

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Programmable Controller**with type designation(s)
Airmaster Q1

Issued to

Compressor and Machine Controls N.V.
Ronse, Belgium

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft**Application :****Control of air compressors.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Location classes:****Temperature B****Humidity B****Vibration A****EMC A****Enclosure Required protection according to relevant rules
shall be provided upon installation on board**Issued at **Høvik** on **2020-11-05**This Certificate is valid until **2024-12-31**.for **DNV GL**DNV GL local station: **Belgium CMC**Approval Engineer: **Ståle Sneen****Marta Alonso Pontes**
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

The Airmaster Q1 is a pre-programmed logic controller intended for control and monitoring of air compressors. User interface is via the inbuilt 240x160 text and graphic display and membrane keypad. The product consists of the following modules:

- | | |
|-------------------------------------|---------|
| • Main PCB | type Q1 |
| • Optional I/O, QL & LED PCB | type QL |
| • Optional Ethernet board, ECO card | type QE |
| • Optional RS485 board, RS485 board | type QC |

Airmaster Q1 (Main PCB) has the following I/O:

- 1x 4-20 mA analog output
- 2x 4-20 mA analog input
- 1x Software programmable analog input (4-20, 0-10, Pt100, PT1000, KTY, NTC)
- 8x Digital Input
- 8x Relay output
- 4x CT measurement
- 3x Phase sequence monitoring
- 1x RS485 on board
- 1x 24 Vac/dc supply

Place of manufacture

Compressor and Machine Controls N.V.
Industriepark Klein Frankrijk
Klein Frankrijkstraat 40
Ronse, 9600, Belgium

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Application/Limitation

The Airmaster Q1 can be powered both by AC or DC, when operating on DC the Airmaster Q1 shall be powered by a type approved AC/DC converter, power from battery power supply is not under the scope of this certificate.

EMC in the range 2 GHz to 6 GHz according to DNVGL-CG-0339, December 2019 has not been documented. EMC up to 6 GHz must additionally be documented for installation on ships contracted for construction on or after 2022-01-01.

Type Approval documentation

Tests carried out

Applicable tests according to Standard for Certification No. 2.4, April 2006.

Marking of product

Model type "Airmaster Q1" is marked on the product label.

Job Id: **262.1-016790-2**
Certificate No: **TAA00002WE**

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE