



Certificate number: 14017/B0 BV

File number: AP 3612

Product code: 4501H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

www.veristar.com

TYPE APPROVAL CERTIFICATE

This certificate is issued to

Saia-Burgess Controls AG
Murten - SWITZERLAND

for the type of product

PROGRAMMABLE LOGIC CONTROL UNITS

PCD1, PCD2 series and PCD7 modules

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships.

This certificate is issued to attest that BUREAU VERITAS 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: 16 May 2018

For BUREAU VERITAS,

At BV HAMBURG, on 16 May 2013,

Dirk Hoepfner

A handwritten signature in black ink, appearing to read '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. 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 Division 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 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.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

The **PCD1** series are compact programmable logic controller with up to 4 I/O slots. The **PCD2** series are modular programmable logic controller with accessories. The **PCD7** series are accessories for PLC's of **PCD1** and **PCD2** series.

1.1 - Hardware components of PCD1 system:

Type	Designation	FW-Version
CPU basic modules / Base units		
PCD1.M110	CPU with 4 I/O slots; RS422/485; 30 days protection of RAM	V08x
PCD1.M120	CPU with 4 I/O slots; 1xSerial data socket; clock (RTC); 7days retention	V08x
PCD1.M125	CPU with 4 I/O slots; 1xSerial data socket; clock (RTC); 7days retention	V0Fx
PCD1.M130	CPU with 4 I/O slots; 1xSerial data socket; clock (RTC); 1-3years retention	V08x
PCD1.M135	CPU with 4 I/O slots; 1xSerial data socket; clock (RTC); 1-3years retention	V0Fx
PCD1.M137	CPU with 4 I/O slots; 1xSerial data socket; MPI interface; Step7	V3.1xx
PCD1.M0160E0	CPU with 18xI/Os; 1xUSB; 1xRS485; 2xEthernet	1.2x.xx
PCD1.M2020	CPU with 2 I/O slots; with 18xI/Os; 1xUSB; 1xRS485	1.2x.xx
PCD1.M2120	CPU with 2 I/O slots; with 18xI/Os; 1xUSB; 1xRS485; 2xEthernet	1.2x.xx
PCD1.M2160	CPU with 2 I/O slots; with 18xI/Os; 1xUSB; 1xRS485; 2xEthernet	1.2x.xx
PCD1.M2110R1	CPU with 1 I/O slots; with 24xI/Os; 1xUSB; 1xRS485; 2xEthernet	1.2x.xx
PCD1.T240	Remote I/O-station with 4 I/O slots; 1xRS485	xE0

1.2 - Hardware components of PCD2 system:

Type	Designation	FW-Version
CPU basic modules / Base units		
PCD2.M110	CPU with 8 I/O slots; limited extension	V09x
PCD2.M120	CPU with 8 I/O slots; expansion connector	V09x
PCD2.M127	CPU with 8 I/O slots; expansion connector; 132kB RAM; Step7	V3.1xx
PCD2.M150	CPU with 8 I/O slots; expansion connector; faster	V0Fx
PCD2.M157	CPU with 8 I/O slots; expansion connector; faster; 512kB RAM; Step7	V3.1xx
PCD2.M170	CPU with 8 I/O slots; expansion connector; faster; 1MB RAM	V0Fx
PCD2.M177	CPU with 8 I/O slots; expansion connector; faster; 1MB RAM; Step7	V3.1xx
PCD2.M480	CPU with 8 I/O slots; expansion connector; 1MB RAM; 1xUSB	1.0x.xx
PCD2.M487	CPU with 8 I/O slots; expansion connector; 1MB RAM; 1xUSB; Step7	1.0x.xx
PCD2.M5440	CPU with 8 I/O slots; with 8xI/Os; 1xUSB; 2xRS232/RS485	1.2x.xx
PCD2.M5540	CPU with 8 I/O slots; with 8xI/Os; 1xUSB; 2xRS232/RS485; 2xEthernet	1.2x.xx
PCD2.M5547	CPU with 8 I/O slots; with 8xI/Os; 1xUSB; 2xRS232/RS485; 2xEthernet; Step7	1.1x.xx
I/O expansion module holder for Base units		
PCD2.C100	Module with 8 I/O slots; connection with cable only	n/a
PCD2.C150	Module with 4 I/O slots; connection with cable only	n/a
PCD2.C1000	Module with 4 I/O slots	n/a
PCD2.C2000	Module with 8 I/O slots	n/a
Serial interface modules/Communication modules		
PCD2.F2100	RS422/485 plus PCD7.F1xx as an option	V020
PCD2.F2210	RS232 plus PCD7.F1xx as an option	V020
PCD2.F2810	Belimo MP-Bus with slot for PCD7.F1xx modules	V020
PCD2.F5xx	Real Time Clock, 7-segment display, serial ports, interface for display PCD7.D160	n/a
PCD2.T500	MP-Bus (Belimo)	n/a
Digital input modules/Digital output modules		
PCD2.E11x	8xIn; 24VDC; sink/source	n/a
PCD2.E16x	16xIn 24VDC; sink/source	n/a
PCD2.E61x	8xIn; 24VDC; isolated	n/a
PCD2.E500	6xIn; 115-230VAC; isolated	n/a
PCD2.E520	6xIn; 24VAC; isolated	n/a
PCD2.E523	6xIn; 48VAC; isolated	n/a
PCD2.A2xx	4xOut; relay 230V/2A with VDR/RC protection	n/a
PCD2.A220	6xOut; relay 230V/2A	n/a
PCD2.A250	8xOut; relay 48V/2A	n/a
PCD2.A300	6xOut; transistor 24V/2A	n/a
PCD2.A400	8xOut; transistor 24V/0.5A	n/a
PCD2.A410	8xOut; transistor 24V/0.5A; isolated	n/a



Certificate number: 14017/B0 BV

File number: AP 3612

Product code: 4501H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

www.veristar.com

TYPE APPROVAL CERTIFICATE

This certificate is issued to

Saia-Burgess Controls AG
Murten - SWITZERLAND

for the type of product

PROGRAMMABLE LOGIC CONTROL UNITS

PCD1, PCD2 series and PCD7 modules

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships.

This certificate is issued to attest that BUREAU VERITAS 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: 16 May 2018

For BUREAU VERITAS,

At BV HAMBURG, on 16 May 2013,

Dirk Hoepfner

A handwritten signature in black ink, appearing to read 'Hoepfner', is written over a light blue grid background.



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. 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 Division 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 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.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

The **PCD1** series are compact programmable logic controller with up to 4 I/O slots. The **PCD2** series are modular programmable logic controller with accessories. The **PCD7** series are accessories for PLC's of **PCD1** and **PCD2** series.

1.1 - Hardware components of PCD1 system:

Type	Designation	FW-Version
CPU basic modules / Base units		
PCD1.M110	CPU with 4 I/O slots; RS422/485; 30 days protection of RAM	V08x
PCD1.M120	CPU with 4 I/O slots; 1xSerial data socket; clock (RTC); 7days retention	V08x
PCD1.M125	CPU with 4 I/O slots; 1xSerial data socket; clock (RTC); 7days retention	V0Fx
PCD1.M130	CPU with 4 I/O slots; 1xSerial data socket; clock (RTC); 1-3years retention	V08x
PCD1.M135	CPU with 4 I/O slots; 1xSerial data socket; clock (RTC); 1-3years retention	V0Fx
PCD1.M137	CPU with 4 I/O slots; 1xSerial data socket; MPI interface; Step7	V3.1xx
PCD1.M0160E0	CPU with 18xI/Os; 1xUSB; 1xRS485; 2xEthernet	1.2x.xx
PCD1.M2020	CPU with 2 I/O slots; with 18xI/Os; 1xUSB; 1xRS485	1.2x.xx
PCD1.M2120	CPU with 2 I/O slots; with 18xI/Os; 1xUSB; 1xRS485; 2xEthernet	1.2x.xx
PCD1.M2160	CPU with 2 I/O slots; with 18xI/Os; 1xUSB; 1xRS485; 2xEthernet	1.2x.xx
PCD1.M2110R1	CPU with 1 I/O slots; with 24xI/Os; 1xUSB; 1xRS485; 2xEthernet	1.2x.xx
PCD1.T240	Remote I/O-station with 4 I/O slots; 1xRS485	xE0

1.2 - Hardware components of PCD2 system:

Type	Designation	FW-Version
CPU basic modules / Base units		
PCD2.M110	CPU with 8 I/O slots; limited extension	V09x
PCD2.M120	CPU with 8 I/O slots; expansion connector	V09x
PCD2.M127	CPU with 8 I/O slots; expansion connector; 132kB RAM; Step7	V3.1xx
PCD2.M150	CPU with 8 I/O slots; expansion connector; faster	V0Fx
PCD2.M157	CPU with 8 I/O slots; expansion connector; faster; 512kB RAM; Step7	V3.1xx
PCD2.M170	CPU with 8 I/O slots; expansion connector; faster; 1MB RAM	V0Fx
PCD2.M177	CPU with 8 I/O slots; expansion connector; faster; 1MB RAM; Step7	V3.1xx
PCD2.M480	CPU with 8 I/O slots; expansion connector; 1MB RAM; 1xUSB	1.0x.xx
PCD2.M487	CPU with 8 I/O slots; expansion connector; 1MB RAM; 1xUSB; Step7	1.0x.xx
PCD2.M5440	CPU with 8 I/O slots; with 8xI/Os; 1xUSB; 2xRS232/RS485	1.2x.xx
PCD2.M5540	CPU with 8 I/O slots; with 8xI/Os; 1xUSB; 2xRS232/RS485; 2xEthernet	1.2x.xx
PCD2.M5547	CPU with 8 I/O slots; with 8xI/Os; 1xUSB; 2xRS232/RS485; 2xEthernet; Step7	1.1x.xx
I/O expansion module holder for Base units		
PCD2.C100	Module with 8 I/O slots; connection with cable only	n/a
PCD2.C150	Module with 4 I/O slots; connection with cable only	n/a
PCD2.C1000	Module with 4 I/O slots	n/a
PCD2.C2000	Module with 8 I/O slots	n/a
Serial interface modules/Communication modules		
PCD2.F2100	RS422/485 plus PCD7.F1xx as an option	V020
PCD2.F2210	RS232 plus PCD7.F1xx as an option	V020
PCD2.F2810	Belimo MP-Bus with slot for PCD7.F1xx modules	V020
PCD2.F5xx	Real Time Clock, 7-segment display, serial ports, interface for display PCD7.D160	n/a
PCD2.T500	MP-Bus (Belimo)	n/a
Digital input modules/Digital output modules		
PCD2.E11x	8xIn; 24VDC; sink/source	n/a
PCD2.E16x	16xIn 24VDC; sink/source	n/a
PCD2.E61x	8xIn; 24VDC; isolated	n/a
PCD2.E500	6xIn; 115-230VAC; isolated	n/a
PCD2.E520	6xIn; 24VAC; isolated	n/a
PCD2.E523	6xIn; 48VAC; isolated	n/a
PCD2.A2xx	4xOut; relay 230V/2A with VDR/RC protection	n/a
PCD2.A220	6xOut; relay 230V/2A	n/a
PCD2.A250	8xOut; relay 48V/2A	n/a
PCD2.A300	6xOut; transistor 24V/2A	n/a
PCD2.A400	8xOut; transistor 24V/0.5A	n/a
PCD2.A410	8xOut; transistor 24V/0.5A; isolated	n/a

Type	Designation	FW-Version
Digital input modules/Digital output modules		
PCD2.A46x	16xOut; transistor 24V/0.5A	n/a
PCD2.B100	2xIn; 2xOut; 4xIn/Out; 24VDC/24VDC/0.5A	n/a
Analogue input modules/Analogue output modules		
PCD2.W10x	4xIn; 12bit; 0...10V; +/-10V; 0...20mA; +/-20mA	n/a
PCD2.W11x	4xIn; 12bit; Pt/Ni100; Pt/Ni1000	n/a
PCD2.W2xx	8xIn; 10bit; 0...10V; 0...20mA; Pt1000	n/a
PCD2.W3xx	8xIn; 12bit; 0...10V; 0...20mA; Pt/Ni100; Pt1000	02x
PCD2.W3x5	7xIn; 12bit; 0...10V; 0...20mA; isolated	02x
PCD2.W4xx	4xOut; 8bit; 0...10V; 0...20mA	02x
PCD2.W5xx	4xIn/Out; 12bit; 0...10V; 0...20mA	02x
PCD2.W525	4xIn; 14bit; 2xOut; 12bit; 0...10V; 0(4)...20mA; Pt/Ni1000; Pt500	03x
PCD2.W6xx	4xOut; 12bit; 0...10V; +/-10V; 0...20mA	02x
PCD2.W605	6xOut; 10bit; 0...10V	02x
PCD2.W615	4xOut; 10bit; 0...20 mA/4...20 mA, parameters can be set	02x
PCD2.W625	6xOut; 10bit; +/-10V	02x
PCD2.W720	2xIn; up to 18bit; Weighing module with 2 systems for up to 6 weighing cells	02x
PCD2.W745	4xIn; 16bit; for TC type J, K and 4-wire Pt/Ni 100/1000	02x
Combined Digital/Analogue modules		
PCD2.G400	10xDI; 2xAI, 10bit, 0...10V; 6xAI, 10bit, Pt/Ni 1000; 8xDO; 6xAO, 8bit, 0...10V	n/a
PCD2.G410	16xDI; 4xAI, 10bit, I/U/T; 4xRO, 250VAC; 4xAO, 8bit, U/I	n/a
Counter modules		
PCD2.H100	2xIn; 24VDC; 16bit; up to 20kHz; 1xOut; 24VDC	n/a
PCD2.H110	4xIn; 24VDC; 16bit; up to 100kHz; 2xOut; 24VDC	n/a
PCD2.H150	1xIn (SSI); up to 500kHz; electrical isolated; 1xOut(SSI); 4xOut; 24VDC	n/a
Modem modules:		
PCD2.T813	analogue modem 33.6kbps	2.0x
PCD2.T850	digital modem ISDN-TA	2.0x
Accessories		
PCD2.K010	Extension plug	n/a
PCD2.K106	Extension cable for multiple-row mounting	n/a

1.3 - Hardware components of PCD7 system:

Type	Designation	FW-Version
Serial interface modules/Communication modules		
PCD7.F110/F110S	RS422 with RTS/CTS or RS485 (electrical connected)	n/a
PCD7.F121/F121S	RS232 with RTS/CTS, DTR/DSR, DCD	n/a
PCD7.F150/F150S	RS485 electrically isolated, with terminating resistors	n/a
PCD7.F180/F180S	Belimo MP-Bus, for connecting up to 8 drives on one line	n/a
PCD7.F65x	Ethernet module	V044
PCD7.F700	Profibus FMS module	n/a
PCD7.F750	Profibus DP Master module	V1.1
PCD7.F77x	Profibus DP Slave module	n/a
PCD7.F80x	LonWorks connection module	V006
PCD7.F7400	CAN communication module	n/a
PCD7.F7500	Profibus DP Master communication module	V01x
Bus components for RS485 Networks:		
PCD7.T1xx	repeater RS485, converter RS232 & RS485, termination box.	n/a
Memory module:		
PCD7.R4xx	Card with flash memory backup module	n/a
PCD7.R5xx	Card with flash memory backup module	n/a
PCD7.R-CFxxx	Compact flash memory card	n/a
PCD7.R-SDxxx	SD flash memory card	n/a
Vario Plus modules:		
PCD7.L97x	VARIO-PLUS reduced	n/a
PCD7.L98x	VARIO-PLUS standard	n/a
PCD7.L99x	VARIO-PLUS extended	n/a

Type	Designation	FW-Version
Text panel/Graphic panel:		
PCD7.D16x	Text panel; direct mounting on PCD1 or PCD2.	V02
PCD7.D170	Text panel; 5 keys; 1xRS232; IP65 (front)	V02
PCD7.D202	Text panel; 25 keys; 1xRS232; IP65 (front)	V01x
PCD7.D230	Graphic panel; 1 dial knob; buzzer; 1xRS232/422/485; IP54 (front)	V040
PCD7.D231	Graphic panel; 10 keys; buzzer; 1xRS232/422/485; IP65 (front)	V040
PCD7.D232	Graphic panel; 25 keys; buzzer; 1xRS232/422/485; IP65 (front)	V040
PCD7.D250	Text panel; 29 keys; 1xRS232; IP65 (front)	V011
PCD7.D3100E	Embedded text display module	V0.xx

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

1.4 - Main characteristics:

Power Supply: 24V DC
Degree of Protection: IP20

2. DOCUMENTS AND DRAWINGS:

- List of Modules covered by Approvals, ref. RM/449, April 2002, rev. 04.06.04 DG
- CL-EPC-015 Rev.03, dated 30.11.01; 26/347 E1 dated 11.2001; 26/348 E1 dated 11.2001; 26/349 E2 dated 11.2001;
- 26/350 E1 dated 11.2001; 26/351 E3 dated 11.2001; 26/358 E3 dated 11.2001; 26/359 E3 dated 11.2001;
- 26/360 E1 dated 04.2004; 26/361 F3 dated 11.2001; 26/363 E1 dated 11.2001; 26/737 EN18 dated 2010-02-15;
- 26/746 E1 dated 18.04.2001; 26/751 E2 dated 22.11.2000; 26/770 E1 dated 22.11.2000; 26/856 EN04 dated 2010-03-01;
- 26/875 EN04 dated 2011-09-23; P+P26/215 EN10 dated 02.2013; P+P26/430 E3 dated 03.2009;
- P+P26/504 EN04 dated 06.2012; 124465998 Rev. c dated 07.10.2008; 124466041 dated 07.11.08;
- C410457520 Rev. b dated 4.9.95; 410476020 Rev. a dated 17.02.09; 410476030 Rev. a dated 16.03.09;
- 410476060 Rev. a dated 08.04.08; 410476780 dated 17.11.08

3. TEST REPORTS:

OTTO:

- L0552-02, dated 14.06.02.

Montena emc sa:

- 12916, dated 25-01-02; 13157, dated 25-01-02; 13696 dated March 23, 2004;
- Test report dated March 10,2010; Test report dated March 5,2010; Test report dated 05.06.2012; Test report dated 28.03.2012

RUAG:

- 5159, dated 5 Feb 2002; 6276-1 Rev.1 dated April 14,2009; 6441-1 Rev.1 dated April 7.2010;
- 6830 Rev.1 dated 18 June 2012

Saia-Burgess Controls AG:

- Test report dated 3.12.02; MP-EPCD2-031 Rev.01; MP-EPCD2-036; MP-EPCD2-044; MP-EPCD2-045 Rev.1;
- MP-EPCD2-059; MP-EPCD2-061; MP-EPCD2-064; MP-EPCD2-067; MP-EPCD2-070 Rev.02; MP-EPCD2-073;
- MP-EPCD2-074; MP-EPCD2-081 to 89; MP-EPCD7-011; MP-EPCD7-021; MP-EPCD7-022; MP-EPCD7-030;
- MP-EPCD7-037; MP-EPCD7-040; 09026_MP dated 20.08.2012; 09036-MP dated 2010-04-15;
- 10004-MP dated 2010-04-19; 11005-MP dated 23.08.2012; 11006-MP dated 14.09.2011; 11009-MP dated 21.12.2011;
- 11010-MP dated 02.12.2011; 12002-MP Rev. V1.10 dated 15.11.2011; 12009-MP dated 10.08.2012;
- 12013-MP dated 29.08.2012; Test report dated 03/11/2004; Test report dated 05/06/2012; Test report dated 11.06.2012

UL Lab Work:

- E160970 dated 2009-08-20

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.

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.

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

5.4 - Equipment is to be supplied with manual(s) for installation, use and maintenance.

6. MARKING OF PRODUCT:

- Maker's name or trade mark.

- 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 marked or displayed on command on the equipment.

7. OTHERS:

This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the units at any time and that **Saia-Burgess Controls AG - SWITZERLAND**, will accept full responsibility for informing shipbuilders, ship owners or their sub-contractors of the proper methods of use and general maintenance of the units and the conditions of this approval.

*** END OF CERTIFICATE ***

