



Marine & Offshore

Certificate number: 29467/B0 BV

File number: AP4431

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

Saia-Burgess Controls AG

Murten - SWITZERLAND

for the type of product

PROGRAMMABLE LOGIC CONTROL UNITS

PCD3 and PCS1 series

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: 23 Jul 2025

For Bureau Veritas Marine & Offshore,

At BV HAMBURG, on 23 Jul 2020,

Dirk Hoepfner



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. 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 **PCD3.M2xx** series are compact programmable logic controller with dedicated I/O board and a fixed number of I/Os.

The **PCD3.M3xxx**, **PCD3.M5xxx** and **PCD3.M6xxx** series are modular PLC's with up to 1023 I/O's.

The **PCS1** series are controller units with optional display, manual operation and/or communication interfaces.

1.1 - Hardware components of PLC:

Type	Designation	FW-Version
CPU basic modules / Base units		
PCD3.M2030V6	CPU with 38I/Os; 512kB; 1MB Flash; 1xUSB, 1xRS485	1.2x.xx
PCD3.M2130V6	CPU with 38I/Os; 512kB; 1MB Flash; 1xUSB, 1xRS485, 1xEthernet	1.2x.xx
PCD3.M2137V6	CPU with 38I/Os; 512kB; 1MB Flash; 1xUSB, 1xRS485, 1xEthernet, STEP7	1.1x.xx
PCD3.M2230A4T1	CPU with 14I/Os; 512kB; 1MB Flash; 1x USB, 1x RS485, PSTN	1.2x.xx
PCD3.M2230A4T3	CPU with 14I/Os; 512kB; 1MB Flash; 1x USB, 1x RS485, ISDN	1.2x.xx
PCD3.M2230A4T5	CPU with 14I/Os; 512kB; 1MB Flash; 1x USB, 1x RS485, GSM/GPRS	1.2x.xx
PCD3.M2330A4T1	CPU with 14I/Os; 512kB; 1MB Flash; 1x USB, 1x RS485, 1x Ethernet, PSTN	1.2x.xx
PCD3.M2330A4T3	CPU with 14I/Os; 512kB; 1MB Flash; 1x USB, 1x RS485, 1x Ethernet, ISDN	1.2x.xx
PCD3.M2330A4T5	CPU with 14I/Os; 512kB; 1MB Flash; 1x USB, 1x RS485, 1x Ethernet, GSM/GPRS	1.2x.xx
PCD3.M3020	CPU with 64I/Os; 128kB Flash; 1x USB, 1x RS485	1.2x.xx
PCD3.M3120	CPU with 64I/Os; 128kB Flash; 1x USB, 1x RS485, 1xEthernet	1.2x.xx
PCD3.M3230	CPU with 1023I/Os; 512kB Flash; 1x USB, 1x RS485	1.2x.xx
PCD3.M3330	CPU with 1023I/Os; 512kB Flash; 1x USB, 1x RS485, 1xEthernet	1.2x.xx
PCD3.M5340	CPU with 1MB Flash; 1xUSB, 1xRS232, 1xRS485/RS422, 1x Ethernet	1.2x.xx
PCD3.M5347	CPU with 1MB Flash; 1xUSB, 1xRS232, 1xRS485/RS422, 1x Ethernet, Step7	1.1x.xx
PCD3.M5440	CPU with 1MB Flash; 1xUSB, 1xRS232, 1xRS485	1.2x.xx
PCD3.M5447	CPU with 1MB Flash; 1xUSB, 1xRS232, 1xRS485, STEP7	1.1x.xx
PCD3.M5540	CPU with 1MB Flash; 1xUSB, 1xRS232, 1xRS485, 1xEthernet	1.2x.xx
PCD3.M5547	CPU with 1MB Flash; 1xUSB, 1xRS232, 1xRS485, 1xEthernet, STEP7	1.1x.xx
PCD3.M6240	CPU with 1MB Flash; 1xUSB, 1xRS232, 1xRS485, 1xCAN	1.2x.xx
PCD3.M6340	CPU with 1MB Flash; 1xUSB, 1xRS232, 1xRS485, 1xCAN, 1xEthernet	1.2x.xx
PCD3.M6347	CPU with 1MB Flash; 1xUSB, 1xRS232, 1xRS485, 1xCAN, 1xEthernet, STEP7	1.1x.xx
I/O expansion module holder for Base units		
PCD3.C100	Module with 4 I/O slots	n/a
PCD3.C110	Module with 2 I/O slots (connection with cable only)	n/a
PCD3.C200	Module with 4 I/O slots with 24VDC power supply (connection with cable only)	n/a
Remote I/O-stations with 4 module slots		
PCD3.T665	Head station with 512kB Flash; 1x USB, 1xEthernet	1.1x.xx
PCD3.T666	Head station with 512kB Flash; 1x USB, 1x RS485, 1xEthernet	1.1x.xx
PCD3.T667	Head station with 512kB Flash; 1x USB, 1x RS485, 1xEthernet, STEP7	1.1x.xx
PCD3.T760	Head station with 128kB Flash; Ports: 1xRS-232 or Profibus-DP	1.xxx
Communication interfaces		
PCD3.F110	RS-422 with RTS/CTS or RS-485 (electrical connected)	n/a
PCD3.F121	RS-232 with RTS/CTS, DTR/DSR, DCD	n/a
PCD3.F130	TTY/current loop 20mA; electrical isolated	
PCD3.F150	RS-485 electrically isolated, with terminating resistors	n/a
PCD3.F180	Belimo MP-Bus, for connecting up to 8 drives on one line	n/a
PCD3.F210	RS-422 / RS-485 plus PCD7.F1xxS as an option	V020
PCD3.F221	RS-232 plus PCD7.F1xxS as an option	V020
PCD3.F281	Belimo MP-Bus with slot for PCD7.F1xxS modules	V020
Digital input modules		
PCD3.E110	8xIn; 24VDC; 8ms	n/a
PCD3.E111	8xIn; 24VDC; 0.2ms	n/a
PCD3.E112	8xIn; 7.5...15VDC; 9ms	n/a
PCD3.E116	8xIn; 3.5...7VDC; 0.2ms	n/a
PCD3.E160	16xIn; 24VDC; 8ms	n/a
PCD3.E161	16xIn; 24VDC; 0.2ms	n/a
PCD3.E165	16xIn; 24VDC; 8ms	n/a
PCD3.E166	16xIn; 24VDC; 0.2ms	n/a

Type	Designation	FW-Version
Digital input modules		
PCD3.E500	6xIn; 115-230VAC; 20ms; electrical isolated	n/a
PCD3.E520	6xIn; 24VDC; electrical isolated	n/a
PCD3.E523	6xIn; 48VDC; electrical isolated	n/a
PCD3.E610	8xIn; 24VDC; 10ms; electrical isolated	n/a
PCD3.E611	8xIn; 24VDC; 0.2ms; electrical isolated	n/a
PCD3.E612	8xIn; 12VDC; 9ms; electrical isolated	n/a
PCD3.E613	8xIn; 30...60VDC; 9ms; electrical isolated	n/a
PCD3.E616	8xIn; 3.5...7VDC; 0.2; electrical isolated	n/a
Digital input/output modules		
PCD3.A860	2xIn, 2xOut relay; In: 24VDC; Out: 12A/250VAC; electrical isolated	V010
PCD3.B100	2xIn, 2xOut, 4xIn/Out; In: 24VDC; Out: 12A/250VAC; 8ms	n/a
Digital output modules		
PCD3.A200	4xOut relay; 2A/230VAC; electrical isolated	n/a
PCD3.A210	4xOut relay; 2A/230VAC; electrical isolated	n/a
PCD3.A220	6xOut relay; 2A/230VAC; electrical isolated	n/a
PCD3.A251	8xOut relay; 2A/48VAC; electrical isolated	n/a
PCD3.A300	6xOut transistor; 2A/24VDC	n/a
PCD3.A400	8xOut transistor; 0.5A/24VDC	n/a
PCD3.A410	8xOut transistor; 0.5A/24VDC; electrical isolated	n/a
PCD3.A460	16xOut, transistor; 0.5A/24VDC	n/a
PCD3.A465	16xOut, transistor; 0.5A/24VDC	n/a
PCD3.A810	4xOut, relay; 2A/50VDC; 5A/250VAC or 6A/250VAC; electrical isolated	n/a
Analogue input modules		
PCD3.W200	8xIn; 0...10V; 10bit	n/a
PCD3.W210	8xIn; 0...20mA; 10bit	n/a
PCD3.W220	8xIn; Pt/Ni 1000; 10bit	n/a
PCD3.W300	8xIn; 0...10V; 12bit	V02x
PCD3.W305	7xIn; 0...10V; 12bit; electrical isolated	V02x
PCD3.W310	8xIn; 0...20mA; 12bit	V02x
PCD3.W315	7xIn; 0(4)...20mA; 12bit; electrical isolated	V02x
PCD3.W325	7xIn; -10V...10V; 12bit; electrical isolated	V02x
PCD3.W340	8xIn; 0...10V; 0...20mA; Pt/Ni 1000; 12bit	V02x
PCD3.W350	8xIn; Pt/Ni 100; 12bit	V02x
PCD3.W360	8xIn; Pt/Ni 1000; 12bit	V02x
PCD3.W720	2xIn; Weighing module; up to 18bit	V02x
PCD3.W745	4xIn; Pt/Ni 100/1000 or thermocouples J,K; 16bit; electrical isolated	V02x
Analogue output modules		
PCD3.W400	4xOut; 0...10V; 8bit	V02x
PCD3.W410	4xOut; 0...10V; 0(4)...20mA; 8bit	V02x
PCD3.W600	4xOut; 0...10V; 12bit	V02x
PCD3.W605	6xOut; 0...10V; 10bit; electrical isolated	V02x
PCD3.W610	4xOut; 0...10V; +/-10V; 0(4)...20mA; 12bit	V02x
PCD3.W615	4xOut; 0(4)...20mA; 10bit; electrical isolated	V02x
PCD3.W625	6xOut; +/-10V; 10bit; electrical isolated	V02x
PCD3.W800	4xOut; 0...10V; 10bit; short circuit protected	V01x
Analogue input/output modules		
PCD3.W500	2xIn; 0...10V; +/-10V; 12bit; 2xOut; 0...10V; +/-10V; short circuit protected; 12bit	V03x
PCD3.W525	4xIn; 2xOut; 0...10V; 0 (4)...20mA; Pt/Ni 1000; Pt 500; electrical isolated	V03x
Counter modules		
PCD3.H100	2xIn; 24VDC; 16bit; up to 20kHz; 1xOut; 24VDC	n/a
PCD3.H110	4xIn; 24VDC; 16bit; up to 100kHz; 2xOut; 24VDC	n/a
PCD3.H112	4xIn; 24VDC; 24bit; up to 150kHz; 1xOut; 24VDC	n/a
PCD3.H114	8xIn; 24VDC; 24bit; up to 150kHz; 1xOut; 24VDC	n/a
PCD3.H150	1xIn (SSI); up to 500kHz; electrical isolated; 1xOut(SSI); 4xOut; 24VDC	n/a
PCD3.H210	4xIn; 24VDC; 4xOut for stepper motor	n/a
PCD3.H310	1xIn (encoder); 24VDC; up to 100kHz; 1xOut; +/-10V; 12bit	n/a
PCD3.H311	1xIn (encoder); 5VDC; up to 100kHz; 1xOut; +/-10V; 12bit	n/a

Type	Designation	FW-Version
Accessories		
PCD3.K010	Extension plug	n/a
PCD3.K106	Extension cable for multiple-row mounting 0.7 m	n/a
PCD3.K116	Extension cable for multiple-row mounting 1.2 m	n/a
PCD3.M3	Battery holder with LED	n/a
PCD3.M5	Battery holder with LED	n/a
PCD3.M6	Battery holder with LED	n/a
PCD3.R010	Battery kit for PCD3.M3xxx Basic CPU (incl. lithium battery CR2032)	n/a
PCD3.R5xx	Flashcards with file system, BACnet or LonIP	n/a
PCD3.R600	Basic module with slot for SD flashcards	n/a
PCS1 - Controller unit		
PCS1.C42x	4xDI; 2xDI/DO; 4xRO; 6xAI; 3xAO; 1MB Flash; 1xRS232; 1xRS485	V0F0
PCS1.C62x	6xDI; 4xDI/DO; 8xRO; 8xAI; 4xAO; 1MB Flash; 1xRS232; 1xRS485	V0F0
PCS1.C82x	12xDI; 4xDI/DO; 8xRO; 16xAI; 4xAO; 1MB Flash; 1xRS232; 1xRS485	V0F0
PCS1.C88x	12xDI; 4xDI/DO; 8xRO; 16xAI; 4xAO; 1MB Flash; ; 1xRS232; 1xRS485; 1xLON	V0F0

Each type designation may be followed by Zx or Zxx where x are digits for e.g. customer specific layout or preconfigured set-up.

1.2 - Main characteristics:

Power Supply: 24V DC
Degree of Protection: IP20

2. DOCUMENTS AND DRAWINGS:

- P+P26/388E10 dated 09.2005; P+P26/389E3 dated 08.2005; P+P26/397E6 dated 11.2005;
- P+P26/460pE1 dated 03.2008; P+P26/473E6 dated 05.2009; P+P26-215_EN10 dated 02.2013
- 26/789 Version E5 dated 31.01.2005; 26/861 Version EN2 dated 2009-07-10; 26/862 Version pEN1 dated 2009-02-24;
- 12446057 Rev. b dated 10.12.08; 124465901 Rev. b dated 19.01.2006; 124465988 Rev.d dated 21.01.2009;
- 124466013 Rev.b dated 07.10.2008; 124466039 Rev.a dated 8.12.2008; 124466040 dated 28.10.2008;
- 410048400 Rev. b dated 19.03.09; 410048410 Rev. b dated 09.11.07; 410148310 Rev. a dated 15.04.09;
- 410476140 Rev. a dated 17.09.08; 463667930 Rev. d dated 21.06.2006; 463669900 Rev. e dated 21.01.2009;
- 463670610 Rev. a dated 10.12.2008; 463670630 dated 29.10.2008; 463670640 dated 29.10.2008;
- 463670650 Rev. b dated 18.06.2009

3. TEST REPORTS:

- Mesco Engineering GmbH:
21_18602_emc2 Rev. 2 dated 07.07.05
montena emc sa:
- 15'776 dated June 19, 2009; 15'777 dated June 19, 2009; 14353 dated November 18, 2005
RUAG:
- 5286 dated November 12, 2002; 6139-2 Version 1 dated Mai 14, 2008
Saia-Burgess Controls AG:
- MP-EPCD3-001 Rev. 04 dated 29.9.05; MP-EPCD3-005 dated 12.04.05;
- MP-EPCD3-009 dated 13.06.05; MP-EPCD3-014 dated 06.06.05; MP-EPCD3-015 dated 5.10.2005;
- 09033-MP_TATR-PCD3 COMPACT dated 2010-02-04; 09033-MP_TATR-PCD3 WAC dated 2010-02-04

4. APPLICATION/LIMITATION:

- 4.1 - Bureau Veritas Rules and Regulations for the Classification of Steel Ships
- 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.**
- 4.3 - Bureau Veritas Environmental Category, **EC Code: 31**
- 4.4 - The equipment fulfils the EMC requirements for installation on the Bridge and Deck Zone.
- 4.5 - Documents relating to each application are to be submitted to the Society's examination prior fitting on board.
- 4.6 - Depending on the Application, Factory Acceptance and On-board Tests are to be performed in accordance with requirements for Category II or III Equipment.
- 4.7 - Only Hardware and Firmware / Software successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer is covered by this certificate.
- 4.8 - The wireless technology of components PCD3.M2230A4T5 and PCD3.M2330A4T5 is not part of certification.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above mentioned products are to be supplied by **Saia-Burgess Controls AG** 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 - **Saia-Burgess Controls AG** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products:

Saia-Burgess Controls AG
Bahnhofstrasse 18
3280 Murten
SWITZERLAND

6. MARKING OF PRODUCT:

- Maker's name or trademark
- Equipment type or model identification
- Date of manufacture and/or serial number
- 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.

7. OTHERS:

7.1 - It is the responsibility of **Saia-Burgess Controls AG** 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° 29467/A0 BV issued on 06 Jun 2013 by the Society.

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