



## Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

<b>Manufacturer</b>	<b>ComatReleco AG</b>
<b>Address</b>	Bernstraße 4, Worb, 3076, Switzerland
<b>Type</b>	Relays - Magnetic
<b>Description</b>	<p>Electromagnetic relays - pluggable C2-A2x Series: 2-pole standard relays C3-A3x Series: 3-pole standard relays C4-A4x Series: 4-pole standard relays C5-A20 Series: 2-pole power relays C5-A3x Series: 3-pole power relays C5-M10 Series: 1-pole double make power relays C12-A2x Series: 2-pole interface relays</p> <p>(x refers to contact material)</p> <p>Sockets: C11A, C12B CS-112, CS-155 S2-B, S2-BGR S3-B, S3-M, S3-M0, S3-M1 S4-J S5-M S10-PI, S10-PIR S12, S12-PI, S12-PIR</p> <p>For detailed description, pls. refer to appendix.</p>

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## Type Approval Certificate

<b>Trade Name</b>	C2, C3, C4, C5, C12, C11A, C12B, CS-112, CS-155, S2-B, S2-BGR, S3-B, S3-M, S3-M0, S3-M1, S4-J, S5-M, S10-PI(R), S12, S12-PI(R)
<b>Application</b>	Marine, offshore and industrial applications for use in environmental categories ENV1, ENV2 and ENV3 as defined in Lloyd's Register's Type Approval System, Test Specification Number 1 - December 2021.
<b>Specified Standard</b>	Manufacturer's specification IACS E10 Rev. 8 / 2021
<b>Ratings</b>	For detailed ratings, pls. refer to appendix.
<b>Additional Tests</b>	Low Temperature test: -40 °C / 16 hours
<b>Other Conditions</b>	Relays were not tested for electrical battery supply.  Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.  If the specified standards are amended during the validity of this certificate, the product is to be re- approved prior to it being supplied to vessels to which the amended standards apply.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

**Previous Version:** This certificate supersedes certificate number LR2195606TA-02 issued on 18 January 2022 which is hereby cancelled.

The Design Appraisal Document HPC1462009-22/MK and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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## Appendix

### DESCRIPTION

Plug-in relays with change-over contacts and sockets

### RATINGS

Relays:

Type	No. of poles	Coil voltage (V)	Max. switching current (A)	Max. switching voltage (V)
C2-A2x Series: 2-pole plug-in type standard relays (incl. C2-A20, C2-A28)				
C2-A2x/AC...V	2	12, 24, 48, 115, 230 VAC 50/60 Hz	10	250
C2-A2xX/AC...V				
C2-A2x/DC...V				
C2-A2xX/DC...V				
C2-A2xDX/DC...V				
C2-A2xFX/DC...V				
C3-A3x Series: 3-pole plug-in type standard relays (incl. C3-A30, C3-A38, C3-A39)				
C3-A3x/AC...V	3	12, 24, 48, 60, 115, 230 VAC 50/60 Hz	10	250
C3-A3xX/AC...V				
C3-A3x/DC...V				
C3-A3xX/DC...V				
C3-A3xDX/DC...V				
C3-A3xFX/DC...V				
C4-A4x Series: 4-pole plug-in type standard relays (incl. C4-A40, C4-A48)				
C4-A4x/AC...V	4	12, 24, 48, 115, 230, 400 VAC 50/60 Hz	10	250
C4-A4xX/AC...V				
C4-A4x/DC...V				
C4-A4xX/DC...V				
C4-A4xDX/DC...V				
C4-A4xFX/DC...V				
C5-A20 Series: 2-pole plug-in type power relays				
C5-A20/AC...V	2	12, 24, 48, 115, 230, 400 VAC 50/60 Hz	16	400
C5-A20X/AC...V				
C5-A20/DC...V				
C5-A20X/DC...V				
C5-A20DX/DC...V				
C5-A20FX/DC...V				



**RATINGS (continued)**

**Relays:**

Type	No. of poles	Coil voltage (V)	Max. switching current (A)	Max. switching voltage (V)
<b>C5-A3x Series: 3-pole plug-in type power relays (incl. C5-A30, C5-A35)</b>				
C5-A3x/AC...V	3	12, 24, 48, 115, 230, 400 VAC	16	400
C5-A3xX/AC...V		50/60 Hz		
C5-A3x/DC...V		12, 24, 48, 60, 110, 220 VDC		
C5-A3xX/DC...V				
C5-A3xDX/DC...V				
C5-A3xFX/DC...V				
<b>C5-M10 Series: 1-pole double make power relays</b>				
C5-M10/AC...V	1	12, 24, 48, 115, 230, 400 VAC	16	400
C5-M10X/AC...V		50/60 Hz		
C5-M10/DC...V		12, 24, 48, 60, 110, 220 VDC		
C5-M10X/DC...V				
C5-M10DX/DC...V				
C5-M10FX/DC...V				
<b>C12-A2x Series: 2-pole plug-in type interface relays (incl. C12-A21, C12-A22)</b>				
C12-A2x/AC...V	2	12, 24, 48, 115, 230 VAC	5	250
C12-A2xX/AC...V		50/60 Hz		
C12-A2x/DC...V		12, 24, 48, 110 VDC		
C12-A2xX/DC...V				
C12-A2xFX/DC...V				
C12-A2xBX/UC...V				

**Contact materials:**

AgNi	C2-A20, C3-A30, C4-A40, C5-A20, C5-A30, C5-M10
AgNi + 0.2 μ Au	C3-A39, C12-A21
AgNi + 5 μ Au	C2-A28, C3-A38, C4-A48, C12-A22
AgSnO <sub>2</sub>	C5-A35



**RATINGS (continued)**

**Sockets:**

Type designation	No. of pins	Suitable for relay type	Mounting	Max. switching current (A)	Max. switching voltage (V)
C11A	11	C3x	TS35	10	250
C12B					
CS-112	8	C12x	TS35	10	250
CS-155	11	C5x	TS35	16	400
S2-B	8	C2x	TS35	10	300
S2-BGR					
S3-B	11	C3x	TS35	10	300
S3-M	11	C3x	TS35	10	250
S3-M0					
S3-M1					
S4-J	14	C4	TS35	10	250
S5-M	11	C5x	TS35	16	400
S10-PI	5	C10x	TH35	10	250
S10-PIR					
S12	8	C12x	TH35	5	250
S12-PI					
S12-PIR					