

CROATIAN REGISTER OF SHIPPING



Certificate No.

03-001953/031517

TYPE APPROVAL CERTIFICATE

This is to certify that this product complies with the Rules for the classification of ships, Part 1 - General requirements, Chapter 3 - Type approval of products.

TYPE AND DESCRIPTION OF PRODUCT:

Generators Type
ECP32, -34 and ECO38, -40
Brushless A.C. generators, 3 phases, 4 poles, single or double bearings

MANUFACTURER:

M.E.C.C. ALTE S.P.A.
CREAZZO VI - ITALY

THE PRODUCT MEETS FOLLOWING RULES/REGULATIONS:

CRS RULES FOR THE CLASSIFICATION OF SHIPS

FURTHER DETAILS OF THE PRODUCT AND CONDITIONS FOR CERTIFICATION ARE GIVEN OVERLEAF.

APPROVAL IS VALID UNTIL: **2027-05-14**

Place and date: Split, 2023-05-15




Marinko Popović, dipl.ing.

NOTE: This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Croatian Register of Shipping of any modification or changes to the product in order to obtain a valid certificate.

DETAILED PRODUCT DESCRIPTION:

Brushless A.C. generators, 3 phases, 4 poles, single or double bearings.

Enclosure class:	IP 23 or IP 45
Winding insulation:	Class H
Temperature rise limits:	Class B, F or H
Voltage class:	Up to 690 V (star connection)
Power class:	Up to 864 kVA
Frequency class:	50 or 60 Hz
Speed:	1500 or 1800 RPM

Rating class H: (kVA) Amb 45°C								
Type	50 Hz			60 Hz				
	380 V	400 V	415 V	440 V	450 V	460 V	480 V	690 V
ECP32-1S4C	36	36	36	41,3	42,3	43,2	43,2	43,2
ECP32-2S4C	43,2	43,2	40,3	48	49,9	51,8	51,8	51,8
ECP32-1M4C	48	48	48	57,6	57,6	57,6	57,6	57,6
ECP32-2M4C	60	60	60	69,6	70,8	72	72	72
ECP32-1L4C	72	72	72	78,7	82,6	86,4	86,4	86,4
ECP32-2L4C	79,2	79,2	79,2	92,2	94,1	96	96	96

ECP34-1S4C	84	84	84	101	101	101	101	101
ECP34-2S4C	96	96	96	115	115	115	115	115
ECP34-1M4C	120	120	120	134	134	144	144	144
ECP34-2M4C	130	130	130	144	150	156	156	156
ECP34-1L4C	144	144	144	163	168	173	173	173
ECP34-2L4C	154	158	158	183	187	190	190	190

ECO38-1S4C	173	173	173	211	211	211	211	211
ECO38-2S4C	192	192	192	230	230	230	230	230
ECO38-1M4C	216	216	216	259	259	259	259	259
ECO38-2M4C	240	240	230	288	288	288	288	288
ECO38-1L4C	288	288	288	326	336	346	346	346
ECO38-2L4C	336	336	336	403	403	403	403	403

ECO40-1S4C	384	384	384	432	446	461	461	461
ECO40-2S4C	432	432	432	490	504	518	518	518
ECO40-3S4C	480	480	480	557	566	576	576	576
ECO40-1L4C	528	528	528	605	619	634	634	634
ECO40-2L4C	600	600	600	677	699	720	720	720
ECO40-3L4C	653	653	653	749	766	783	783	783
ECO40-VL4C	720	720	720	864	864	864	864	864

Rating class F: (kVA) Amb 45°C								
Type	50 Hz			60 Hz				
	380 V	400 V	415 V	440 V	450 V	460 V	480 V	690 V
ECP32-1S4C	33,6	33,6	33,6	39,4	40,4	41,3	41,3	41,3
ECP32-2S4C	39,4	39,6	37,4	46,1	48,0	49,9	49,9	49,9
ECP32-1M4C	46,1	46,1	46,1	55,7	55,7	55,7	55,7	55,7
ECP32-2M4C	57,1	57,1	57,1	67,2	67,9	68,6	68,6	68,6
ECP32-1L4C	64,3	64,3	64,3	76,8	78,3	79,7	79,7	79,7
ECP32-2L4C	70,3	70,3	70,3	85,4	86,9	88,3	88,3	88,3

ECP34-1S4C	75,8	75,8	75,8	91,2	91,2	91,2	91,2	91,2
ECP34-2S4C	86,4	86,4	86,4	105	105	105	105	105
ECP34-1M4C	108	108	108	120	125	130	130	130
ECP34-2M4C	116	116	116	130	135	140	140	140
ECP34-1L4C	131	131	131	144	150	156	156	156
ECP34-2L4C	138	143	143	158	165	171	171	171

Rating class F: (kVA) Amb 45°C								
Type	50 Hz			60 Hz				
	380 V	400 V	415 V	440 V	450 V	460 V	480 V	690 V
ECO38-1S4C	163	163	163	197	197	197	197	197
ECO38-2S4C	178	178	178	211	211	211	211	211
ECO38-1M4C	199	199	199	240	240	240	240	240
ECO38-2M4C	221	221	221	269	269	269	269	269
ECO38-1L4C	264	264	264	298	307	317	317	317
ECO38-2L4C	307	307	307	370	370	370	370	370

ECO40-1S4C	355	355	355	394	408	422	422	422
ECO40-2S4C	394	394	394	442	456	470	470	470
ECO40-3S4C	432	432	432	499	509	518	518	518
ECO40-1L4C	480	480	470	547	562	576	576	576
ECO40-2L4C	541	541	541	611	631	650	650	650
ECO40-3L4C	605	605	605	691	709	726	726	726
ECO40-VL4C	662	662	662	797	797	797	797	797

For class B rating temperature rises, multiply class H rating by 0,792.

For degree of protection IP45 (fitting an air inlet filter and air outlet filter), multiply class H rating by 0,74.

For 50°C ambient temperature, multiply class H rating (or class F, or class B) by 0,97.

APPLICATION / LIMITATIONS:

Generator is intended for ship's use according to CRS Rules for the Classification of Ships.

TYPE APPROVAL DOCUMENTATION:

Drawings:

ECP32C

- MD35 coupling overall dimensions, B0764, rev.03
- B3B14 coupling overall dimensions, B0765, rev.03
- Shaft MD35_B0670_03
- Shaft B3B14, B0671, rev.03
- Technical Guide for ECP32C, rev.04

ECP34C

- MD35 coupling overall dimensions, B0931, rev.04
- B3B14 coupling overall dimensions, B0940, rev.04
- Shaft MD35, B0800, rev.03
- Shaft B3B14, B0886, rev.02
- Technical Guide for ECP34C, rev.04

ECO38C

- MD35 coupling overall dimensions, B1700, rev.01
- B3B14 coupling overall dimensions, B1702, rev.01
- Shaft MD35, B1451, rev.01
- Shaft B3B14, B1452, rev.02
- Technical Guide for ECO38C, rev.00

ECO40

- Overall dimensions - MD35 coupling, D00045, rev.00
- Overall dimensions - B3B14 coupling, D00047, rev.00
- Shaft MD35_S type, A9446, rev.02
- Shaft B3B14_S type, A9449, rev.02
- Shaft MD35_L type, A9447_03
- Shaft MD35_VL type, A9448_02
- Shaft B3B14_VL type, A9448_02
- Technical Guide for ECO40C, rev.00

Test Reports:

Test Report No. 16500201, dated 22/04/2021.

Test Report No. 16500205, dated 29/04/2021.

Test Report No. 15600201, dated 19/07/2021.

Test Report No. 15600206, dated 02/08/2021.

Test Report No. 17100201, dated 07/05/2021.

Test Report No. 17100206, dated 25/05/2021.

Test Report No. 19200207, dated 26/11/2021.

MARKING OF PRODUCT:

The following information are to be marked on the rating plate: manufacturer's name, product type, serial number, year of manufacture, number of phases, rated power, rated current, rated voltage, rated frequency, degree of protection, thermal class and maximum ambient temperature.

CONDITIONS FOR CERTIFICATION:

Society reserves the right to require check test at maker facility at any time.

Maker is responsible to inform purchaser on proper methods of use and generators maintenance.