



Marine &amp; Offshore

Certificate number: 13682/C0 BV

File number: AP 3578

Product code: 4501H

*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*

**SCHNEIDER ELECTRIC FRANCE**  
CARROS - FRANCE

*for the type of product*

**PROGRAMMABLE LOGIC CONTROL UNITS**  
Quantum Automation Platform.

### Requirements:

Bureau Veritas Rules for the Classification of Steel Ships.

EC Code: 31.

*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: 22 May 2023**

**For Bureau Veritas Marine & Offshore,**

At BV LYON, on 22 May 2018,

Florian Aulen



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](http://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 5 page(s)

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION:

The **Quantum Automation Platforms** are programmable logic control units for Marine applications.

#### 1.1 - Technical Specification:

##### *High-performance Processors*

<b>140 CPU 651 50</b>	Processor for complex application
<b>140 CPU 651 60</b>	Processor for complex application
<b>140 CPU 652 60</b>	Processor for complex application
<b>140 CPU 658 60</b>	Stand Alone Processor
<b>140 CPU 670 60</b>	Hot stand ByProcessor
<b>140 CPU 671 60</b>	Processor for application with redundancy (Hot Stand by)
<b>140 CPU 672 60</b>	Hot Stand ByProcessor
<b>140 CPU 672 61</b>	Processor for application with redundancy (Hot Stand by)
<b>140 CPU 678 61</b>	Hot Stand ByProcessor

##### *Safety Processors*

<b>140 CPU65 160S</b>	StandAlone safety CPU
<b>140 CPU67 160S</b>	Hot standby safety CPU

##### *Power supply Modules*

<b>140 CPS 111 00</b>	120-230V ac- 3A
<b>140 CPS 114 20</b>	115-230V ac 11A, summable
<b>140 CPS 124 20</b>	115-230 Vac 11A, redundant
<b>140 CPS 124 00</b>	115-230 VAC - 10A, summable
<b>140 CPS 214 00</b>	24VDC - 8A, summable
<b>140 CPS 224 00</b>	24VDC - 8A, Redundant
<b>140 CPS 414 00</b>	48...60VDC - 8A, summable
<b>140 CPS 424 00</b>	48...60VDC - 8A, redundant
<b>140 CPS 524 00</b>	125VDC - 8A, redundant

##### *Safety I/O*

<b>140 SAI 94 000S</b>	Safety Analog Inputs
<b>140 SDI 95 300S</b>	Safety Digital Inputs
<b>140 SDO 95 300S</b>	Safety Digital Outputs

##### *Back planes*

<b>140 XBP 002 00</b>	Backplane 2 slots
<b>140 XBP 003 00</b>	Backplane 3 slots
<b>140 XBP 004 00</b>	Backplane 4 slots
<b>140 XBP 006 00</b>	Backplane 6 slots
<b>140 XBP 010 00</b>	Backplane 10 slots
<b>140 XBP 016 00</b>	Backplane 16 slots

##### *Discrete I/O Modules*

<b>140 DDI 353 00</b>	DC 24V 4x8 inputs
<b>140 DDM 390 00</b>	DC 24V 2x8 inputs / 2x4 outputs
<b>140 DDO 353 00</b>	DC 24V 4x8 outputs
<b>140 DDO 353 01</b>	DC 24 V 4x8 outputs
<b>140 DDO 353 10</b>	DC 24V 32x1 outputs
<b>140 DAI 340 00</b>	AC 24V 16x1 inputs
<b>140 DAI 440 00</b>	AC 48V 16x1 inputs
<b>140 DAI 540 00</b>	AC 115V 16x1 inputs
<b>140 DAI 740 00</b>	AC 230V 16x1 inputs
<b>140 DAO 840 00</b>	AC 24...230V 16x1 outputs
<b>140 DAO 840 10</b>	AC 24...115V 16x1 outputs
<b>140 DDI 153 10</b>	DC 5V 4x8 inputs
<b>140 DDI 353 10</b>	DC 24V 4x8 inputs

<b>140 DDI 841 00</b>	DC 10...60V 8x2 inputs
<b>140 DRA 840 00</b>	DC16x1 relay outputs
<b>140 DDO 843 00</b>	16x10...60VDC output
<b>140 DDI 853 00</b>	32x10...60VDC input

**Analog I/O Modules**

<b>140 ACI 040 00</b>	Analog current input 16 channels
<b>140 ACO 020 00</b>	Analog Output
<b>140 AMM 090 00</b>	Analog 4 inputs / 2 outputs
<b>140 ACO 130 00</b>	8 Current outputs
<b>140 AVO 020 00</b>	4 voltage outputs
<b>140 AVI 030 00</b>	8 voltage / current inputs
<b>140 ACI 030 00</b>	Analogue current 8 inputs

**Memory Units**

<b>TSX MCPCx</b>	Flash EPROM and SRAM memories from 224Kb to 2Mb
<b>TSX MFPPx</b>	Flash EPROM Backup memory 96Kb
<b>TSX MFPPx</b>	Flash EPROM Memory 218Kb to 4Mb
<b>TSX MRPCx</b>	Configurable SRAM memory for application/file from 768Kb to 7Mb
<b>TSX MRPFx</b>	SRAM memory for file from 4Mb to 8Mb
<b>TSX MRPPx</b>	SRAM memory for application from 218Kb to 384Kb

**Modules for Remote I/O interface**

<b>140 CRA 931 00</b>	RIO Drop S908 1 channel
<b>140 CRA 932 00</b>	RIO Drop S908 2 channel
<b>140 CRP 931 00</b>	RIO Head S908 1 channel
<b>140 CRP 932 00</b>	RIO Head S908 2 channel
<b>140 CRA 312 00</b>	RIO internet communication
<b>140 CRP 312 00</b>	RIO internet communication
<b>140 NRP 954 00</b>	RIO repeater
<b>140 NRP 954 01C</b>	Remote I/Os optical repeater (only coated version)
<b>140 NRP 312 00</b>	Ethernet Converter multimode fiber
<b>140 NRP 312 01</b>	Ethernet Converter monomode fiber
<b>140 CRA 319 08</b>	S908 Adapter

**Terminal Blocks and Accessories**

<b>140 XTS001 00</b>	IP20 compliant 40 positions terminal block
<b>140 XTS002 00</b>	40 positions terminal block
<b>140 XTS005 00</b>	IP20 compliant 7 positions terminal block

**Communication**

<b>140 NOE 771 00</b>	Ethernet TCP/IP network
<b>140 NOE 771 01</b>	Ethernet TCP/IP network
<b>140 NOE 771 11</b>	Ethernet TCP/IP network
<b>140 NOC 771 00</b>	Ethernet TCP/IP network
<b>140 NOC 771 01</b>	Ethernet TCP/IP network
<b>140 NWM 100 00</b>	Ethernet TCP/IP network
<b>140 NOM 211 00</b>	Modbus SL bus
<b>140 NOM 212 00</b>	Modbus SL bus
<b>140 NOM 252 00</b>	Modbus SL bus
<b>140 NOC 780 00</b>	Communication module with Ethernet
<b>140 NOC 781 00</b>	Communication module with Ethernet
<b>140 NOP 850 00</b>	Communication module with Ethernet

**Counter Modules**

<b>140 ERT 854 20</b>	Time stamping input
<b>140 ERT 854 30</b>	Time stamping input
<b>140 EHC 105 00</b>	Counter 5 Channels

<b>140 EHC 202 00</b>	Counter 2 Channels
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Note: Product designation can be followed by "C" for coated versions, or by "R" for repair modules

### 1.2 - Firmware Version:

Processors	Firmware Version
For High-performance Processors:	3.x
For Safety Processors:	3.x

### 2. DOCUMENTS AND DRAWINGS:

2.1 - Catalogue: "Modicon Quantum Automation Platform and Unity softwares"

ref.: MKTED2120701EN, dated Nov 2015.

2.2 - Quantum with Unity Pro Hardware Reference Manual 05/2010 eng 35010529.07

35010529K01000, dated Sep.2014.

### 3. TEST REPORTS:

Schneider Groupe Laboratory recognized by Bureau Veritas.

Qualification Synthesis Report	EMC Test reports	Mechanical and climatic Test reports	Electrical safety test reports
35006616 P05 001 00	R0211296C-EC	0005M04Q	0212S09Q
3500 6616 P05 002 00	0005M01Q	0005M05Q	0005M08Q
3500 6522 P05 001 00	0005M02Q	0005M06Q	0005M10Q
3500 3351 P05 001 01	0005M03Q	0005M07Q	0005M11Q
3500 3351 P05 002 01	0212S02Q	0005M09Q	0302M05Q
3500 6616 P05 003 00	0212S03Q	0209M13Q	0603S23V
3500 6616 P05 004 00	0212S10Q	0212S01Q	1302S01V
3500 6616 P05 005 00	0302M01Q	0212S06Q	
3500 6616 P05 006 00	0302M02Q	0212S07Q	
A10-009-WT	0302M03Q	0212S08Q	
A09-007-WT-02	0602S07V	0212S11Q	
	0602S09V	0302M04Q	
	0602S26V	0602S30V	
	0602S28V	0602S31V	
	0602S34V	0602S32V	
	R0708284C4-E-C	2007-0804-00-A	
	R0708284C6-E-C	2007-0812-00-A	
	R0710386C2-E	1003S01C	
	0000574900	0806S74E	
	R1007279C1-E-C-A1	0806S76V	
	080677V	080678V	
	1302S02V	0806S83V	
	1302S03V	1302S06V	
	R1303091C2-E-C	1302S08V	
	R1303091C4-E-C	201307-61	
	201307-041	201307-71	
	201307-081	TS1312-T0023-1	
	201307-441	1106S10V	
	ET2013-12-603	1106S12V	
	ET2013-12-612	1106S28V	
	1106S06V	1302S06V	
	1106S08V	1302S07V	
	1106S09V	1302S08V	
	1106S15E		
	1106S25V		
	1106S26E		
	201501-041/061/071/081		
	C15-026-WT		
	ETI2015-3-619		
	1302S02V		
	1302S04V		

**4. APPLICATION / LIMITATION:**

- 4.1 - Each application and configuration is to be submitted to the Society's examination prior to fitting on board.
- 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.**
- The installation shall comply with the Manufacturer's recommendation described in the above-referenced documentation.
- 4.3 - BUREAU VERITAS Environmental Category, **EC Code: 31.**
- 4.4 - For Marine Application , Connecting DC power supply modules are to be supplied by a floating 24V (or 48V) DC supply network.
- An external device, like an Earth Leakage Detector, is to be fitted so as to measure permanently the isolation between 24V (or 48V) and Earth ground in order to give an alarm when the isolation level is too low.
- 4.5 - The machinery protection based on data processing techniques is to be duplicated by another and different system.
- 4.6 - Only Hardware and Software successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer are covered by this certificate.
- 4.7 - In order to lower the radiated emissions, the equipment listed in clause I shall be fitted in appropriate shielded cabinets and used with screened cables.
- 4.8 - Depending on the application, FAT and On-board Tests are to be performed in accordance with requirements for category II and III Equipment.

**5. PRODUCTION SURVEY REQUIREMENTS:**

- 5.1 - The Quantom automation platforms are to be supplied by **SCHNEIDER ELECTRIC FRANCE** 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 - **SCHNEIDER ELECTRIC FRANCE** 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, **SCHNEIDER ELECTRIC FRANCE** has declared to Bureau Veritas the following production site(s):
- SCHNEIDER ELECTRIC FRANCE**  
**ZI Carros, 8ème Rue**  
**06516 CARROS CEDEX**  
**FRANCE**

**6. MARKING OF PRODUCT:**

- 6.1 - Maker's name or trade mark.
- Catalogue Number and Serial Number.
  - Equipment type number or model identification under which it was type-tested.
- 6.2 - Alternatively, the marking may be presented on a display at equipment start-up.
- 6.3 - The title and version of each software element included in the installed software system shall be either marked or displayed on command on the equipment.
- 6.4 - When the marking and the title and version of the software are displayed only on the display, such information shall also be included in the equipment manual.

**7. OTHERS:**

- 7.1 - It is **SCHNEIDER ELECTRIC FRANCE** 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.
- 7.2 - This certificate supersedes the Type Approval Certificate N° 13682/B2 BV issued on 04 Feb 2016 by the Society.

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