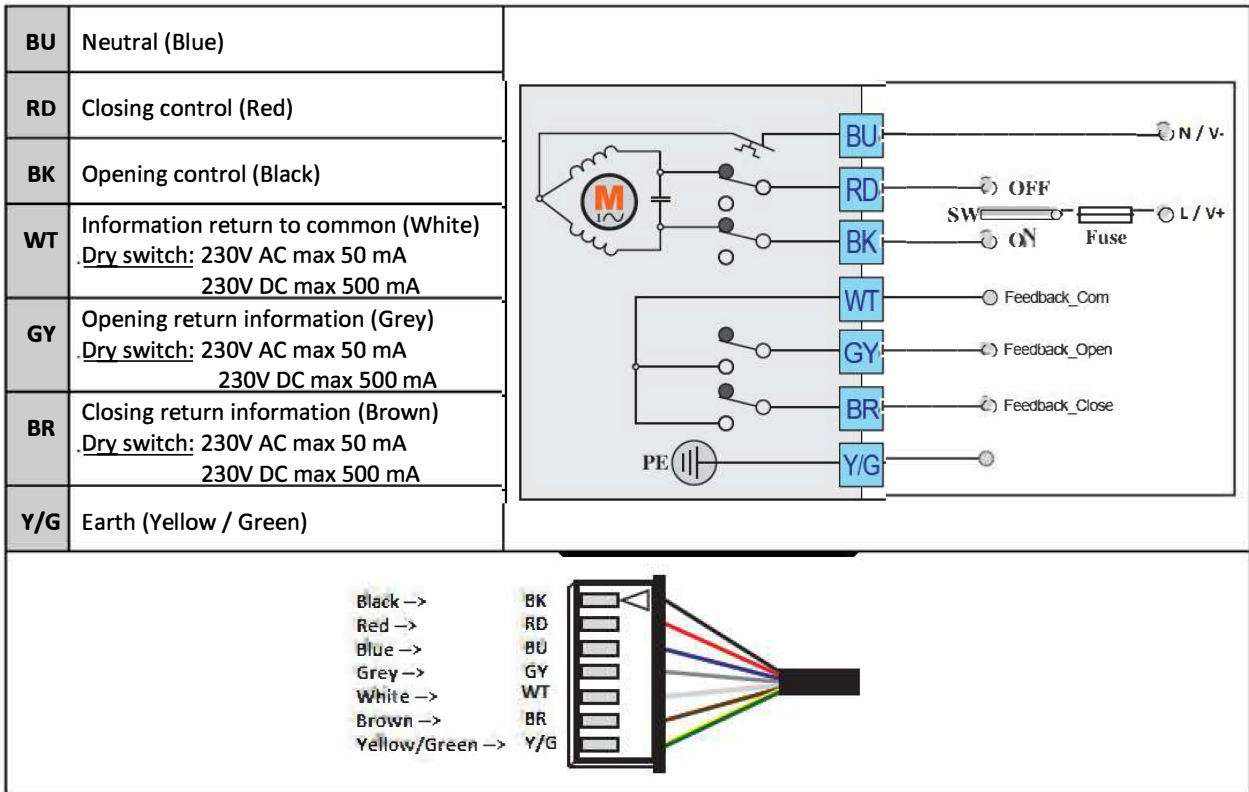


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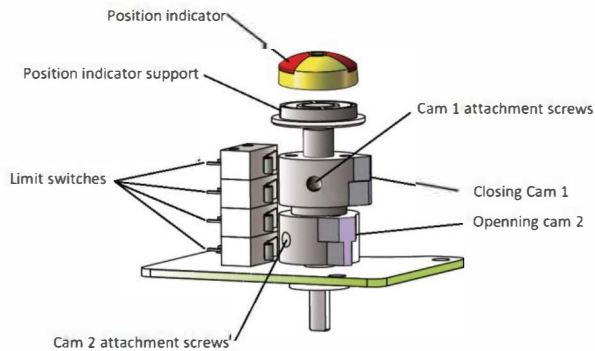
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TCR-N ELECTRICAL ACTUATOR

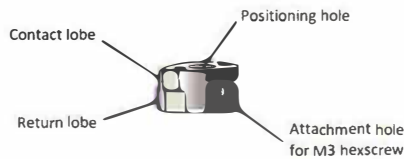
WIRING DIAGRAM



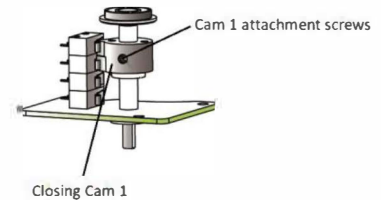
SWITCH SETTING



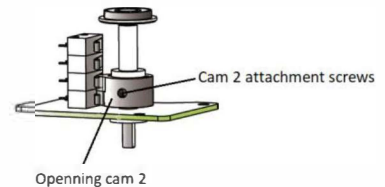
GENERAL VIEW



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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