MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

ABB

TK850V007 3BSC950192R1

CEX-BUS EXTENSION CABLE

Used with the applicable AC 800M CEX-Bus configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: ABB 3BSE036351-600 A, CEX-Bus extension and TK850, pp.96-104,424-425; ABB Compact Product Suite catalog 3BSE062980, p.38

Communication

Bus Accessories

Bus Accessories		Article no.	
	**TK850V007 CEX-Bus Extension Cable** Length = 0.7 m Use of TK850V007 needs TK851 as CEX-bus terminator.	3BSC950192R1	
	**TB850 CEX-Bus Terminator** With 25-pin DB25P male connector. With screw fixing. A TB850 CEX-Bus terminator must always be installed on the last unit on the CEX bus.	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 • TK851, Interconnection Cable • 2 pcs TB850, CEX-Bus Terminator	3BSE031155R1	
	**BC820K02 CEX-Bus Interconnection Unit** Allows AC 800M redundant PM858, PM862 or PM866(A) pair to be up to 200 m apart, cables not included. Including: • 2 pcs BC820, CEX-Bus Interconnection Unit • 2 pcs TP850 Baseplate • 2 pcs TK857 RCU-Link Cable • 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	

Mounting Rails

Mounting Rails		Article no.	
	**Al-profile with DIN rail and Cable Duct Mounting 719 mm (28,3”)** DIN rail length 683 mm (26,9”) For RE820.	3BSE022257R1	
	Al-profile with DIN Rail and Cable Duct Mounting 592 mm (24”) DIN rail length 556 mm (21,9”)	3BSE022256R1	
	Al-profile with DIN Rail and Cable Duct Mounting 465 mm (19”) DIN rail length 429 mm (16,9”)	3BSE022255R1	

Installing the PM85x/PM86x/TP830 Processor Unit in Redundant Configuration

This topic does not apply to the installation of PM891 unit in redundant configuration. See Installing the PM891 Processor Unit in Redundant Configuration on page 100.

In redundant configuration two PM858/PM861/PM862/PM864/PM865/PM866/PM867 units are mounted onto two separate DIN-rails. If sufficient space is available, the units can be mounted onto the same DIN-rail

Note that in redundant CPU configuration, COM3 and the electrical ModuleBus on the baseplate can not be used.

Use the following procedure to install the processor units along the DIN-rail:

1. Mount the processor units.
2. Mount the communication interfaces on the CEX-Bus to the left of the processor unit. If BC810/BC820s are used, the configuration of the segments should be considered. If BC810/BC820s are not used, the interfaces can be divided between the two CPUs in any preferred way.
3. Press the units gently together and make sure that the CEX-Bus is correctly connected, via the connectors on the baseplates.
4. If BC810 is used, connect the TK851 cable to the two BC810 (Figure 31 on page 106). If BC820 is used, connect the TK857 cable to the two BC820 (Figure 37 on page 114). If BC810/BC820s are not used, mount the CEX-Bus extension cable TK850 to the units at farthest away from the processor units or, if no units are mounted, directly to the CEX-Bus on the processor unit. The CEX-Bus extension cable must be connected to both CPUs whether or not there are any other CEX-Bus units (Figure 29 on page 99).

Communication Ports

Same as for single configuration (see Table 5 on page 90, Table 6 on page 91 and Table 7 on page 92).

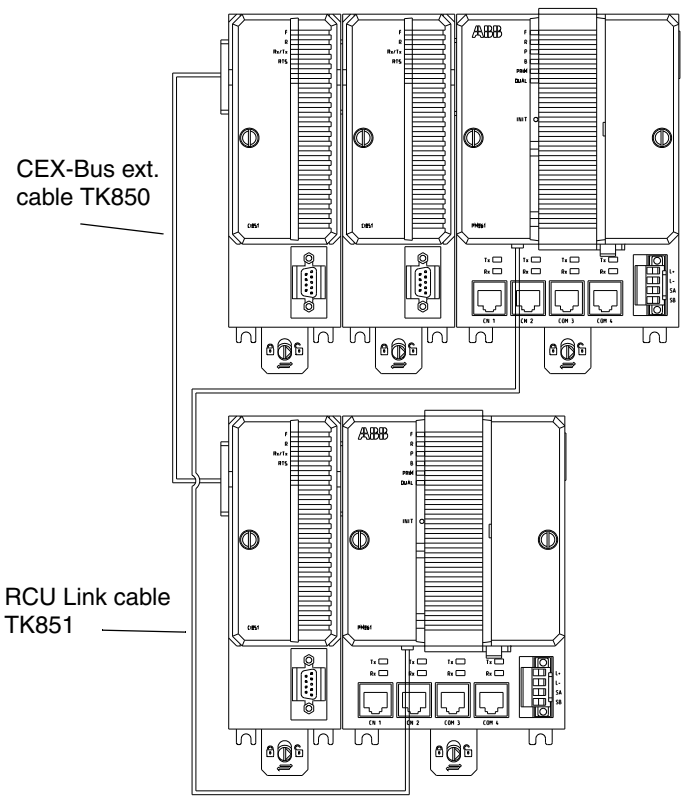


Figure 29. Connection of CPU redundancy

Installing the CEX-Bus without BC810/BC820

The CEX-Bus, used for connection of communication interfaces to the processor unit, is located on the left-hand side of the processor unit baseplate (TP830).

A bus termination unit must always be fitted to the last unit on the CEX-Bus, as shown in Figure 25 on page 86. A TB850 male CEX-Bus termination unit is supplied with each PM8xx/TP830 processor unit.

However, should the configuration require the use of a TK850 extension cable, as shown in Figure 26 on page 87, then a TB851 female CEX-Bus termination unit is required and must be fitted to the last baseplate in the sequence. A TB851 female CEX-Bus termination unit is supplied with each TK850 extension cable.

TK850 CEX-Bus Extension Cable

Only one TK850 CEX-Bus extension cable may be used in any one CEX-Bus. Cable length: 0.7 m (2.3 ft).

Installing the CEX-Bus Interconnection Unit BC810/TP857

The BC810 units must be mounted directly to the CEX-Bus on the processor unit base plate. The SM81x, if used, and communication interfaces are then mounted to the CEX-Bus on the BC810, and terminated in each end with TB850 male CEX-Bus termination unit. The two BC810 are connected with the interconnection cable TK851.



The maximum number of CEX-Bus units connected to a BC810 is six. The primary function of BC810 is to divide the CEX-Bus into two physically separate segments for increased system availability, a faulty CEX-Bus unit on one segment will not affect the processor unit or the other CEX-Bus segment. It is also important to note that when using the BC810 together with redundant CEX-Bus units these units shall be mounted on different BC810 CEX-Bus segments.

See Figure 31 on page 106 and Figure 32 on page 107 for configuration examples. Use the configuration which coincides with the requirements for availability, redundancy and safety of your AC 800M controller system.

Do not connect the two CEX-Bus segments, separated with BC810, to each other with CEX-Bus extension cable TK850.

The BC810 is powered either from the processor unit via the CEX-Bus or through its external connector for power supply. This external connector can also support the CEX-Bus with redundant power.

If the external connector is used in a redundant configuration of BC810, there are two valid connection possibilities:

- Single power source (SD8xx or SS8xx) for the processor units and the BC810s on both the segments (say, segments A and B). See Figure 33 on page 108.
- One power source (SD8xx or SS8xx) for the processor unit on segment A and the BC810 on segment B, and another power source (SD8xx or SS8xx) for the processor unit on segment B and the BC810 on segment A. See Figure 34 on page 109.

For obtaining redundant power supply, connect the external connector to the SS82x voting device. For details of SS82x connections, see Installing the SS823/SS832 Voting Unit on page 145. See also Powering from an External Source on page 183.

In AC 800M High Integrity Controllers it is required that the external supply input of BC810 is connected and that the power supply is strictly configured either according to Figure 33 or according to Figure 34 and nor is it allowed to change the configuration by way of for instance individual circuit breakers between modules.

TB851 Terminator for CEX-Bus (Female)

A TB851 (female) Terminator for CEX-Bus is required when a TK850 extension cable is used.

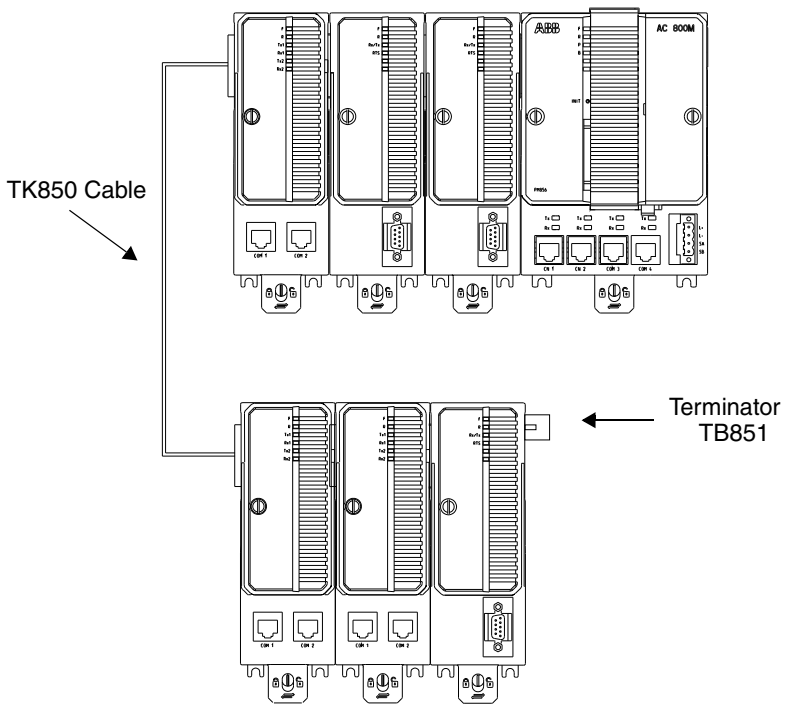


Figure 121. TB851 Terminator for CEX-Bus (female)

TB807 ModuleBus Terminator Plug

The Terminator plug must always be mounted on the last I/O unit of the ModuleBus. If no units are used on the ModuleBus, no bus termination is required. No ModuleBus termination is required in redundant CPU configuration.

TB852 RCU Link Terminator Plug

The TB852 RCU Link Terminator Plug is required when the PM858/PM861/PM862/PM864/PM865/PM866/PM867 processor unit operates in single configuration.

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.

TK850 CEX-Bus Extension Cable

A 0.7 m (2.3 ft.) extension cable, complete with connector (type DB25P-metal housing) provides connectivity to Communication Interface units between adjacent DIN-rails. It is always used in redundant CPU configuration for connecting the CEX-Bus between the two processor units.

TK851 RCU Link Cable

The Redundant Control Unit Link Cable 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 Backup CPUs. The RCU Link uses 68-pole connectors, one of which is labeled “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.