

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Programmable Electronic System

with type designation(s)
Modicon M340-M580

Issued to

SCHNEIDER ELECTRIC FRANCE
Carros, France

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Location classes:

Temperature	B / D*
Humidity	B
Vibration	A
EMC	A / B*
Enclosure	Required protection according to the Rules shall be provided upon installation on board

*** See Application / Limitation**

This Certificate is valid until **2018-12-31**.

Issued at **Høvik** on **2016-11-15**

DNV GL local station: **Marseille**

Approval Engineer: **Nils Jarem**

for **DNV GL**

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Odd Magne Nesvåg
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.

Job Id:
Certificate No: **TAA00000VJ**

Product description

	PRODUCT Reference	DESCRIPTION
	CPU	
	BMX P34 1000 (H)	Processor, 1 channel Modbus
	BMX P34 2000	Processor, 2 channel Modbus
	BMX P34 2010	Processor, Modbus CANopen
	BMX P34 20102 (CL)	Processor, Modbus CANopen and Ethernet
(*)	BMX P34 2020 (H)	Processor, Modbus Ethernet
	BMX P34 2030	Processor, Ethernet CANopen
	BMX P34 20302 (H) (CL)	Processor, Ethernet CANopen
(*)	BMX PRA 0100	Peripheral Remote IO Adaptor
(*)	BMX P34 20 ITRB	Processor, 2 channels dedicated to IT business
	BME P58 6040 (C)	Control Processor Unit
	BME P58 5040 (C)	Control Processor Unit
	BME P58 4040	Control Processor Unit
	BME P58 4020	Control Processor Unit
	BME P58 3040	Control Processor Unit
	BME P58 3020	Control Processor Unit
	BME P58 2040 (H)	Control Processor Unit
	BME P58 2020 (H)	Control Processor Unit
	BME P58 1020 (H)	Control Processor Unit
	BME H58 6040 (C)	Control Processor Unit Hot-Standby
	BME H58 4040 (C)	Control Processor Unit Hot-Standby
	BME H58 2040 (C)	Control Processor Unit Hot-Standby
	BME H58 4040K	Control Processor Unit Hot-Standby, bundle
	BME H58 2040K	Control Processor Unit Hot-Standby, bundle
	Power Supply	
(*)	BMX CPS 2000	Power Supply, standard AC
(*)	BMX CPS 2010	Power Supply, standard isolated DC
	BMX CPS 3020 (H)	Power Supply, high power isolated 24VDC to 48VDC
(*)	BMX CPS 3500 (H)	Power Supply, high power AC
	BMX CPS 3540 T	Power Supply, high power AC
	BMX CPS 4002 (H)	Power Supply, redundant, high power AC
	Digital I / O	
	BMX DAI 0814	Digital input module, 08I, 100...120 Vac
(*)	BMX DAI 0805	Digital input module, 08I, 220 Vac
(*)	BMX DAI 1602 (H)	Digital input module, 16I 24VAC/24VDC source
(*)	BMX DAI 1603 (H)	Digital input module, 16I 48VAC
(*)	BMX DAI 1604 (H)	Digital input module, 16I, 100VAC to 120VAC
	BMX DAO 1605 (H)	Digital output module, 16Q triacs
(*)	BMX DDI 1602 (H)	Digital input module, 16I 24VDC sink
	BMX DDI 1603 (H)	Digital input module, 16I 48VDC sink
	BMX DDI 1604 T	Digital input module, 16I 125 V DC sink
	BMX DDI 3202 K (H)	Digital input module, 32I 24VDC sink
	BMX DDI 6402 K (H)	Digital input module, 64I 24VDC sink
(*)	BMX DDM 16022 (H)	Digital mixed I/O module, 8I 24VDC 8Q transistors source
	BMX DDM 16025 (H)	Digital mixed I/O module, 8I 24VDC 8Q relays
(*)	BMX DDM 3202 K	Digital mixed I/O module, 16I 24VDC 16Q transistors source
(*)	BMX DDO 1602 (H)	Digital output module, 16Q transistors source 0.5A
	BMX DDO 1612 (H)	Digital output module, 16Q sink transistors
	BMX DDO 3202 K (C)	Digital output module, 32Q transistors source 0.1A
	BMX DDO 6402 K (C)	Digital output module, 64Q transistors source 0.1A

(*)	BMX DRA 0805 (H)	Digital relay output module, 8Q isolated relays
(*)	BMX DRA 1605 (H)	Digital relay output module, 16Q relays
	BMX DRA 0804 T	Digital relay output module, 8Q isolated relays
	Analog I / O	
(*)	BMX AMI 0410 (H)	Analog input module, 4 U/I In isolated high speed
(*)	BMX AMI 0800	Analog input module, 8 U/I In No Isolated Fast
(*)	BMX AMI 0810 (H)	Analog input module, 8 U/I In Isolated Fast
	BMX AMM 0600 (H)	Analog mixed I/O module, 4 In U/I, 2 Out U/I
(*)	BMX AMO 0210 (H)	Analog output module, 2 U/I isolated Out
(*)	BMX AMO 0410 (H)	Analog output module, 4 U/I Isolated out
(*)	BMX AMO 0802	Analog output module, 8 Current No Isolated out
	BMX ART 0414 (H)	Analog input module, 4 TC/RTD isolated Inputs
	BMX ART 0814 (H)	Analog input module, 8 TC/RTD isolated Inputs
(*)	BME AHI 0812 (H)	Analog input module 8 current channels (HART)
(*)	BME AHO 0412 (C)	Analog output module 8 current channels (HART)
	Communication device	
(*)	BMX NOE 0100 (H)	Communication module Ethernet 10/100 RJ45
(*)	BMX NOE 0110 (H)	M340 Factorycast module
	BMX NOC 0401	Communication module Ethernet 10/100 RJ45
	BMX NOC 0402	Communication module Ethernet 10/100 RJ45
	BME NOC 0301 (C)	Full Communication Ethernet
	BME NOC 0311 (C)	Full FactoryCast Ethernet
	BME NOC 0321 (C)	NOC Control
	BMX NOM 0200 (H)	2 serial link ports
	BMX NGD 0100	Global Data module
	BME NOS 0300 (C)	Ethernet embedded switch
	BME CXM 0100 (H)	CANopen module
	BMX XBE 1000 (H)	Extension rack module
(*)	BMX EIA 0100	AS-interface module
	BMX NOR 0200 (H)	RTU communication module
	BMX NRP 0200 (C)	Communication with optic fiber
	BMX NRP 0201 (C)	Communication with optic fiber
	BMX CRA 31200	Communication module IO adapter
	BMX CRA 31210 (C)	Communication module IO adapter
	BME CRA 31210 (C)	Communication module remote IO adapter
	Counting & Positioning	
	BMX EHC 0200 (H)	Counting module, high speed 2Ch
	BMX EHC 0800 (H)	Counting module, high speed 8Ch
	BMX ETM 0200 H	Frequency module
	BMX MSP 0200	Positioning module (Pulse Output Train)
(*)	BMX EAE 0300 (H)	SSI encoder interface
	BMX ERT 1604 T	Time stamping
	Backplanes	
(*)	BMX XBP 0400 (H)	Backplane, 4 slots
(*)	BMX XBP 0400S	Backplane, 4 slots, NOT extendable, only in pack offer
(*)	BMX XBP 0600 (H)	Backplane, 6 slots
(*)	BMX XBP 0600S	Backplane, 6 slots, NOT extendable, only in pack offer
(*)	BMX XBP 0800 (H)	Backplane, 8 slots
(*)	BMX XBP 1200 (H)	Backplane, 12 slots
(*)	BME XBP 0400 (H)	Backplane Ethernet, 4 slots
(*)	BME XBP 0800 (H)	Backplane Ethernet, 8 slots

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(*)	BME XBP 1200 (H)	Backplane Ethernet, 12 slots
(*)	BME XBP 0602 (H)	Backplane, 6 slots, dual power supplies
(*)	BME XBP 1002 (H)	Backplane, 10 slots, dual power supplies
	Accessories	
	ABE7 CPA xxx	Wiring block for analog inputs
(*)	BMX FC...	Associated Cables
(*)	BMX FT...	Associated Cables
(*)	BMX FTB 2000	Terminal block kit, screw 20 std. points
(*)	BMX FTB 2010	Terminal block kit, screw 20 cir. points
(*)	BMX FTB 2020	Terminal block kit, spring 20 points
(*)	BMX FTB 2820	Terminal block kit, spring 28 points
(*)	BMX RMS 004GPF	Memory card 4Go for M580 CPU
(*)	BMX RMS 008MP	Memory card 8Mo
(*)	BMX RMS 008MPF	Memory card 8Mo / 8Mo Files
(*)	BMX RMS 128MPF	Memory card 8Mb / 128Mo files
(*)	BMX RWS B000M	Memory card NOE Web B
(*)	BMX RWS C016M	Memory card NOE Web C 16Mo
(*)	BMX RWS FC032M	Memory Card 16Mo
(*)	BMX XBC xxxK	BusX Cord (xxx = length)
	BMX XCA USB Hxx	USB cable (x = length)
	BMX XEM 010	Protective cover
	BMX XSP xx00	Shield bar kit , xx slots
	BMX XTS CPSxx	Connector kit
	BMX XTS HSC20	Connector kit
(*)	TCS CCN...	Associated Cables
(*)	TCS MCN 3M4...	Modbus communication cables
	PACK & KIT	
	BMX XBE 2005	Extension Rack KIT (2 BMX XBE 1000 ; Cable BMX XBC 008K ; TSX TLY EX)
	BMX PAM 48000	M340 PACK alternative current, Digital 32 In 16 Out
	BMX PAM 48200	M340 PACK alternative current, Digital 32 In 16 Out, 2 free slots
	BMX PDM 48000	M340 PACK DC current, Digital 32 In 16 Out
	BMX PDM 48200	M340 PACK DC current, Digital 32 In 16 Out, 2 free slots
	BMX PDM 64100	M340 PACK DC current, Digital 32 In 32 Out, 1 free slot

(*): means compliant EMC Class B

(C) : models may be followed by "C" when coated boards

(CL) : models may be followed by "CL" when without SD memory Card

(H) : Models may be followed by "H" for Harsh Environment.

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The Harsh offer allows Modicon M340 use in severe environment :

- Chemical aggressive substances ; products are tested according to :
 - IEC/EN 60721-3-3 , Levels 3C3 and 3C4
 - ISA S71.04, Level GX
 - IEC/EN 60068-2-52 salt mist, test Kb Level 2
 - IEC/EN 60721-3-3 , Level 3S4
- Exposed at climatic aggressive environment :
 - Temperature : -25°C up to 70°C
 - Relative humidity : 5-95% up to 55°C
 - Icing

Note : Able to start in the temperature interval [-25°C,70°C], a monorack configuration can operate at -40°C if placed in an appropriated enclosure.

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Place of manufacture

Schneider Electric Carros (France)
ZI Carros 8^{ème} Rue
F- 06516 Carros, FRANCE

PT Schneider Electric Manufacturing Batam (Indonesia)
Batamindo Industrial Park – Block 1, 4 & 208
Muka Kuning - Batam Riau
29433 INDONESIA

Application/Limitation

All products comply with EMC class A without cabinet nor filter.

(*) These products comply with EMC Class B requirements without either cabinet or filter.

(H) for Harsh Environment. Temperature : -25°C up to 70°C

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.

Product certificate

If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. After the certification the clause for application software control will be put into force.

Clause for application software control

All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV GL for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

Type Approval documentation

Tests carried out

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

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Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number
- power supply ratings

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 at least every second year and at renewal of this certificate.

END OF CERTIFICATE