

ABB TB840A 3BSE037760R1

S800 I/O ModuleBus Cluster Modem

Product description

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.

01 / Overview

Extends local I/O distribution through a fiber-optic interface.

02 / Overview

Supports separate optical lines for redundant modem arrangements.

03 / Overview

Supervises the I/O ModuleBus and its power supply.

04 / Overview

Provides an isolated power supply to connected I/O modules.

PARAMETER	SPECIFICATION
Country of origin	Sweden
HS / tariff code	8537101190
Shipping origin	Xiamen, Fujian, China
Stock / dispatch	1 / 3 days; fast shipment
Existing shipping dimensions / weight	5.3x10.5x12cm / 0.2 kg

Shipping dimensions and weight reproduce the existing commercial listing; they are not asserted to be ABB net dimensional data.

Technical specifications

ABB product data and separate integration notes

PARAMETER	SPECIFICATION	PARAMETER	SPECIFICATION	PARAMETER	SPECIFICATION
Communication protocol	ModuleBus	Hot swap	Supported	Approval temperature range	+5 to +55 degrees C
Bus role	Slave	HI controller use	Supported	Vertical-mounting ambient	Maximum +40 degrees C
Fiber-optic ports	2	24 V current consumption	120 mA typical	Storage temperature	-40 to +70 degrees C
Electrical ModuleBus capacity	Maximum 12 I/O modules	Dual-ModuleBus redundant MTU	TU840	Relative humidity	5 to 95%; non-condensing
Optical ModuleBus capacity	Maximum 7 clusters	Single-ModuleBus redundant MTU	TU841	Ingress protection	IP20
Line redundancy	Supported	I/O power supply	Isolated; input power fused	Pollution degree	2
Module redundancy	Supported	Operating temperature	0 to +55 degrees C	Corrosion protection	ISA-S71.04 G3

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.

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.

Applications and precautions

Four system uses and eight installation checks

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.

01 / Check

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

02 / Check

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

03 / Check

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

04 / Check

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

05 / Check

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

06 / Check

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

07 / Check

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

08 / Check

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

Important Notice: Confirm ABB TB840A 3BSE037760R1, the chosen MTU, optical-line separation, cluster allocation and I/O power demand. Check the actual mounting orientation and environmental conditions before commissioning.

Engineering FAQ

The public-page answers, reproduced without substitutions

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.

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.

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.

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.

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.

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.

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.

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.

Catalogue links and support

Brand-qualified model labels with clickable product links

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