



BIRO KLASIFIKASI INDONESIA

SERTIFIKAT PERSETUJUAN TIPE

Type Approval Certificate

No. 25.17.SP00045

No. Persetujuan : 17TA175
Approval no.

Tanggal persetujuan : 12 January 2017
Date of approval

Dengan ini dinyatakan bahwa produk dibawah ini telah memenuhi dan disetujui
This is to certify that the following products has been complied and approved

berdasarkan persyaratan dari Peraturan dan/atau Standard yang tercantum dibawah ini
in accordance with requirements of the Rules and / or Standards listed below

Produk : **MARINE BRUSHLESS AC GENERATOR**
Product

Pembuat : **Mecc Alte U.K. Ltd**
Manufacturer 6 Lands' End Way Oakham Rutland LE15 6RF - United Kingdom

Tipe produk : **ECP32 -/4, ECP34 -/4, ECO38 -/4 and ECO40 -/4**
Type designation

Standard persetujuan :
Approval standards

- BKI Rules for Approval of Manufacturers and Service Suppliers, Part 1 Vol. XI
- BKI Rules for Electrical Installations, Part 1 Vol. IV

Sertifikat ini berlaku hingga tanggal yang ditetapkan di bawah dengan syarat pemeriksaan periodik
This certificate remains valid until the date set below provided that periodical surveillances

dilakukan tepat waktu dan setiap perubahan atau modifikasi pada produk diberitahukan ke BKI.
are carried out on time and any alterations or modifications to the approved product notified to BKI.

Sertifikat ini berlaku sampai dengan : **11 January 2022**
This certificate is valid until

Jakarta, 3 March 2017

a.n. Direksi
Direktur Klasifikasi
o.b. Board of Director
Director of Classification

Capt. Iman Satria Utama

- Jika Peraturan atau Standard yang digunakan mengalami perubahan pada saat sertifikat ini masih berlaku, maka produk harus dilakukan persetujuan ulang sebelum dipasang dikapal yang menerapkan Peraturan atau Standard tersebut.
Should the specified Rules or Standards be amended during the validity of this certificate, the product is to be reaproved prior to it being placed on board vessels to which the amended Rules or Standards apply.

Pemeriksaan periodik

Periodical Surveillance

For retention of the Type Approval, a BKI Surveyor shall conduct periodical surveillance every year to verify that approved quality system, etc. of the manufacturing works are maintained satisfactorily.

The main scope of the Periodical Surveillance will normally include:

- Verification of the manufacturer's production and quality system with regard to ensure continued consistent production of the Type Approved products at the manufacturer's premises.
- Review of the Type Approval documentation and that this is still used as basis for the production
- Review of possible changes to the design, material and performance of the product
- Verification of the product marking.

Rating Class F : [kVA] Ambient Temperature 45° C								
Type	50 Hz			60 Hz				
	380 V	400 V	415 V	440 V	450 V	460 V	480 V	690 V
ECP32-2S/4	30,8	30,8	30,8	37	37	37	37	37
ECP32-3S/4	37,4	37,4	37,4	45	45	45	45	45
ECP32-1M/4	44	44	44	52,8	52,8	52,8	52,8	52,8
ECP32-2M/4	58,2	58,2	58,2	62,9	64,7	66,5	66,5	66,5
ECP32-3L/4	66	66	66	75,4	77,3	79,2	79,2	79,2
ECP32-4L/4	70,4	70,4	70,4	80,6	82,5	84,3	84,3	84,3
ECP34-1S/4	74,8	74,8	74,8	89,8	89,8	89,8	89,8	89,8
ECP34-2S/4	92,4	92,4	92,4	111	111	111	111	111
ECP34-1L/4	118	118	118	132	137	142	142	142
ECP34-2L/4	132	132	132	150	154	158	158	158
ECP34-3L/4	135	140	140	163	166	169	169	169
ECO38-1S/4	158	158	158	194	194	194	194	194
ECO38-2S/4	176	176	176	211	211	211	211	211
ECO38-3S/4	198	198	198	238	238	238	238	238
ECO38-1L/4	211	220	211	264	264	264	264	264
ECO38-2L/4	255	264	264	299	308	317	317	317
ECO38-3L/4	308	308	308	370	370	370	370	370
ECO40-1S/4	352	352	352	396	409	422	422	422
ECO40-2S/4	396	396	396	449	462	475	475	475
ECO40-3S/4	440	440	440	510	519	528	528	528
ECO40-1L/4	484	484	475	554	568	581	581	581
ECO40-1.5L/4	546	546	546	616	635	655	655	655
ECO40-2L/4	598	598	598	686	702	718	718	718
ECO40-VL/4	690	690	690	829	829	829	829	829

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

For degree 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.

2. Test and final inspection of each generator shall be carried out in accordance with BKI Rules for Electrical Installation, Part 1 Vol. IV Section 20.A.4. and BKI Rules for Approval of Manufacturers and Service Suppliers, Part 1 Vol. XI Section 2.D.5.
3. The manufacturer issues test report upon successful testing of each generator which obtain validity only after endorsement and registration by BKI.
4. The spare part are to be furnished in accordance with the Rules applicable to the vessel in which the generator is installed.
5. Individual product certification is required.

Dokumentasi Persetujuan Tipe

Type Approval Documentation

1. Technical Guide for ECP32 4 B; ECP34/4 A; ECO38/4 A & ECO40/4 A
2. Technical Drawing for ECP32; ECP34; ECO38 & ECO40, BKI Contract No. 1741090006 dated on 11 January 2017.
3. Type Test Reports: ECP324L4A S/N 1951757 dated on 22-09-2016; ECP343L4A S/N 1951756 dated on 21-09-2016; ECO383L4A S/N 1951755 dated on 23-09-2016; ECO403S4A S/N 1950442 dated on 20-09-2016; ECO382L4A S/N 1953536 dated on 8 November 2016; ECO32-2M/4 S/N 1887605 dated on 21 December 2015; ECO32-3L/4 S/N 1139983 dated on 28 November 2015; ECP32-4L/4 S/N 1887978 dated on 18 December 2015; ECP34-3L/4 S/N 1889069 dated on 25 May 2016; ECO38-3L/4 S/N 1885887 dated on 9 June 2016; ECO40-VL/4 S/N 1889552 dated on 31 April 2016.

Penandaan Produk

Marking of Product

The generator shall be marked on the name plate with manufacturer's name, type, serial number, ambient temperature, winding insulation class, Ingress Protection class, rated power, rated voltage, rated current, power factor, rated frequency, phase number, rated rotational speed, winding connection, year/month of production, BKI stamp.

Ketentuan Persetujuan Approval Condition

Deskripsi Produk

Product Description

Marine Brushless AC Generator of 3 phases; 4 poles; single or double bearings

Variant of Product Type : ECP32 -/4, ECP34 -/4, ECO38 -/4 and ECO40 -/4

Technical Description :

Enclosure Class	:	IP 23 or IP 45
Winding Insulation	:	Class H
Temperature Rise Limits	:	Class B, F or H
Voltage Class	:	380 V to 690 V
Power Class	:	ECP32 -/4 : 33,6 kVA to 92 kVA ECP34 -/4 : 81,6 kVA to 184 kVA ECO38 -/4 : 173 kVA to 403 kVA ECO40 -/4 : 384 kVA to 864 kVA
Frequency Class	:	50 or 60 Hz
Speed	:	1500 or 1800 rpm

Kondisi Persetujuan

Approval condition

- The Approval are given for the mass produced Marine Brushless AC Generator based on the following main data :

Rating Class H : [kVA] Ambient Temperature 45° C								
Type	50 Hz			60 Hz				
	380 V	400 V	415 V	440 V	450 V	460 V	480 V	690 V
ECP32-2S/4	33,6	33,6	33,6	40,3	40,3	40,3	40,3	40,3
ECP32-3S/4	40,8	40,8	40,8	49	49	49	49	49
ECP32-1M/4	48	48	48	57,6	57,6	57,6	57,6	57,6
ECP32-2M/4	60	60	60	68,6	70,6	72,6	72,6	72,6
ECP32-3L/4	72	72	72	82,3	84,4	86,4	86,4	86,4
ECP32-4L/4	76,8	76,8	76,8	88	90	92	92	92
ECP34-1S/4	81,6	81,6	81,6	97,9	97,9	97,9	97,9	97,9
ECP34-2S/4	101	101	101	121	121	121	121	121
ECP34-1L/4	130	130	130	144	150	156	156	156
ECP34-2L/4	144	144	144	163	168	173	173	173
ECP34-3L/4	149	154	154	177	180	184	184	184
ECO38-1S/4	173	173	173	211	211	211	211	211
ECO38-2S/4	192	192	192	230	230	230	230	230
ECO38-3S/4	216	216	216	259	259	259	259	259
ECO38-1L/4	230	240	230	288	288	288	288	288
ECO38-2L/4	278	288	288	326	336	346	346	346
ECO38-3L/4	336	336	336	403	403	403	403	403
ECO40-1S/4	384	384	384	432	446	461	461	461
ECO40-2S/4	432	432	432	490	504	518	518	518
ECO40-3S/4	480	480	480	557	566	576	576	576
ECO40-1L/4	528	528	518	605	619	634	634	634
ECO40-1.5L/4	595	595	595	672	693	714	714	714
ECO40-2L/4	653	653	653	749	766	783	783	783
ECO40-VL/4	720	720	720	864	864	864	864	864

Lembar Pengukuhan Endorsement Sheet

Harus dikukuhkan oleh Surveyor BKI
To be endorsed by BKI Surveyor

<p>Pemeriksaan periodik pertama (11 Oktober 2017 s/d 11 April 2018) <i>First periodical surveillance (11 October 2017 s/d 11 April 2018)</i></p> <p>No. Laporan : <i>Report no.</i></p>	<p>Tanggal : <i>Date</i></p> <p>Surveyor :</p>
<p>Pemeriksaan periodik kedua (11 Oktober 2018 s/d 11 April 2019) <i>Second periodical surveillance (11 Oktober 2018 s/d 11 April 2019)</i></p> <p>No. Laporan : <i>Report no.</i></p>	<p>Tanggal : <i>Date</i></p> <p>Surveyor :</p>
<p>Pemeriksaan periodik ketiga (11 Oktober 2019 s/d 11 April 2020) <i>Third periodical surveillance (11 Oktober 2018 s/d 11 April 2019)</i></p> <p>No. Laporan : <i>Report no.</i></p>	<p>Tanggal : <i>Date</i></p> <p>Surveyor :</p>
<p>Pemeriksaan periodik keempat (11 Oktober 2020 s/d 11 April 2021) <i>Fourth periodical surveillance (11 Oktober 2018 s/d 11 April 2019)</i></p> <p>No. Laporan : <i>Report no.</i></p>	<p>Tanggal : <i>Date</i></p> <p>Surveyor :</p>

