

# ELECTRIC VALVE ACTUATOR TYPE CAR-H

FOR 2 & 3-WAY VALVES TYPE G/L/M/S 2FM-T & G/L/S/T AND TM

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## TECHNICAL DATA

<b>Protection class:</b>	IP67/IP68 option
<b>Ambient temperature:</b>	-20°C to +60°C
<b>Power supply:</b>	110/230 VAC + -10% (50-60Hz) 24VAC/DC and -10% / CAR-H 020-S250
<b>Torque switches:</b>	Open/Close
<b>Limit switches:</b>	2x Open/Close
<b>Stall protection:</b>	Built-in thermal protection Cut-off at 125°C ± 5°C / reset at 90°C ± 15°C
<b>Travel angle:</b>	90°±5°
<b>Indicator:</b>	Continuous position indicator
<b>Manual override:</b>	AUTO declutching mechanism
<b>Worm gear:</b>	Permanently lubricated and self-locking
<b>Mechanical stops:</b>	External adjustable limit stops
<b>Space heater:</b>	5W Anti-condensation
<b>Cable glands:</b>	2 x M20 x 1,5mm
<b>Lubrication:</b>	Grease NLGI grade 2 (EP-type)
<b>Materials:</b>	Steel, aluminium alloy, Al-bronze
<b>External coating:</b>	anodizing and dry powder epoxy painted RAL 6018 (green)
<b>Duty cycle:</b>	On-Off: S2:10min
<b>Modulating:</b>	S4:30%, 1200 start/hour
<b>Anti-vibration:</b>	XYZ 10g 02 ~ 34Hz, 30min
<b>Overvoltage:</b>	CAT. III
<b>Available actuator size</b>	
<b>STANDARD:</b>	On-Off, 3-Point
<b>Modulating/PCU</b>	
<b>Command signal input:</b>	4-20mA or 0-10V
<b>Analogue feedback signal:</b>	4-20mA or 0-10V self powered
<b>Deep band:</b>	1,0% adjustable
<b>CPT:</b>	feedback signal 4-20mA

## APPLICATIONS

Electric valve actuator type CAR-H is specially designed to meet the demands of the powerful low frequency vibration environments in marine installations.

The main applications are cooling of fresh water, sea water and lubricating oil systems for main and auxiliary engines. The actuator is used for Clorius 2 or 3-way valves type L3FM-T, M3FM-T, G3FM-T and S3FM-T, H3FM-T and type TM with double slides.

## MOUNTING

For mounting and starting up, the instructions delivered with the actuator must be followed carefully.

## SERVICE

No special service is needed. It is recommended to check and grease the actuator at every docking or every three years.

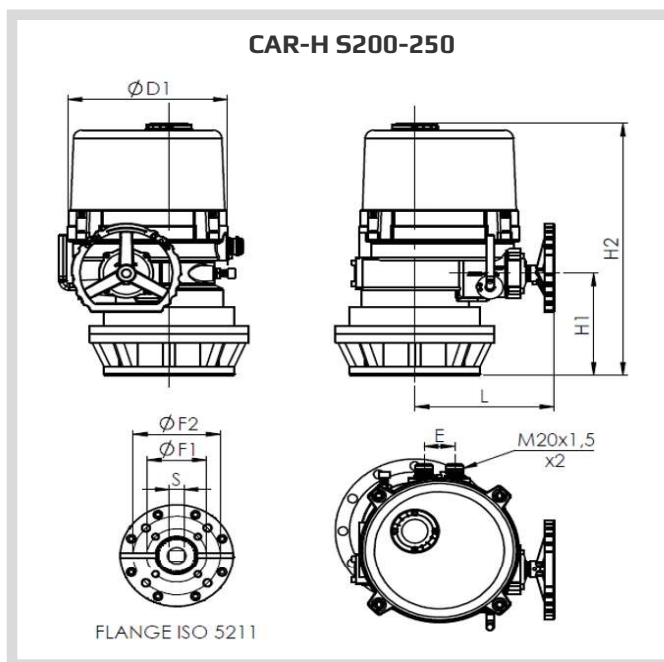
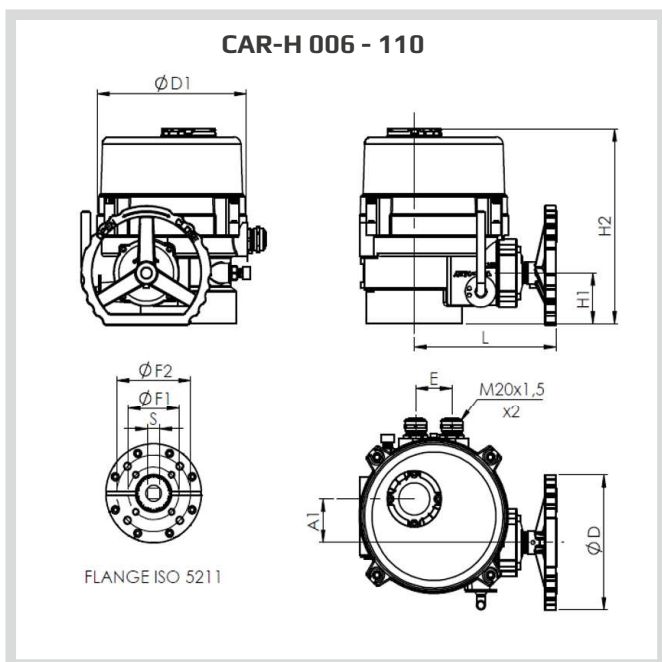
## FEATURES

- Robust design
- Maintenance free
- Reliable even in rough environments
- Easy installation
- User friendly

## SPECIFICATIONS

Type	Max. torque Nm	Operating time sek/90° (50/60 Hz)	RATED CURRENT (A) 230 V AC	RATED CURRENT (A) 110 V AC	RATED CURRENT (A) 24 V AC/DC	Power (W)	Duty cycle S5 (%)	Weight (kg)
CAR-H 006	60	26/24	0,45	-	-	20	30	8
CAR-H 010	100	26/24	0,5	1,0	1,7	20	30	8
CAR-H 020	200	28/26	0,6	1,5	2,2	40	30	14
CAR-H 024	240	28/26	0,7	1,6	2,8	45	30	14
CAR-H 035	350	32/29	0,9	1,8	4,0	60	30	18
CAR-H 050	500	32/29	1,3	3,2	6,9	90	30	19
CAR-H 080	800	36/33	1,5	3,9	9,8	120	30	24
CAR-H 110	1100	36/33	2,2	4,2	12,5	180	30	26
CAR-H S200	2000	110/99	1,5	3,9	9,8	120	30	50
CAR-H S300	2500	110/99	2,2	4,2	12,5	180	30	52

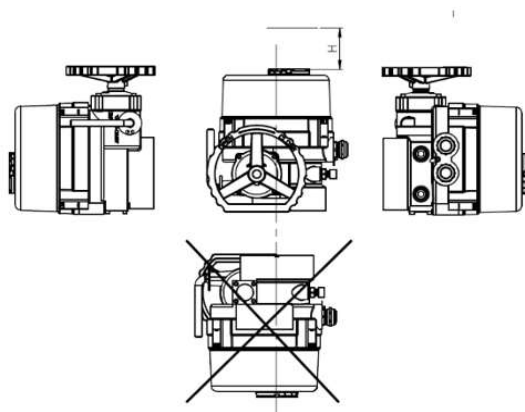
**DIMENSION SKETCH**



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Type	A1	ØD	ØD1	H1	H2	L	E	ISO FLANGE 5211				
								F1	F2	M1	M2	S
								Ø	Ø			SQUARE
CAR-H 006	41	100	157	55	223	167	46	70	82	M8	M8	12x12 -17x17
CAR-H 010	41	100	157	55	223	167	46	70	82	M8	M8	12x12
CAR-H 020	57,5	180	206	67	261	197	50	82	102	M8	M10	17x17
CAR-H 024	57,5	180	206	67	261	197	50	70	102	M8	M10	19x19
CAR-H 035	60,5	180	222	70	315	208	50	102	125	M8	M10	19x19
CAR-H 050	60,5	180	222	70	315	208	50	102	125	M8	M10	27x27
CAR-H 080	70	180	262	81	352	230	50	125	140	M12	M16	27x27
CAR-H 110	70	180	262	81	352	230	50	125	140	M12	M16	27x27
CAR-H S200	70	180	262	185	456	230	50	140	165	M16	M20	27x27 - 46x46
CAR-H S250	70	180	262	185	456	230	50	140	165	M16	M20	46x46

**RECOMMENDED CAR MOUNTING POSITION**



Actuator type	H
CAR-H 006 - 110	150
CAR-H S200-250	200

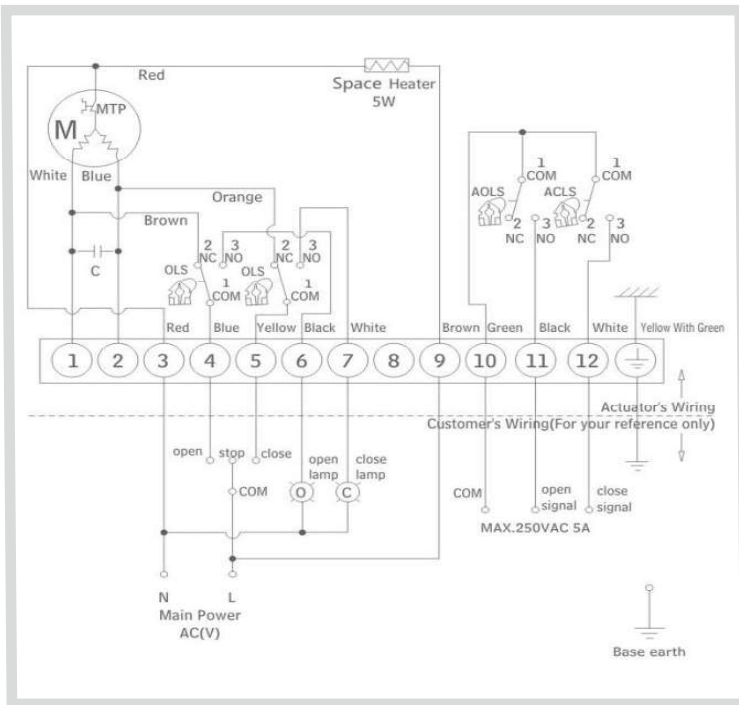
# ELECTRIC VALVE ACTUATOR TYPE CAR-H

For 2 & 3-way valves type G/L/M/S 2FM-T & G/L/M/S 3FM-T

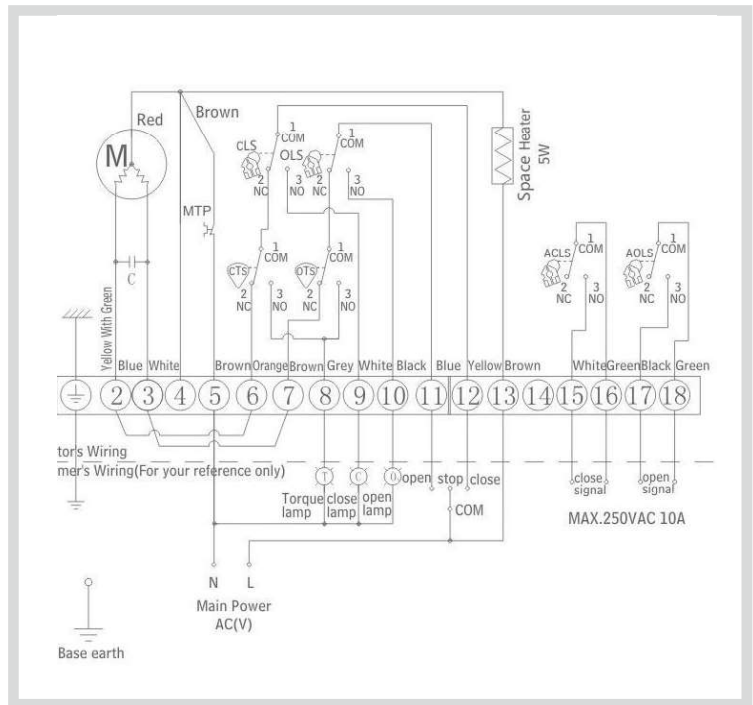
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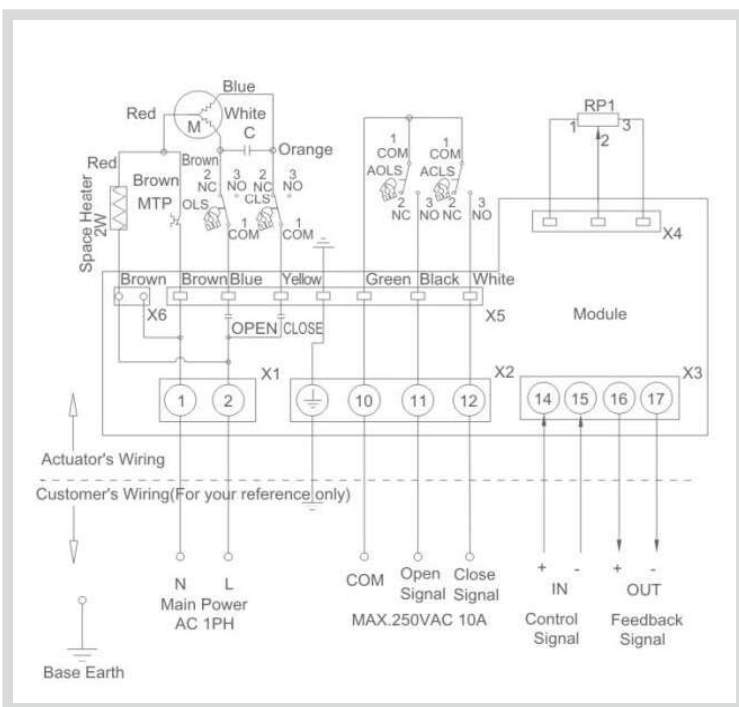
**110/230 VAC**  
**On/Off type wiring diagram - for CAR-H 006-010**



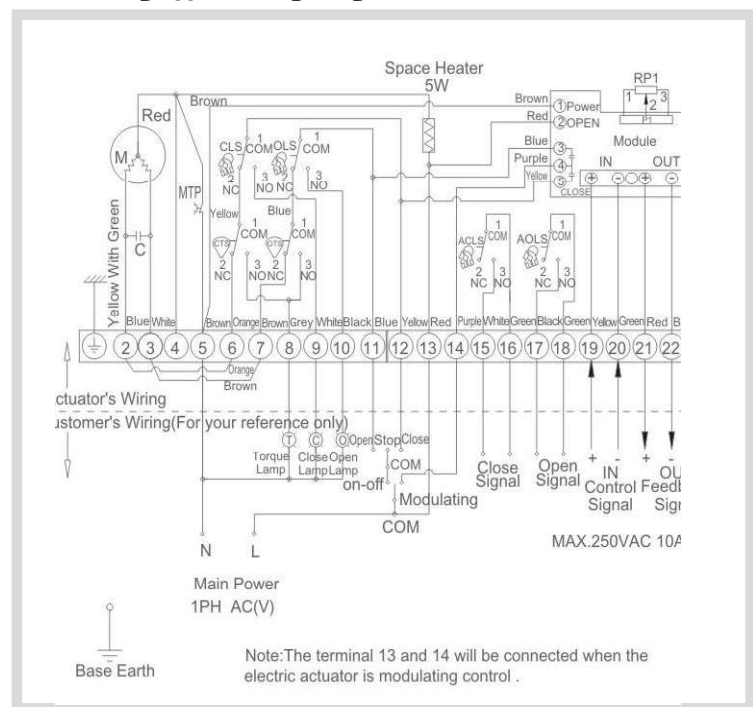
**110/230 VAC**  
**On/Off type wiring diagram - for CAR-H 020-S250**



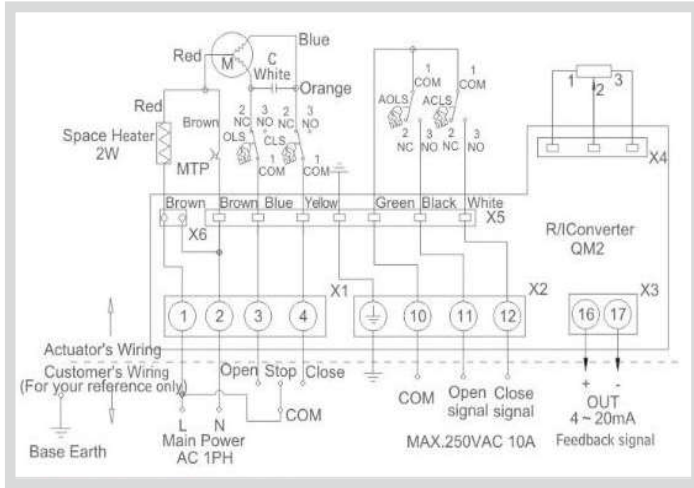
**110/230 VAC**  
**Modulating type wiring diagram - for CAR-H 006-010**



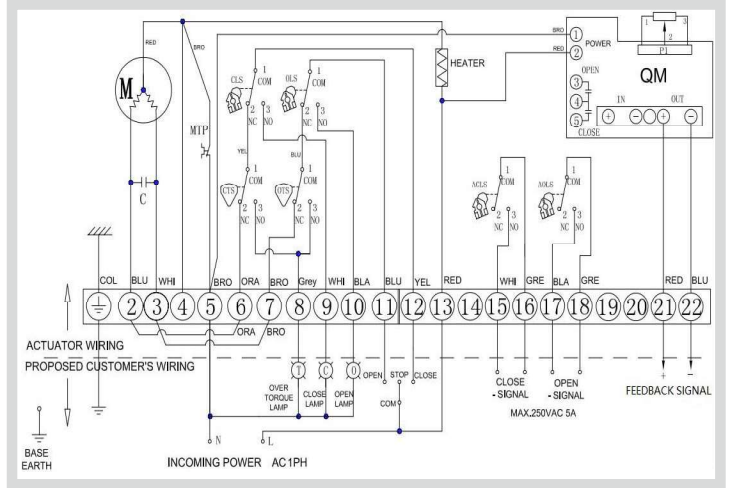
**110/230 VAC**  
**Modulating type wiring diagram - for CAR-H 020-S250**



**110/230 VAC**  
**CPT type wiring diagram - for CAR-H 006-010**



**110/230 VAC**  
**CPT type wiring diagram - for CAR-H 020-S250**



**Modulating/PCU actuator data**

<b>CAR-H 006-010</b> Technical data	• Analogue input signal 4-20mA or 0-10V	Optional
	• Analogue feedback signal 4-20mA or 0-10 self-powered	Optional
	• Input impedance ≥ 400KΩ	-
	• Dead band 1-%	Adjustable
	• The electronic components are protected dirt and similar	-
<b>CAR-H 020-S250</b> Technical data	• Analogue input signal 4-20mA or 0-10V	DIP Switches
	• Analogue feedback signal 4-20mA or 0-10V self-powered	DIP Switches
	• Input impedance ≥ 400KΩ	-
	• Dead band 1-%	Adjustable
	• The electronic components are protected dirt and similar	-
<b>CLS</b>	Close limit switch (250VAC 5A)	-
<b>OLS</b>	Close limit switch (250VAC 5A)	-
<b>CLS</b>	Close Torque switch (250VAC 5A)	-
<b>OTS</b>	Close Torque switch (250VAC 5A)	-
<b>Torque switch</b>	x 2 close/open	CAR-H 020-S250
<b>Torque switch</b>	without	CAR-H 006-010
<b>TP</b>	Thermal protector (250VAC 5A)	-
<b>Header</b>	CAR-H 006-10: 5W; CAR-H 20-S250: 7W	-



# ELECTRIC VALVE ACTUATOR TYPE CAR-H

For 2 & 3-way valves type G/L/M/S 2FM-T & G/L/M/S 3FM-T

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## RECOMMENDED ACTUATOR TYPES FOR G2/G3FM-TR and G2/G3FM-TL VALVES

Valve data		Actuator type CAR-H
Valve size DN	Differential pressure $P1 \leq 5 \text{ bar}$	
65	25	CAR-H 010
80	25	CAR-H 010
100	25	CAR-H 020
125	25	CAR-H 020
150	16	CAR-H 024
200	16	CAR-H 050
250	16	CAR-H 080
300	16	CAR-H 080
350	10	CAR-H 110
400	10	CAR-H S200
450	10	CAR-H S200
500	10	CAR-H S200
600	10	CAR-H S250

## RECOMMENDED ACTUATOR TYPES FOR G3FM-TM VALVES

Valve data			Actuator type CAR-H
Valve type	Valve size DN	Differential pressure $P1 \leq \dots \text{ bar}$	
G3FM-TM	65	25	CAR-H 010
G3FM-TM	80	25	CAR-H 010
G3FM-TM	100	25	CAR-H 020
G3FM-TM	125	25	CAR-H 035
G3FM-TM	150	16	CAR-H 035
G3FM-TM	200	16	CAR-H 050
G3FM-TM	250	16	CAR-H 080
G3FM-TM	300	16	CAR-H 110
G3FM-TM	350	10	CAR-H S200
G3FM-TM	450	10	CAR-H S250