

ABB CI840

PROFIBUS DP-V1 Communication Interface

Manufacturer	ABB
Model / order number	CI840 / 3BSE022457R1
Product identification	PROFIBUS DP-V1 Communication Interface
System / family context	S800 I/O

Verified scope

The original ABB manual identifies CI840 diagnostic, configuration and service functions. It describes redundant-unit status, PROFIBUS cable and supply warnings, output hold time and HART configuration. This is an operating reference, not a substitute hardware datasheet.

Engineering checks before replacement

- Verify CI840 identity and distinguish it from CI840A or an EXC exchange order.
- Preserve station addressing and the primary/backup configuration.
- Review output hold time and OSP values with the process requirements.
- Confirm firmware and the controller-specific engineering method before service.

Official ABB source reference

ABB S800 I/O DTM 5.3, 3BSE027630-510 A, February 2013. Original pages 58-65.

Open original ABB manufacturer reference

This cover is an independent Sales PLC reference, not a manufacturer-issued datasheet. The following manufacturer pages retain their original text, layout and page numbering.

Request model verification or a quotation

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CI840

About DTM

See [About DTM](#) on page 46.

Identification

See [Identification](#) on page 47.

Dynamic Data

See [CI840 Dynamic values](#) on page 166.

Diagnosis

Diagnosis control shows the status of the CI840 and node specific errors and warnings. Module specific diagnosis are displayed in the Diagnosis control for each I/O module.

General tab

Device state	
Operational	

Device diagnostics	
Station warning:	☒
Redundancy warning:	☒
Redundant power A failure:	☐
Redundant power B failure:	☐
CI840 in position A is primary:	☒
CI840 in position B is primary:	☐

Device diagnostics	
CI840 error in position A:	☐
CI840 error in position B:	☐
Redundant cable A failed:	☐
Redundant cable B failed:	☒
Station address warning:	☐

Close Help Update

OK NN/Planning Engineer

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Figure 23. CI840 - Diagnosis - General Tab

Device state area

This text field shows the actual state of the FCI. Either the state is **Operational** or the text field is left blank.

Device diagnostics area

The device specific errors that are detected for the CI840 are:

- **Station warning**
At least one error is detected within the entire CI840 station (including I/O modules etc.).
- **Redundancy warning**
Decreased availability due to error on redundant part in the entire CI840 station.
In system with only single CI840 this warning could be raised if the system is not correctly configured for single mode.

- **Redundant power A failure**
For the CI840 or an optical modem.
- **Redundant power B failure**
For the CI840 or an optical modem.
- **CI840 in position A is primary**
CI840 in position A is primary in a redundant pair also set if used as single.
- **CI840 in position B is primary**
CI840 in position B is primary in a redundant pair.
- **CI840 error on unit in position A**
CI840 in position A is erroneous.
- **CI840 error on unit in position B**
CI840 in position B is erroneous.
- **Redundant cable A failed**
The Profibus cable to CI840 in position A is unconnected or broken.
- **Redundant cable B failed**
The Profibus cable to CI840 in position B is unconnected or broken.

Station address warning

There is a mismatch between the actual address on the CI840 and the one configured in the system or if the address is set above 62. The warning will be cleared when the system is restarted with the right configuration or if the switch on the CI840 is changed back to the configured address.

Configuration



This control is not available if the unit is used towards AC 800M. The configuration data is then set via Control Builder Professional.

For configuration of the module, select the “Configuration” menu item. It shows the user parameters for the FCI e.g. Output Hold Time.

Power supervision of CI840	☐
Power supervision of opto extension	☐
Redundancy	☒
Extended HART mode	☐
Sequence of Events	☐

Output hold time (150-1900 ms)

OK Cancel Apply Help

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Figure 24. CI840 - Configuration for AC870P

Sequence of Events

The **Sequence of Events** checkbox determines the status of the SOE feature in the supported I/O modules:

- If this checkbox is checked, the SOE drop-down menu in the Channel Parameters tab of the supported I/O modules is activated. The user can then select the SOE status for each channel.
- If this checkbox is unchecked, the SOE is disabled for the supported modules, and the SOE drop-down menu in the Channel Parameters tab of the supported modules is not activated.

SOE is supported in DI825, DI830, DI831, and DI885 modules.

Figure 25. CI840 - Configuration for AC800F

- **Power supervision of FCI**
Mark the check box if the voltage supply to the FCI shall be supervised. Only if redundant power supply.
- **Power supervision of opto extension**
Mark the check box if the voltage supply to the cluster shall be supervised. Only if redundant power supply.
- **Redundancy**
Mark the check box if the CI840 shall be configured as a redundant module.
- **Extended HART mode**
Normal mode shall always be used if HART data is ≤ 56 bytes. Mark the check box if the HART data is ≥ 56 bytes but ≤ 215 bytes. If Extended HART mode is chosen less I/O modules can be used. See Memory Maps for more details.
- **Output hold time**
After a fail over, a timer is started in the new primary CI840. This CI840 requires configuration and data from the Profibus Master within the output hold time, which is defined in the **Output hold time** text field. If no data is

received within the defined time, the channels on the output modules are set to the predefined value (OSP value).

- **HCIR Enable**
Hot Configuration In Run active
- **HCIR Factor**
Hot Configuration In Run Factor
- **HCIR Watchdog**
Hot configuration In Run Worst Case Bus Cycle Base

Configuration Control of DI825/DI830/DI831/DI885 with CI840 for SOE

To use the modules DI825/DI830/DI831/DI885 for SOE, open the `ServiceEntries.xml` file, and set the value of the '**EnableSOE**' attribute to **1**.

The location of `ServiceEntries.xml` is `<ProgramData>\ABB\800xA\S800DTM`. The ProgramData folder is hidden, by default.

[Table 3](#) describes the different configuration control options for the SOE supported modules DI825, DI830/DI831 and DI885, used with CI840 for AC870P.

It is assumed that the **EnableSOE** attribute is set to **1** globally.

Table 3. Configuration control of SOE supported modules used with CI840, for AC870P

Status of 'Sequence of Events' checkbox in CI840 Configuration Control	Displayed status in the 'SOE' drop-down menu in DI825/DI830/DI835/DI885 Configuration Control	Whether the displayed SOE status in DI8xx can be changed
Unchecked, by default, after inserting the CI840 for the first time	SOE disable	No
Checked after an unchecked status	SOE disable	Yes

Table 3. Configuration control of SOE supported modules used with CI840, for AC870P

Status of 'Sequence of Events' checkbox in CI840 Configuration Control	Displayed status in the 'SOE' drop-down menu in DI825/DI830/DI835/DI885 Configuration Control	Whether the displayed SOE status in DI8xx can be changed
Checked, after inserting the CI840 for the first time	SOE enable	Yes
Unchecked after a checked status	SOE disable	No

Service

The service control is used for reading acyclic data.

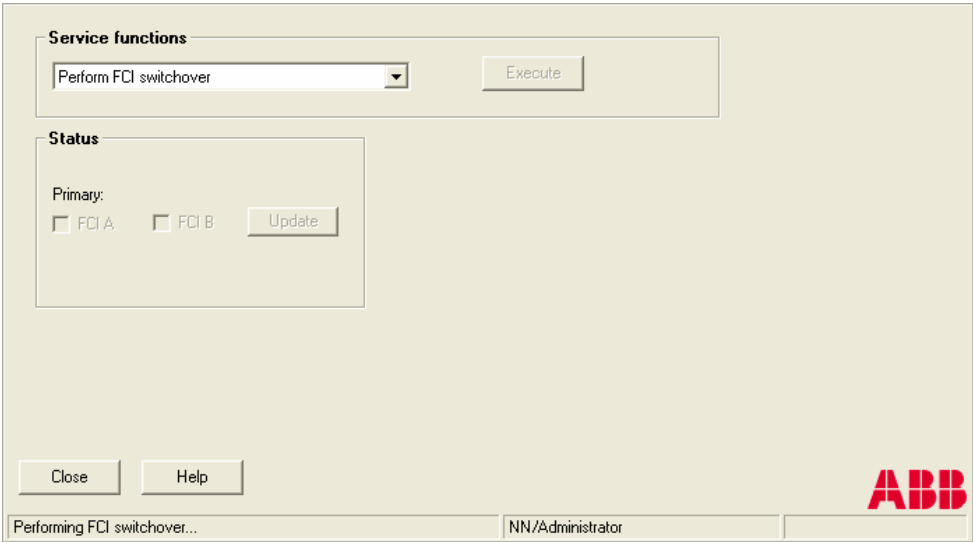


Figure 26. CI840 - Service

Service functions area

Click the **Execute** button to perform a switch over between unit A and unit B.

Status area

In the **Status** area you can see which unit that is primary. By clicking the **Update** button you update the status for which of the units that are the primary.