

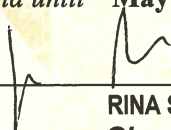


TYPE APPROVAL CERTIFICATE
No. ELE264918XG

This is to certify that the product below is found to be in compliance with the applicable requirement of the RINA type approval system.

<i>Description</i>	Programmable logic controller
<i>Type</i>	AC500 / S500, AC500-XC / S500-XC, AC500-S / AC500-S-XC; AC500-eCo / S500-eCo, AC700F / S700F
<i>Applicant</i>	ABB - AUTOMATION PRODUCTS GMBH EPPELHEIMER STR. 82 69123 HEIDELBERG GERMANY
<i>Manufacturer</i>	ABB - Stotz-Kontakt GmbH
<i>Place of manufacture</i>	HAUPTSTRAÙE 14-16 78132 HORNBERG GERMANY
<i>Reference standards</i>	Rules for the Classification of Naval Ship - Machinery, Systems and Fire Protection Pt C, Ch 3, Sec 6, Table 1

Issued in **Hamburg** on **May 7, 2019**. *This Certificate is valid until* **May 6, 2024**



RINA Services S.p.A.
Giuseppe Russo

This certificate consists of this page and 1 enclosure



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AC500 / S500, AC500-XC / S500-XC, AC500-S / AC500-S-XC
AC500-eCo / S500-eCo, AC700F / S700F

Type	Description
CPUs *	
PM5630-2ETH	Program memory: 8MB; 2xEthernet
PM5650-2ETH	Program memory: 80MB; 2xEthernet
PM5670-2ETH	Program memory: 160MB; 2xEthernet
PM5675-2ETH	Program memory: 160MB; Data Storage; 8GB; 2xEthernet
PM572	Program memory: 128kB
PM573-ETH	Program memory: 512kB; Ethernet
PM581	Program memory: 256kB
PM581-ARC /-ETH	Program memory: 256kB; ARCNET; Ethernet
PM582	Program memory: 512kB
PM582-ARC /-ETH	Program memory: 512kB; ARCNET; Ethernet
PM583-ETH	Program memory: 1024kB; Ethernet
PM590	Program memory: 2MB
PM590-ARC /-ETH	Program memory: 2MB; ARCNET; Ethernet
PM591	Program memory: 4MB
PM591-ARC /-ETH	Program memory: 4MB; ARCNET; Ethernet
PM591-2ETH	Program memory: 4MB; 2x Ethernet
PM592-ETH	Program memory: 4MB; Ethernet
PM595-4ETH-F	Program memory: 32MB; 2x Ethernet; 2x2 Fieldbus (RJ45)
PM595-4ETH-M-XC	Program memory: 32MB; 2x Ethernet; 2x2 Fieldbus (RJ45)
PM783F	Program memory: 2MB; Ethernet
CPU Terminal Bases (TBs) *	
TB511-ETH, TB711F	slots: 1x CPU, 1x Communication Module, with Ethernet RJ45
TB511-ARCNET	slots: 1x CPU, 1x Communication Module, with ARCNET BNC
TB521-ETH	slots: 1x CPU, 2x Communication Module, with Ethernet RJ45
TB521-ARCNET	slots: 1x CPU, 2x Communication Module, with ARCNET BNC
TB523-2ETH	slots: 1x CPU, 2x Communication Modules, with 2x Ethernet RJ45
TB541-ETH	slots: 1x CPU, 4x Communication Module, with Ethernet RJ45
TB5600-2ETH	slots: 1x CPU, with 2x Ethernet RJ45 and 1x CAN
TB5610-2ETH	slots: 1x CPU, 1x Communication Module, with 2x Ethernet RJ45 and 1x CAN
TB5620-2ETH	slots: 1x CPU, 2x Communication Module, with 2x Ethernet RJ45 and 1x CAN
Communication modules *	
CM572-DP, CM 772F	Communication Module PROFIBUS DP: - Master 12 Mbit/s
CM574-RS	Communication Module Serial: - Programmable
CM574-RCOM	Communication Module RCOM/RCOM+
CM575-DN	Communication Module DeviceNet: - DeviceNet Master 500 kbit/s
CM577-ETH	Communication Module Ethernet: - TCP/IP with integrated 2-port switch
CM578-CN	Communication Module CANopen: - CANopen Master 1 Mbit/s
CM579-PNIO	Communication Module PROFINET IO Controller; Integrated 2-port switch
CM597-ETH	Communication Module Ethernet TCP/IP with integrated 2-port switch
CM579-ETHCAT	Communication Module EtherCAT master, 2 x RJ45 (ETHCAT1 and ETHCAT2)
CM588-CN	Communication Module CANopen: - CANopen Slave 1 Mbit/s
CM589-PNIO, CM589-PNIO-4	Communication Module PROFINET IO Controller; Integrated 2-port switch
CM592-DP	Communication Module PROFIBUS DP: - Master 12 Mbit/s
CM598-CN	Communication Module CANopen: - CANopen Master 1 Mbit/s

(*) ... may be followed by XC (Extreme Condition)



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AC500 / S500, AC500-XC / S500-XC, AC500-S / AC500-S-XC
AC500-eCo / S500-eCo, AC700F / S700F

Type	Description	DI 24V DC	DO 24V DC	DI/DO config.	AI 12 bit res.	AO 12 bit res.
Communication Interface modules for decentralized I/Os *						
CI501-PNIO	PROFINET RT Device	8	8	-	4	2
CI502-PNIO	PROFINET IO RT Device	8	8	8	-	-
CI504-PNIO	PROFINET IO RT Device - 3 Serial UART Interfaces (RS-232, RS-422 or RS-485)	-	-	-	-	-
CI506-PNIO	PROFINET IO RT Device - 2 Serial UART Interfaces (RS-232, RS-422 or RS-485) - 1 CANopen Master Interface	-	-	-	-	-
CI511-ETHCAT	EtherCAT Bus Module with Cam switch functionality	8	8	-	4	2
CI512-ETHCAT	EtherCAT Bus Module with Cam switch functionality	8	8	8	-	-
CI541-DP	PROFIBUS DP Bus Module	8	8	-	4	2
CI542-DP	PROFIBUS DP Bus Module	8	8	8	-	-
CI581-CN	CANopen Bus Module	8	8	-	4	2
CI582-CN	CANopen Bus Module	8	8	8	-	-
CI590-CS31-HA	High Availability CS31 Bus Module: - 2 independent CS31 bus interfaces	-	-	16	-	-
CI592-CS31	CS31 Bus Modul with DI, DO, AI and AO	8	-	8	4	2
DC505-FBP	FBP Interface Module with DI and DO	8	-	8	-	-
DC705F	- With power supply and neutral interface for the FieldBusPlug					
DC551-CS31	CS31 Bus Module with DI and DO	8	-	16	-	-
Digital I/O modules (S500) *						
DA502	Digital/Analog Input/Output Module - Fast Counter	-	16	8	4	2
DC522, DC722F	Digital Input/Output Module	-	-	16	-	-
DC523, DC722F	Digital Input/Output Module	-	-	24	-	-
DC532, DC722F	Digital Input/Output Module	13	-	16	-	-
DC541	Digital Input/Output Module - DI/DO in a communication module housing	-	-	8	-	-
DC562	Digital Input/Output Module	-	-	16	-	-
DI524, DI724F	Digital Input Module	32	-	-	-	-
DO524	Digital Output Module	-	32	-	-	-
DO526	Digital Output Module	-	8	-	-	-
DX522, DX722F	Digital Input/Output Module	8	8 (relay)	-	-	-
DX531, DX731F	Digital Input/Output Module	8 (120/ 230V AC)	4 (relay)	-	-	-
FM502-CMS	Condition monitoring module	2	-	2	16	-
PD501	Positioning Module: - 24V DC motor output	-	-	-	1	-
PD501- 4CH	Positioning Module: - 24V DC motor output	-	-	-	4	-
Encoder & PWM module *						
CD522, CD722F	Encoder & PWM Module - 2 encoder inputs with 2 separated 5V power supplies - 2 PWM outputs - Module - wise electrically isolated	2	-	8	-	-
Analog I/O modules *						
AO523, AO 723F	Analog Output Module	-	-	-	-	16
AI523, AI 723F	Analog Input Module	-	-	-	16	-
AI531, AI 731F	Analog Input Module	-	-	-	8 (15bit)	-

(*) ... may be followed by XC (Extreme Condition)



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**AC500 / S500, AC500-XC / S500-XC, AC500-S / AC500-S-XC
AC500-eCo / S500-eCo, AC700F / S700F**

Type	Description	DI 24V DC	DO 24V DC 0,5A max	DI/DO config.	AI 12 bit res.	AO 12 bit res.
Analog I/O modules *						
AX521, AX 721F	Analog Input/Output Module	-	-	-	4	4
AX522, AX 722F	Analog Input/Output Module	-	-	-	8	8
DA501, DA 701F	Input/Output Module	16	-	8	4	2
AC522, AC 722F	Analog Output Module	-	-	-	8	8

(*) ... may be followed by XC (Extreme Condition)

Type	Description
Terminal units (TUs) *	
TU505 / TU506 TU 705F/ TU 706F	FBP Terminal Units TU505-FBP and TU506-FBP for FBP Interface Modules - TU505-FBP, FBP Terminal Unit, Screw-type Terminals - TU506-FBP, FBP Terminal Unit, Spring Terminals
TU507 / TU508	ETH-Terminal Units TU507-ETH and TU508-ETH for PROFINET- or EtherCAT Bus Modules - TU507-ETH, Ethernet Terminal Unit, Screw Terminals - TU508-ETH, Ethernet Terminal Unit, Spring Terminals
TU509 / TU510 TU709F/ TU710F	Terminal Units for PROFIBUS Bus Modules - TU509, PROFIBUS Bus Terminal Unit, Screw Terminals - TU510, PROFIBUS Bus Terminal Unit, Spring Terminals
TU515 / TU516 TU 715F/ TU 716F	I/O Terminal Units TU515 and TU516 for I/O expansion modules - TU515, I/O Terminal Unit, 24 V DC, Screw Terminals - TU516, I/O Terminal Unit, 24 V DC, Spring Terminals
TU517 / TU518	Terminal Units for CANopen or DeviceNet Modules - TU517, CANopen or DeviceNet Terminal Unit, Screw Terminals - TU518, CANopen or DeviceNet Terminal Unit, Spring Terminals
TU520-ETH	PROFINET IO Terminal Unit for PROFINET IO Bus Modules - 2x RJ 45 interfaces for connection to PROFIBUS network, 3 removable connectors for bus systems
TU531 / TU532 TU 731F/ TU 732F	I/O Terminal Units TU531 and TU532 for I/O expansion modules - TU531, I/O Terminal Unit, 230 VAC, Screw Terminals - TU532, I/O Terminal Unit, 230 V AC, Spring Terminals
TU551 / TU552	Terminal Units TU551-CS31 and TU552-CS31 for CS31 Bus Modules - TU551-CS31, CS31 Bus Terminal Unit, 24 V DC, Screw Terminals - TU552-CS31, CS31 Bus Terminal Unit, 24 V DC, Spring Terminals
TU541 / TU542	Terminal Units TU541 and TU542 for Positioning modules PD501 - TU541, Terminal Unit, 24 V DC, Screw Terminals - TU542, Terminal Unit, 24 V DC, Spring Terminals
Terminal Base with function*	
TF501-CMS	Terminal Base Func.Mod.Term.Base, 0x coupler slots, Ethernet, 24V DC, spring terminals
TF521-CMS	Terminal Base Func.Mod.Term. Base, 2x coupler slots, Ethernet, 24V DC, spring terminals
Safety CPU*	
SM560-S	Safety CPU (Safety Module) for up to SIL3 (IEC 61508 and IEC 62061) and PL e (ISO 13849) safety applications
Safety I/O modules*	
DI581-S	Safety binary input module DI581-S with 16 safety input channels (up to SIL2 or PL d) or 8 safety input channels (up to SIL3 or PL e) with 8 test pulse output channels
DX581-S	Safety binary input/output module DX581-S with 8 safety output channels and 8 safety input channels (up to SIL2 or PL d) or 4 safety input channels (up to SIL3 or PL e) with 4 test pulse output channels
AI581-S	Safety analog input module AI581-S with 4 safety current input channels 0...20 mA (up to SIL2 or PL d) or 2 safety current input channels (up to SIL3 or PL e)
Safety Terminal Unit*	
TU582-S	Spring-type terminal unit TU582-S for safety I/O modules

(*) ... may be followed by XC (Extreme Condition)



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AC500 / S500, AC500-XC / S500-XC, AC500-S / AC500-S-XC
AC500-eCo / S500-eCo, AC700F / S700F

Type	Description
Accessory	
TA521	Lithium Battery: 3 V, 560 mAh, Primary cell, non-rechargeable
TA523	Pluggable Marker Holder: - For labeling the channels of S500 I/O modules
TA524	Dummy Communication Module: - To cover an unused communication module slot of a Terminal Base
TA525	Set of 10 white Plastic Markers: - To label AC500 and S500 modules
TA526	Wall Mounting Accessory: - For insertion at the rear side of Terminal Bases and Terminal Units
TA566	Wall Mounting Accessory: - For mounting without DIN rail of eCo Modules and PM55x/PM56x CPUs
TA560:	Lithium Battery for Real-Time Clock of PM55x and PM56x CPUs
TA561-RTC	Real Time Clock Adaptor
TA562-RS	Serial RS-485 Adaptor
TA562-RS-RTC	Serial RS-485 and Real-Time Clock Adaptor
TK501, TK701F	Programming Cable: - PC side: SUB-D, 9-pole, female; - AC500 side: SUB-D, 0-pole, male; - Length: 5 m
TK502	Programming Cable: - PC side: SUB-D, 9-pole, female; - AC500 side: terminal block, 9-pole, female; - Length: 5 m:
TK503	Programming Cable: - PC side: USB connector type A; - AC500 side: SUB-D, 0-pin, male; - Length: 3 m
TK504	Programming Cable: - PC side: USB connector type A; - AC500side: 5-pole terminal block; - Length: 3 m
TK506	RS-485 isolator for COM1
MC503	SD Memory Card Adaptor
MC502	SD Memory Card
Terminal blocks:	
TA56x	S500, Terminal block, F/F or F/S, 9 or 11 poles screw or spring connection

CPUs: Common features: PM554 and PM564 can operate up to seven S500/S500-eCo I/O devices

CPU type	Program memory	Digital Inputs	Digital Outputs	Analog Inputs	Analog Outputs	Power supply	Ether. interf.	Other interf.
PM554-T PM554-TP	128 kB	8 x 24V DC	6 x 24 V DC, 0.5 A max. (transistor)	none	none	24 V DC	-	Serial RS-485 interface (COM1) Serial RS-485 interface (COM2, optional) I/O-Bus SD Memory Card slot (optional)
PM554-T-ETH PM554-TP-ETH		8 x 24V DC	6 x 24V DC, 0.5A max. (transistor)	none	none	24V DC	x	
PM554-R PM554-RP		8 x 24V DC	6 x relay, 2A max.	none	none	24V DC	-	
PM554-R-AC PM554-RP-AC		8 x 24V DC	6 x relay, 2A max	none	none	100 to 240V AC	-	
PM564-T PM564-TP		6 x 24V DC*	6 x 24V DC, 0.5A max. (transistor)	2 x voltage*	1 x voltage or current	24V DC	-	
PM564-T-ETH PM564-TP-ETH		6 x 24V DC*	6 x 24V DC, 0.5A max. (transistor)	2 x voltage*	1 x voltage or current	24V DC	x	
PM564-R PM564-RP		6 x 24V DC*	6 x relay, 2A max.	2 x voltage*	1 x voltage or current	24V DC	-	
PM564-R-ETH PM564-RP-ETH		6 x 24V DC*	6 x relay, 2A max.	2 x voltage*	1 x voltage or current	24V DC	x	
PM564-R-AC PM564-RP-AC		6 x 24V DC*	6 x relay, 2A max.	2 x voltage*	1 x voltage or current	100 to 240V AC	-	
PM564-R-ETH-AC PM564-RP-ETH-AC		6 x 24V DC*	6 x relay, 2A max.	2 x voltage*	1 x voltage or current	100 to 240V AC	x	

(*) PM564 has 2 analog inputs which can be configured as digital inputs. If the analog inputs are configured as digital inputs, 8 digital inputs totally are available.



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AC500 / S500, AC500-XC / S500-XC, AC500-S / AC500-S-XC

AC500-eCo / S500-eCo, AC700F / S700F

CPU: Common features: PM554 and PM564 can operate up to seven S500/S500-eCo I/O devices

CPU type	Program memory	Digital Inputs	Digital Outputs	Analog Inputs	Analog Outputs	Power supply	Ether. interf.	Other interf.
PM556-TP-ETH	512 KB	8 x 24V DC	6 x 24V DC, 0.5A max. (transistor)	none	none	24V DC	x	
PM566-TP-ETH		6 x 24V DC	6 x 24V DC, 0.5A max. (transistor)	2 x voltage*	1 x voltage or current	24V DC	x	

(*) PM564 has 2 analog inputs which can be configured as digital inputs. If the analog inputs are configured as digital inputs, 8 digital inputs totally are available.

Type	Description
Digital I/O modules	
DC561, DC562	16 isolated configurable Input or Output 24V DC (Transistors)
DX561	8 isolated DI 24V DC, 8 DO 24V DC (Transistor)
DX571	8 isolated DI 24V DC, 8 digital relay output 120/240V AC, groupwise electrically isolated
DI561	8 DI 24V DC
DI562	2x 8 isolated DI 24V DC
DI571	8 DI 120-240V AC
DI572	16 isolated DI 100-240V AC
DO561	8 DO 24V DC (Transistor)
DO562	16 DO 24V DC, 0.5A max.
DO571	8 relay outputs 120-240V ACac, 2A max
DO572	8x DO 115-230V AC / 0.3A
DO573	Digital Relay Output Modules: 16x relay 24V DC/100-240V AC, 2A max.
FM562	Pulse Train Output Module - 2 axes motion control - 2 pulse train outputs per axis, RS-422 - 2 configurable digital inputs per axis, 24 V DC - 32 bits registers for position and speed value - 2x 2 DI 24V DC, 2x 2 DO 24V DC 0.5A max.
Analogue I/O modules	
AX561	4 configurable x AI: -2.5... +2.5V; -5... +5V; 0...+5V; 0...+10V; 0...20mA; 4.. 20 mA 2 configurable x AO: -10V ... +10V; 0...20mA; 4...20 mA
AI561	4 configurable x AI
AI562	2 configurable analog resistance temperature detector (RTD) inputs
AI563	4 isolated configurable thermocouple (TC) inputs
AO561	2 configurable x AO: -10V...+10V; 0...20mA; 4...20mA

Software: (Only relevant for AC500-S Safety products!):

Type PS501; Control Builder Plus V2.2.1 or later (it may be included in Automation Builder software package)

Documents:

Catalogue: 1SBC125003C0205 (2012); 2CDC125080M0201 (2009);

Drawing No. 1SAP140160F0001; 1SAP140160F9001

Data sheets: - CPUs Types PM56xx, PM57x, PM58x and PM59x; Digital/Analog Input/Output Module DA501, DO526

Part lists: 1SAP112300R0277; 1SAP117000R0271; 1SAP117200R0271; 1SAP150100R0277; 1SAP155500R0279;

- 1SAP170902R0101; 1SAP172900B0011; 1SAP172900R0111; 1SAP173200R0001; 1SAP173700B0001;

- 1SAP173800R0001; 1SAP240700R0001; 1SAP250800R0001; 1SAP260400R0001; 1SAP351500R0279;

- 1SAP372900B0011; 1SAP372900R0111; 1SAP373200R0001; 1SAP373700B0001; 1SAP373800R0001;

- 1SAP440700R0001; 1SAP450800R0001;



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AC500 / S500, AC500-XC / S500-XC, AC500-S / AC500-S-XC

AC500-eCo / S500-eCo, AC700F / S700F

Test reports:

PACONSULT GmbH: - 0790-05 dated 02 June 2005; 1094-05 dated 27 July 2006; 09-2475B dated 06 July 2009; 11-3684 dated 19.08.2011; 12-4737, Rev.1; 16-7720 dated 10 June 2016; 18-10585, Rev. 2, dated 17.09.2018

EMV Rhein-Neckar GmbH: - 3893-365 dated 26/06/2006; 3893-384 dated 14/02/2009; 3893-385e dated 25/04/2009; - 3893-386e dated 16/05/2009; 3893-388e dated 01/06/2009; 3893-390e dated 01/06/2009; 3893-391 dated 22/06/2009; - 3893-392e dated 27/06/2009; 3893-395a dated 06.11.2009; 3893-399 dated 21.07.2010; 3893-3105 dated 26.09.2011; - 3893-3113a dated 19.12.2012; 3893-3114 dated 19.07.2013; 3893-3116a dated 07.10.2014; 3893-3117 dated 23.09.2014; - 3893-3119 dated 13.06.2015; 3893-3121 dated 24.06.2016; 3893-3127 dated 06.11.2018; 3893-3128 dated 06.11.2018;

TÜV Süd: - Z10 13 01 83652 001, dated of 2013-02-01

Xiamen Products Quality Supervision & Inspection Institute: - 2010H_W032

CESI Laboratory: - SEC12-0456WM-E-E1 and -E2; SEC13-0728WM-E-E2; SEC13-1473WM-E-E2; SEC13-1475WM-E-E2;

ABB: D2011042, dated 24.10.2011

Additional Place of Production:

Welco Wongs TECHNOLOGY (SHENZHEN) LTD.
WANFENG INDUSTRIAL ESTATE,
34 THE EAST OF WANZHANG PU,
SHAJING, BAOAN, SHENZHEN,
GUANGDONG,
P.R. CHINA

DELTA ELECTRONICS, INC.
31-1 Xingbang Road, Guishan Industrial Zone Taoyuan C
33370 TAIWAN R.O.C.

Remarks:

EC-Code: 31 and 41 (for XC-option only).

The equipment described on this certificate is approved for installation in power distribution zone.

Installation on board is to be provided taking into account of the additional requirements when listed in the relevant reports (eg. EMC power supply filtering , shielded enclosure , appropriate grounding, etc.).

This certificate replace the previous certificate ELE195816XG/001.

Hamburg May 7, 2019



A handwritten signature in black ink, consisting of a series of loops and strokes, likely representing the name of the official who signed the certificate.