

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Selected official pages for procurement and maintenance review

PRODUCT BRAND

ABB

PRODUCT MODEL

TB853 / 3BSE057022R1

RCU Control Link Terminator for the PM891 processor in single configuration.

OFFICIAL SOURCE

AC 800M Controller Hardware Product Guide, 3BSE036352-610 Rev A, April 2019.

Open current manufacturer source

Selected original guide pages: 11-12, 51-52 and 83. The final page is original ABB System 800xA 6.0.3.4 catalog page 58, identifying the article number. See the complete guide for system safety and configuration instructions.

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Amikon Limited prepared this independent reference package. Original manufacturer pages follow unchanged.

Safety Summary

Table: *Electrostatic Sensitive Device*

	Electrostatic Sensitive Device Devices labeled with this symbol require special handling precautions as described in the installation section.
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Table: *Summary table of GENERAL WARNINGS*

	GENERAL WARNINGS
	Equipment Environment All components, whether in transportation, operation or storage, must be in a noncorrosive environment.
	Electrical Shock Hazard During Maintenance Disconnect power or take precautions to insure that contact with energized parts is avoided when servicing.

Table: *Summary table of SPECIFIC WARNINGS*

Page	SPECIFIC WARNINGS
p. 44	 It is not allowed to manipulate CEX bus base plates in a powered and running system. Before changing or removing a base plate, all CEX modules on that segment must be removed.
p. 55	 It is not allowed to manipulate CEX bus base plates in a powered and running system. Before changing or removing a base plate, all CEX modules on that segment must be removed.
p. 60	 It is not allowed to manipulate CEX bus base plates in a powered and running system. Before changing or removing a base plate, all CEX modules on that segment must be removed.
p. 135	 Explosion hazard - Substitution of components may impair suitability for Class I, Zone 2.

Table: Summary table of SPECIFIC WARNINGS
(Continued)

Page	SPECIFIC WARNINGS	
p. 135		Explosion hazard - Do not replace batteries unless the power has been switched off or the area is known to be non-hazardous.
p. 135		Explosion hazard - Do not disconnect equipment unless the power has been switched off or the area is known to be non-hazardous.

Table: Summary table of SPECIFIC CAUTIONS

Page	SPECIFIC CAUTIONS	
p. 13		This Product guide does not contain last-minute product information and updates which might affect functionality and/or performance. For information on late changes and restrictions, please refer to the release notes from <i>System 800xA Released User Manuals and Release Notes (3BUA000263*)</i> .
p. 47		Always check that the CPU and other hardware units have the correct firmware version, before installing them. If the CPU is empty, CPU firmware must be loaded via the COM4 port.
p. 133		If you use other power supplies, except SD82X and SD83X, to provide the 24V d.c. for AC 800M it is required that they also are CE marked, UL listed and fulfill the LVD (SELV and PELV).
p. 133		The AC 800M modules are to be considered as open equipment, according to EN 61131-2 and UL508, and must be mounted in non-public localities.

4.2 PM891 Processor Unit - Single Configuration

The PM891 processor unit is a monolithic unit equipped with power supply and CPU-boards, and unit termination.

The unit contains the microprocessor and RAM memory, a real-time clock, LED indicators, INIT push button, and a Secure Digital interface.

The PM891 does not contain any internal battery.

The main function of the power supply board is to generate isolated, short circuit proof +5 V and +3.3 V supplies, for the CPU and I/O units. The board also contains opto-isolated RS-232C drivers / receivers for the service port.

The PM891 processor unit is grounded to the DIN rail by means of the metallic components of the housing. The unit consists of screw terminals for power supply (L+, L-); redundant power supply monitoring (supervision signals SA, SB); RJ45 connectors for the control network and service port; connectors for the optical ModuleBus and the CEX-Bus. All units on the CEX-Bus are powered by the 24 V d.c. connected to the unit. The CN1 and CN2 ports are used for connection of Control Network. CN1 should be used in a single network. Both ports should be used for a redundant network.

In single CPU configuration, it is possible to connect an S800 I/O cluster directly to the built-in optical ModuleBus plug located at the lower side of the unit.

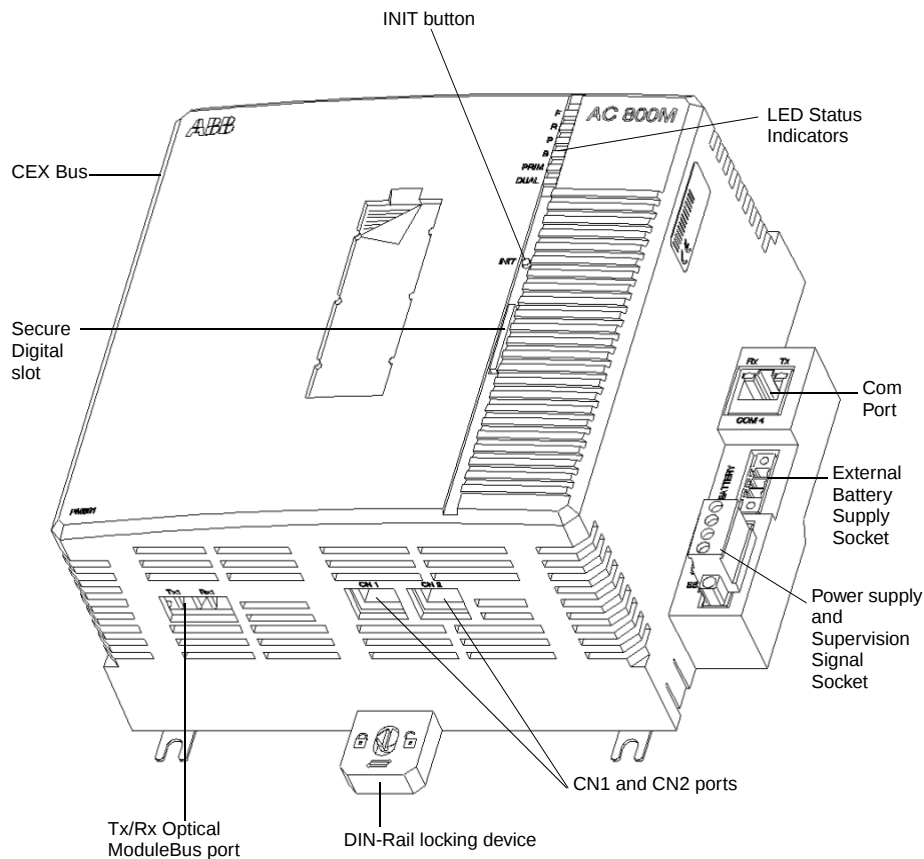


Figure 4.2: PM891 - Front view

4.3 Processor Unit - Redundant Configuration

Processor unit redundancy is available. In this case, the controller contains two processor units, each including memory for system and application software. The primary processor unit controls the process. The backup stands by to take over in case of a fault in the primary. The changeover is done bumplessly and in less than 10 ms. During the changeover, the process outputs are frozen.

4.12 ModuleBus Extension and Termination

A terminator, TB807, must always be mounted on the last I/O-unit on the ModuleBus. A ModuleBus terminator is delivered with the PM8xx processor unit.

For additional information about the ModuleBus, refer to *System 800xA S800 I/O Product Guide (3BSE015969*)*.

4.13 RCU Link Cable and Termination

4.13.1 TB852 RCU Link Terminator Plug

The TB852 RCU Link Terminator Plug is required when the processor unit PM857/PM858/PM862/PM863/PM866A/PM867 operates in single configuration. This is plugged to the RCU Link port on the processor unit.

4.13.2 TB853 RCU Control Link Terminator Plug

The TB853 RCU Control Link Terminator Plug is required when the PM891 processor unit operates in single configuration. This is plugged to the RCU Control port at the top of the PM891 unit.

4.13.3 TK851 RCU Link Cable for PM8xx

The Redundant Control Unit Link Cable, TK851, is used to transfer log data from the Primary CPU to the Backup CPU and to exchange status and control information between the Primary and the Backup CPUs, see [Figure 4.3 on page 53](#). The RCU Link uses 68-pole connectors. One of the connectors has a label marked "UPPER". The CPU connected to this connector will be defined as the upper CPU in the Control Builder and Operator Station.

The RCU Link Cable is also used as interconnection cable between two BC810 modules.

4.13.4 TK855 RCU Data Link Cable for PM891

The TK855 Redundant Control Unit Data Link Cable, connected between redundant PM891 units, transfers the data required to keep the backup PM891 synchronized with the primary PM891.

4.13.5 TK856 RCU Control Link Cable for PM891

The TK856 Redundant Control Unit Control Link Cable, connected between redundant PM891 units, provides role selection and CPU identity assignment (UPPER/LOWER).

Communication

Bus Accessories

Bus Accessories		Article no.	
         	TK850V007 CEX-Bus Extension Cable Use of TK850V007 needs TK851 as CEX-bus terminator. Length 0,7 m	3BSC950192R1	
	TB850 CEX-Bus Terminator A TB850 CEX-Bus terminator must always be installed on the last unit on the CEX bus. With 25-pin DB25P male connector. With screw fixing.	3BSC950193R1	
	TB851 CEX-Bus Terminator When Communication Interface units are mounted on adjacent DIN rails, they are connected by means of a CEX-Bus extension cable (TK850) and terminated using a TB851 CEX-Bus terminator. With 25-pin DB25S female connector. With screw fixing.	3BSC950194R1	
	BC810K02 CEX-bus Interconnection Unit Including: • 2 pcs BC810, Interconnection Unit • 2 pcs TP857, Baseplate, width = 60 mm • TK851, Interconnection Cable • 2 pcs TB850, CEX-Bus Terminator	3BSE031155R1	
	BC820K02 RCU-Link and CEX-Bus Interconnection Units Allows AC 800M redundant PM858, PM862 or PM866 (A) pair to be up to 200 m apart, cables not included. Including: • 2 pcs BC820, RCU-Link and CEX-Bus Interconnection Unit • 2 pcs TP850, Baseplate, width=60mm • 2 pcs TK857 RCU-Link Cable for BC820 • 2 pcs TB850, CEX-Bus Terminator	3BSE071500R1	
	TK851V010 Connection Cable Length = 1.0 m. Used as: • RCU Link Cable • BC810 Interconnection Cable	3BSC950262R1	
	TB852 RCU Link Terminator Terminator for RCU link.	3BSC950263R1	
	TB853 RCU Control Link Terminator Terminator for RCU Control link.	3BSE057022R1	
	TK855 RCU Data Link Cable Length = 1.0 m. Used as RCU Data Link Cable with PM891.	3BSC950356R1	
	TK856 RCU Control Link Cable Length = 1.0 m. Used as RCU Control Link Cable with PM891	3BSE057021R1	
	TK857V003 RCU Link Cable Length = 0.3 m. Used with BC820.	3BSC950375R1	