

ABB TB840A 3BSE037760R1

S800 I/O ModuleBus Cluster Modem

Product identity

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.

PARAMETER	SPECIFICATION
Communication protocol	ModuleBus
Bus role	Slave
Fiber-optic ports	2
Electrical ModuleBus capacity	Maximum 12 I/O modules
Optical ModuleBus capacity	Maximum 7 clusters
Line redundancy	Supported
Module redundancy	Supported
Hot swap	Supported

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

Trade fields are the Apter Power commercial record. Technical values below follow the ABB source identified in this document.

Interface and operating data

Published values and their installation meaning

PARAMETER	SPECIFICATION
HI controller use	Supported
24 V current consumption	120 mA typical
Dual-ModuleBus redundant MTU	TU840
Single-ModuleBus redundant MTU	TU841
I/O power supply	Isolated; input power fused
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

System context

The optical and electrical interfaces are logically the same ModuleBus. Select TU840 or TU841 to match the installed redundant bus arrangement, and treat each electrical I/O cluster separately when planning optical distribution.

Technical notes

For ABB TB840A 3BSE037760R1, select TU840 for dual ModuleBus or TU841 for single ModuleBus in a redundant arrangement. Keep the electrical-bus module count and optical-cluster count within their separate limits, and distinguish modem current consumption from the complete I/O power budget.

Applications and precautions

System use and model-specific installation boundaries

Distributed S800 I/O clusters

Carries ModuleBus communication to locally distributed I/O clusters over optical connections.

Redundant optical-line access

Connects redundant modems to separate optical lines feeding the same electrical ModuleBus.

I/O station expansion

Supports clustered distribution when one electrical ModuleBus cannot accommodate the station's I/O count.

Cluster power and bus supervision

Supports separate checks of the I/O communication path and the cluster power supply.

Before commissioning

01 / Installation check

Keep redundant modems on different optical ModuleBus lines while connecting them to the same electrical ModuleBus.

02 / Installation check

Select TU840 for redundant dual ModuleBus or TU841 for redundant single ModuleBus; do not interchange the arrangements.

03 / Installation check

Limit each electrical ModuleBus to a maximum of 12 I/O modules.

04 / Installation check

Plan no more than seven clusters on the fiber-optic ModuleBus.

05 / Installation check

Treat the published 120 mA at 24 V as typical modem consumption, not total I/O-cluster demand.

06 / Installation check

Apply the 40-degree-C ambient maximum when mounting vertically.

07 / Installation check

Maintain IP20 installation conditions and non-condensing relative humidity within 5 to 95 percent.

08 / Installation check

Review both I/O ModuleBus supervision and power-supply supervision before accepting the cluster.

Engineering FAQ

Eight exact-model decisions / same answers as the public page

Should both ABB TB840A 3BSE037760R1 modems use the same optical line in a redundant arrangement?

No. ABB describes redundant TB840A units on different optical ModuleBus lines while both connect to the same electrical ModuleBus.

How should a station with more than 12 I/O modules be arranged around ABB TB840A 3BSE037760R1?

Do not extend one electrical ModuleBus beyond 12 I/O modules. Distribute additional I/O through optical ModuleBus clusters; ABB specifies up to seven clusters on the fiber-optic bus.

Which MTU fits a dual-ModuleBus redundant ABB TB840A 3BSE037760R1 installation?

TU840 is the listed MTU for redundant TB840/TB840A with dual ModuleBus. TU841 is the listed alternative for a single ModuleBus arrangement.

Does ABB TB840A 3BSE037760R1 translate between two independent communication protocols?

No. Its optical and electrical interfaces are logically the same ModuleBus. TB840A is a ModuleBus slave, not a general-purpose protocol gateway.

Can ABB TB840A 3BSE037760R1 be used with an HI controller?

Yes. ABB lists use with an HI controller. This entry describes controller compatibility; it does not assign a safety integrity level to the complete I/O installation.

What power-protection features are built into ABB TB840A 3BSE037760R1?

The module provides an isolated supply to the I/O modules and fused input power. These are separate features from its optical communication interface.

When checking ABB TB840A 3BSE037760R1, should diagnostics be limited to the optical path?

No. ABB lists supervisory functions for both the I/O ModuleBus and the power supply, so a cluster check must distinguish bus status from supply status.

What typical 24 V current should be allowed for ABB TB840A 3BSE037760R1 itself?

ABB publishes typical 24 V consumption of 120 mA. Treat this as the modem consumption, not as a published maximum or the total demand of all connected I/O modules.

Related products and contact

Eight verified Apter Power product pages

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

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ABB TB840A
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Technical source: ABB Compact Product Suite Hardware Selector, TB840A, article 3BSE037760R1; description, Features and benefits, General info, Detailed data, Environment and certification; accessed 21 September 2026. Commercial fields supplied by Apter Power.