

01 Plan the cluster topology

APTER POWER / MODEL-SPECIFIC FIELD GUIDE

ABB TB840A 3BSE037760R1

S800 I/O ModuleBus Cluster Modem. ABB TB840A 3BSE037760R1 is an optical-to-electrical ModuleBus modem for S800 I/O clusters. It supports redundant optical lines feeding a common electrical ModuleBus and supervises the I/O bus and power supply.

TOPOLOGY CHECK	PUBLISHED BASIS
Optical side	Two fiber-optic ModuleBus ports
Electrical side	One logical ModuleBus; maximum 12 I/O modules
Cluster distribution	Maximum seven clusters on the optical ModuleBus
Protocol role	ModuleBus slave

A / Redundant optical arrangement

Connect the redundant TB840A units to different optical ModuleBus lines while they share the electrical ModuleBus. Using a second modem does not change the published maximum number of I/O modules on that electrical bus.

B / Expansion decision

When the station needs more than 12 I/O modules, organize the additional I/O through the fiber-optic cluster distribution. Do not interpret the seven-cluster limit as permission to exceed the electrical-bus limit in one cluster.

COMMERCIAL RECORD	VALUE
Country of origin	Sweden
HS / tariff code	8537101190
Shipping origin	Xiamen, Fujian, China
Stock / dispatch	1 / 3 days; fast shipment

MTU	DOCUMENTED ARRANGEMENT
TU840	Redundant TB840/TB840A; dual ModuleBus
TU841	Redundant TB840/TB840A; single ModuleBus

A / Match the installed bus arrangement

Select the MTU by the required dual- or single-ModuleBus arrangement. The two listed MTUs are not interchangeable descriptions of one electrical topology.

POWER CHECK	PUBLISHED BASIS
Modem current at 24 V	120 mA typical
Power to I/O modules	Isolated supply
Input protection	Fused input power
Supervision	I/O ModuleBus and power supply

B / Keep the power budget separate

The 120 mA figure is typical modem consumption. It is not a maximum supply rating or the complete load of every attached I/O module. Include the connected I/O requirements in the station power design.

C / Interpret supervision by function

During a cluster check, distinguish the ModuleBus communication condition from the supply condition. A bus observation alone does not establish that the isolated I/O supply path is acceptable.

PARAMETER	SPECIFICATION
Operating temperature	0 to +55 degrees C
Approval temperature range	+5 to +55 degrees C
Vertical-mounting ambient	Maximum +40 degrees C
Storage temperature	-40 to +70 degrees C
Relative humidity	5 to 95%; non-condensing
Ingress protection	IP20
Pollution degree	2
Corrosion protection	ISA-S71.04 G3

A / Orientation and approval limits

The general operating range is 0 to +55 degrees C, while the stated approvals are issued for +5 to +55 degrees C. Vertical mounting has a separate maximum ambient temperature of 40 degrees C; apply the conditions that match the actual installation.

B / Configuration capabilities

ABB lists line redundancy, module redundancy, hot swap and use with an HI controller. These entries describe module capabilities, not unconditional authorization to disconnect an energized installation or a safety-integrity rating for the completed system.

C / Acceptance review

Compare the installed MTU, optical-line arrangement, electrical module count and optical cluster count with the published configuration. Include supply supervision and environmental conditions in the review before returning the cluster to service.

OBSERVATION	CHECK
Station exceeds one electrical cluster	Use optical distribution; retain both capacity limits.
Redundant path under review	Confirm separate optical lines and a shared electrical ModuleBus.
MTU selection under review	Use the documented TU840 dual / TU841 single distinction.

BRAND + MODEL	RELATION	PRODUCT LINK
ABB TB825 3BSE036634R1	S800 optical communication	Check ABB TB825 3BSE036634R1 page
ABB TB846 3BSE021439R1	S800 communication hardware	Check ABB TB846 3BSE021439R1 page
ABB CI820V1 3BSE025255R1	S800 communication interface	Check ABB CI820V1 3BSE025255R1 page
ABB CI810B 3BSE020520R1	S800 communication interface	Check ABB CI810B 3BSE020520R1 page
ABB DI828 3BSE069054R1	S800 digital input family	Check ABB DI828 3BSE069054R1 page
ABB AI815 3BSE052604R1	S800 analog input family	Check ABB AI815 3BSE052604R1 page
ABB AI830 3BSE008518R1	S800 analog input family	Check ABB AI830 3BSE008518R1 page
ABB TU842 3BSE020850R1	S800 termination family	Check ABB TU842 3BSE020850R1 page

Related catalogue navigation only. These entries are not a declaration of interchangeability, a replacement list or an approved complete-system configuration.

APTER POWER CONTACT

WHATSAPP / PHONE

+86 180 3023 5313

EMAIL sales13@apterpower.com

WEBSITE www.apterpower.com



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Source: ABB TB840A Hardware Selector, description, features, general/detailed data and environmental table (21 September 2026).