



Certificate number: 78220/A0 BV

File number: MPA2402241

Product code: 2671H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

CG Drives & Automation Sweden AB

Helsingborg - SWEDEN

for the type of product

ELECTRICAL MOTOR STARTERS

TSA52 and TSA69 series

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships
IEC 60947-4-2: 2020

EC code: 21

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 27 Feb 2031

For Bureau Veritas Marine & Offshore,

At BV GOTHENBURG, on 27 Feb 2026,

Hans-Erik Ericsson

This certificate was created electronically and is valid without signature



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 4 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

Motor starter **TSA series** are soft starters for pumps, fans, compressors, blowers etc.

1.1 - Approval range:

Frame size [mm]	Model	Normal Power @ 400V [kW]	Normal Power* @ 690V [kW]	Rated current [A]	Weight [kg]
Frame Size 1 246/340 x 126 x 188	TSAXx-016	7.5	11	16	5.5
	TSAXx-022	11	18.5	22	
	TSAXx-030	15	22	30	
	TSAXx-036	18.5	30	36	
	TSAXx-042	22	37	42	
	TSAXx-056	30	45	56	
Frame Size 2 246/340 x 126 x 188	TSAXx-070	37	55	70	5.7
	TSAXx-085	45	75	85	
	TSAXx-100	55	90	100	
Frame Size 3 285/380 x 196 x 235	TSAXx-140	75	132	140	13
	TSAXx-170	90	160	170	
	TSAXx-200	110	200	200	
Frame Size 4 378/514 x 254 x 260	TSAXx-240	132	250	240	23.5
	TSAXx-300	160	315	300	
	TSAXx-360	200	355	360	
	TSAXx-450	250	450	450	
Frame Size 5 750 x 550 x 350	TSAXx-470	250	450	470	60
	TSAXx-580	315	560	580	
	TSAXx-730	400	710	730	
Frame Size 6 900 x 640 x 360	TSAXx-835**	500	800	960	90
	TSAXx-960**	630	900	1125	

- xx: 52 or 69

- * normal operation: Start current = 3xInom, Start time = 15s for frame size 1, 30s for other frames.

- ** External bypass contactor

1.2 - General Specifications:

Mains voltage	200 - 525V, +10% /-15%, 3-phase 200 - 690V, +10% /-15%, 3-phase
Control supply voltage	100 - 240V, +10% /-15%, Single phase
Number of fully controlled phases	3
Mains and control frequency	50/60Hz, +/- 10%
Operation temperature	-5°C -40 °C (40 – 55 °C when de-rated 2%/°C)

2. DOCUMENTS AND DRAWINGS :

- Technical Catalogue Softstarters Emotron TSA, No. CG Drivers & Automation 01-5552-01r3.
- Dimension drawings Nos. TSA-056_CG_Drives, TSA-100_CG_Drives, TSA-200_CG_Drives, TSA-450_CG_Drives, TSA-820_CG_Drives, TSA-960_CG_Drives.
- Block Schematics TSA Softstarters, No. 01-5838-00, dated 30-03-2015.
- Schematic NGS Control Board2, No. 01-5571-00, dated 17-10-2022.
- Coating Drawing NGS Control Board2, No. 01-5572-10, dated 07-10-2022.
- Schematic NGS Powerboard2, No. 01-5575-00, dated 17-10-2022.
- Coating Drawing NGS Control Board2, No. 01-5576-10, dated 12-10-2022.
- Schematic Snubber Board 1 NGS, No. 01-5045-00, dated 24-04-2014.
- Coating Drawing Snubber Board 1 NGS, No. 01-5046-10, dated 28-10-2011.
- Schematic Snubber Board 3-4 NGS, No. 01-5483-00, dated 22-04-2014.
- Coating Drawing Snubber Board 3-4 NGS, No. 01-5484-10, dated 23-04-2014.
- Schematic TSA5 NTC Isolation board 2_CONNECTORS, No. 01-7752-00, dated 28-10-2021.
- Coating Drawing TSA5 NTC Isolation board SNIB_100, No. 01-7753-10, dated 08-11-2021.

3. TEST REPORTS :**DELTA:**

- Test Report No. DANAK-19/15577, dated 20-08-2015.

Force:

- Test for marine type approval of TSA69-820, No.122-22663-1, dated 10-05-2022.

- Environmental Test report No. 125-21970-1, dated 09-11-2025.

- Environmental Test report No. 125-20401-1 rev.A, dated 23-09-2025.

- Environmental Test report No. 125-20312-1 rev.B, dated 07-10-2025.

CG Drivers and Automation:

- Test Report No. 01-6031-51 r0.2, dated 23-09-2013.

- Shock and Vibration Test Report R01a, dated 13-01-2015.

- Short_Circuit_Tests report R01, dated 09-12-2013.

- Temperature rise Test report R2, dated 07-12-2015.

- Making and breaking capacity of mechanical switching devices TSA 3 R01, dated 01-07-2014.

- Making and breaking capacity of mechanical switching devices TSA 4 R01, dated 01-07-2014.

- EMC Test Report Size 1-2 No. 12151, dated 31-10-2012.

- EMC Test Report Size 3 No. 14039 Rev.1, dated 26-05-2014.

- EMC Test Report Size 3 No. 14041 Rev.1, dated 26-05-2014.

Predire testcenter:

- Test Report No. 12-6069-01, dated 18-12-2012.

- Test Report No. 14-0082-01, dated 27-06-2014.

DEKRA:

- Test Report No. 2262990.50, dated 15-12-2022.

- Test Report No. 2262990.0501-EMC, dated 28-07-2022.

- Test Report No. 2296520.0501-EMC, dated 02-12-2025.

- Test Report No. 2296520.0502-EMC, dated 02-12-2025.

- Test Report No. 2296515.0501-EMC, dated 02-12-2025.

- Test Report No. 2296515.0502-EMC, dated 02-12-2025.

- Test Report No. 2296867.50, dated 15-12-2025.

- Test Report No. P126800, dated 18-12-2025.

4. APPLICATION / LIMITATION :

4.1 - BV Rules for the Classification of Steel Ships.

4.2 - Approval valid for ships intended to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**

4.3 - BUREAU VERITAS Environmental Category, **EC Code: 21**

4.4 - The equipment fulfils the EMC requirements for installation in General Power Distribution Zones

4.5 - Only Hardware and Firmware / Software successfully tested together in compliance with the rules as referred to in cover page, according to the declaration of the manufacturer are covered by this certificate.

4.6 - Any modification of the hardware, firmware or software having an impact on the product performance or functionality has to be validated with type testing.

4.7 - Equipment covered by this Type Approval certificate has been tested according to requirements of IACS UR E10 rev 9.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The above products are to be supplied by **CG Drives & Automation Sweden AB** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **CG Drives & Automation Sweden AB** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

5.4 - For information, **CG Drives & Automation Sweden AB** has declared to Bureau Veritas the following production site(s):

CG Drives & Automation Sweden AB

Mörsaregatan 12

254 66 Helsingborg

SWEDEN

6. MARKING OF PRODUCT :

- Maker's name or trade mark,
- Serial number of the units,
- Equipment type number or model identification under which it was type-tested.

7. OTHERS :

It is **CG Drives & Automation Sweden AB**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

***** END OF CERTIFICATE *****