



Lloyd's
Register

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.

This certificate supersedes certificate number 10/20022(E2) issued 11.03.2015 which is hereby cancelled.
This certificate is issued to:

PRODUCER	Bachmann Electronics GmbH Kreuzäckerweg 33 6800 Feldkirch Austria
DESCRIPTION	Programmable Logic Controller System M1 Series <i>Software Version M-Base: V3.xx V4.xx</i>
TYPE	Processor modules: MC205, MC210 ME203, ME203/N, ME203/E, ME203/EN, ME203/C ME203/CN MH212, MH212/S MPC240, MPC265, MPC270, MPC293 MPE240, MPE265, MPE270 Processor modules with power supply: MX207, MX213, MX220 Digital input/output modules: DI212, DI216, DI232, DI232/np1, DI232/48 DO216, DO232, DO232/48 DOR206, DOR206/230 DIO216, DIO216/4, DIO232, DIO248, DIO264, DIO280
Certificate No.	10/20022 (E3)
Issue Date	12 August 2016
Expiry Date	17 June 2020
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TYPE (continued)

Analogue input/output modules:

AI204/1, AI204/2, AI204/4, AI202/SI, AI204/SI, AI208/SI
AO202, AO202/SI, AO204/SI, AO208/I
AIO202/SI, AIO204/SI, AIO208, AIO208/SI, AIO216, AIO288, AIO288/1

Measurement module for condition monitoring:

AIC212

Temperature recording modules:

PTAI216
TI214, TI214/2

Digital count modules:

CNT204/H, CNT204/R

Positioning modules:

ISI202, ISI202/5, ISI222, ISI222/8

Interface modules:

RS204, RS204/R, RS204/T, RS204/2

PROFINET plug-in module:

PN23

Industrial Ethernet master module:

EM203, EM213

Industrial Ethernet switch module:

SWI205, SWI205/S

FAST Bus modules:

FM211, FS211, FS211/N, FM212, FS212, FS212/N, FM221, FS221, FS221/N,
FM222, FS222, FS222/N

PROFIBUS DP module:

DPM200

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TYPE (continued)

CAN Bus modules:
CM202, CS200, CS200/N

LWL Switch module:
FCS214/F, FCS214/G

DEVICE NET master module:
DNM201

Decentral CAN modules:
DIO16-C, DIO32-C, DIO48-C, DIO264-C

EtherCAT Slave modules:
ECS200

Temperature input/output CAN modules:
TCO204-C, TCO208-C, TCO216-C

Analogue/Digital input/output CAN module:
DA3284-C

Ethernet remote station module:
ERS202

General input/output modules:
GIO212

Grid measurement modules:
GM230, GM260

Grid synchronisation modules:
GSP274

Grid measurement protection module:
GMP232,
GMP232/1, GMP232/2, GMP232/3, GMP232/4

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TYPE (continued)

Proportional Valve Amplifier modules: (#)

PVA202, PVA204, PVA206, PVA208

Safety digital input modules:

SDI208

Safety digital output modules:

SDO204

Safety processor module:

SLC284

Safety Counter module: (#)

SCT202

Shock & vibration module:

SVM300

Backplanes:

BS201, BS201/ET, BS202, BS202/ET, BS203, BS203/ET, BS203/S, BS204, BS204/ET, BS204/S, BS205, BS205/ET, BS205/S, BS206, BS206/ET, BS206/S, BS207, BS207/ET, BS207/S, BS208, BS208/ET, BS208/S, BS209, BS209/ET, BS209/S, BS210, BS210/ET, BS210/S, BS211, BS211/ET, BS211/S, BS212, BS212/ET, BS212/S, BS213, BS213/ET, BS213/S, BS214, BS214/ET, BS214/S, BS215, BS215/ET, BS215/S, BS216, BS216/ET, BS216/S

Power supply modules:

NT250, NT255, NT250/48

Dummy module:

LM201, LM20

Storage media / PC-Cards / Compact Flash Cards:

PCC201/8, PCC201/16, PCC201/32, PCC201/64
CF200/64, CF200/128, CF200/256,
CF200/512, CF200/1G, CF200/2G, CF200/4G, CF200/8G

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APPLICATION	Marine applications for use in environmental categories ENV2, ENV3 and ENV4 as defined in Lloyd's Register Type Approval System, Test Specification Number 1 – 2002 and Test Specification Number 1 – 2015 (#).
ADDITIONAL TESTS	Flame Retardant Test according to IEC60092-101 and IEC60695-11-5 1.) Cold Weather option for all CPU modules possible, marked by /W 2.) Cold Climate option for all modules possible marked by * or CC Low Temperature Test (-25°C/16hrs) Compass Safe Distance Test (Standard=50cm; Steering=50cm)
DESIGN STANDARDS	Manufacturer's specification. M1 to be used in enclosures, only.
OTHER CONDITIONS	Type approval of products according to Test Specification No.1 is essentially a Type Approval of hardware. Systems comprising the components described above are subject to a separate plan appraisal according to applicable Rules and Regulations when installed on LR classed vessels. The equipment exceeds the maximum conducted emission level for bridge and deck zones. If the units are to be installed within these areas, a Common Mode Filter with minimum 2x 1.8mH (e.g. Phoenix NEF 1-10, order no. 2788977) is to be installed. For selection of the choke's rated current see Manufacturer's Specification.

The 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.

The Design Appraisal Document No. HTS/ETS 34049-16 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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