



## 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>Auto-Maskin AS</b>
<b>Address</b>	Hvamsvingen 22, Skjetten, 2013, Norway
<b>Place of Production</b>	Auto-Maskin AS Hvamsvingen 22, Skjetten, 2013, Norway
<b>Type</b>	Control Systems
<b>Description</b>	Engine Control, Alarm and Safety System Marine Pro 400-Series consisting of the units below: Cabinet enclosure: DCU 408E Engine Controller (FW version: 3.x) DCU 410 Engine Controller (FW version: 2.x) DCU 410E Engine Controller (FW version: 3.x) SDU 404 Safety Shutdown Unit (FW version: 1.x) SDU 410 Safety Shutdown Unit (FW version: 1.x) SDU 420 Safety Shutdown Unit (FW version: 1.x) RIO 410 Remote I/O unit (FW version: 1.x) RPS Redundant Power Selector  Stand-alone units: RP 410 Remote Panel (FW version: 2.x) RP 410E Remote Panel FW version: 3.x RP 480i Remote Panel (FW version 3.x)

71 Fenchurch Street, London, EC3M 4BS, United Kingdom

**Matthias Karg**

Electrical & Control - Specialist to Lloyd's Register EMEA  
A member of the Lloyd's Register group

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<b>Trade Name</b>	Marine Pro 400-Series
<b>Application</b>	<p>Marine, offshore and industrial applications for use in environmental categories ENV1, ENV2<sup>(1)</sup> and ENV3<sup>(2)</sup> as defined in Lloyd's Register Type Approval System, Test Specification Number 1 – 2002* and 2021.</p> <p>(1) RP 410*, RP 410E, RP 480i (2) DCU 408E, DCU 410*, DCU 410E, SDU 404, SDU 410, SDU 420, RIO 410, RPS</p>
<b>Specified Standard</b>	<p>IACS UR E10 Rev. 8 /2021 IACS UR E10 Rev. 6: 2014 (DCU 410 and RP 410)</p>
<b>Additional Tests</b>	Low temperature test (-25 °C / 2 h)
<b>Other Conditions</b>	<p>For systems consisting of the listed components the final functional arrangement and application software are to comply with appropriate Lloyd's Register Rules and Regulations and shall be subject to project related Plan Approval Process, when installed on LR classed vessels. Documents and drawings for the actual application are to be provided according to relevant LR Rules and Regulations.</p> <p>Examination of software aspects is restricted to functional operation, as demonstrated in the performance test.</p> <p>All of the above units can be installed as stand-alone devices for special applications.</p> <p>The programmable electronic systems SDU 404, SDU 410 and SDU 420 which implements emergency stop or safety critical functions have satisfied the requirements of the LR's Software Conformity Assessment (Software Conformity Certificate No. LR22131218SS-01, expiry date 30.03.2025) and can be used without independent hard-wired back-up or redundancy within design.</p> <p>Major software changes shall be reported and approved by the Classification</p>

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Society before being implemented in the product.

The remote panel RP 480i must be equipped with an external buzzer when installed on bridge location of LR classed vessels.

The above units DCU 410 and RP 410 must comply with IACS UR E10 Rev. 8 (2021) when intended to be installed on ships contracted for construction on or after 1 January 2022.

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:** 16/20011 (E1)

The Design Appraisal Document HPC1562152-23/MK and its supplementary Type Approval Terms and Conditions form part of this Certificate.