



CI864

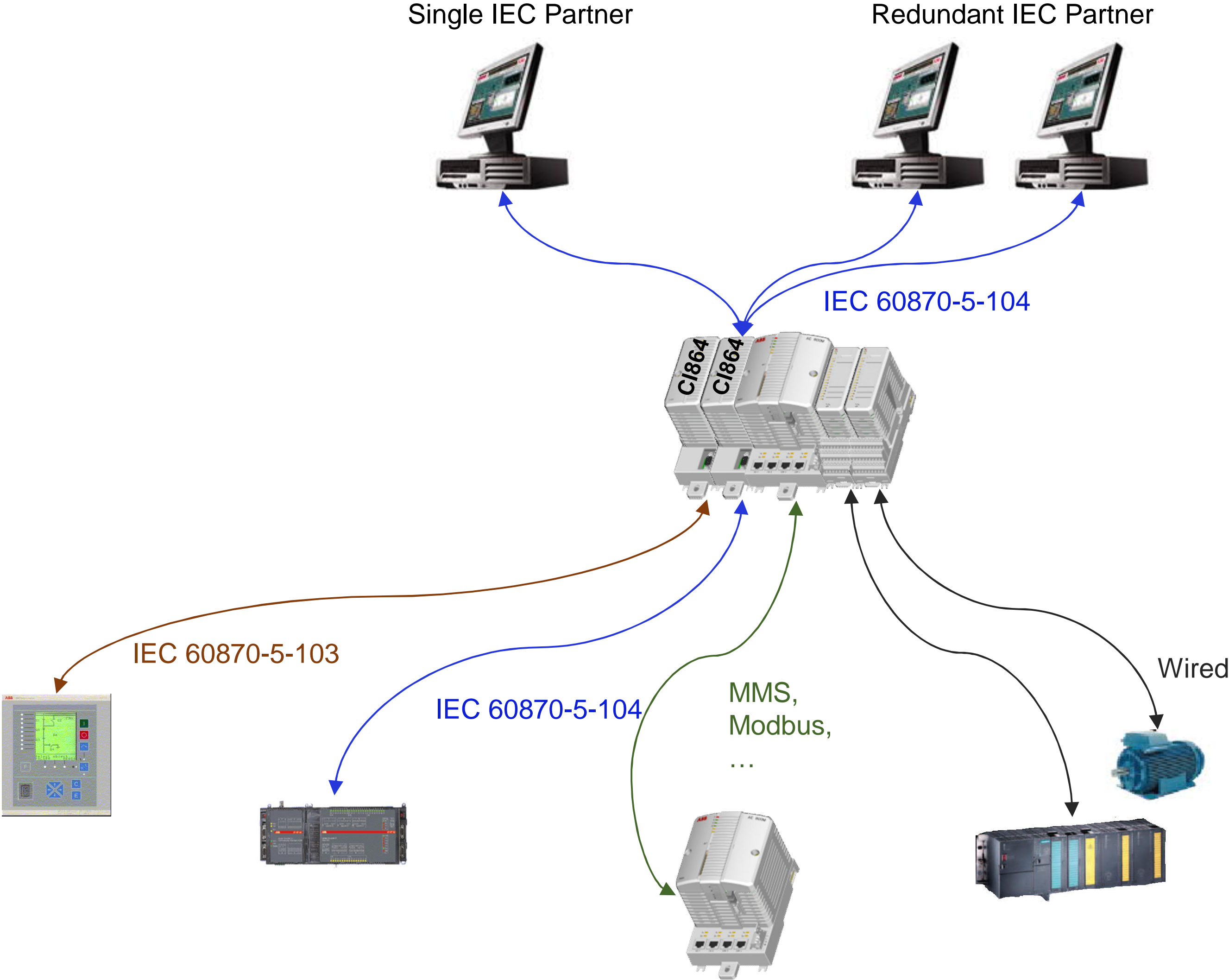
Configuration Examples

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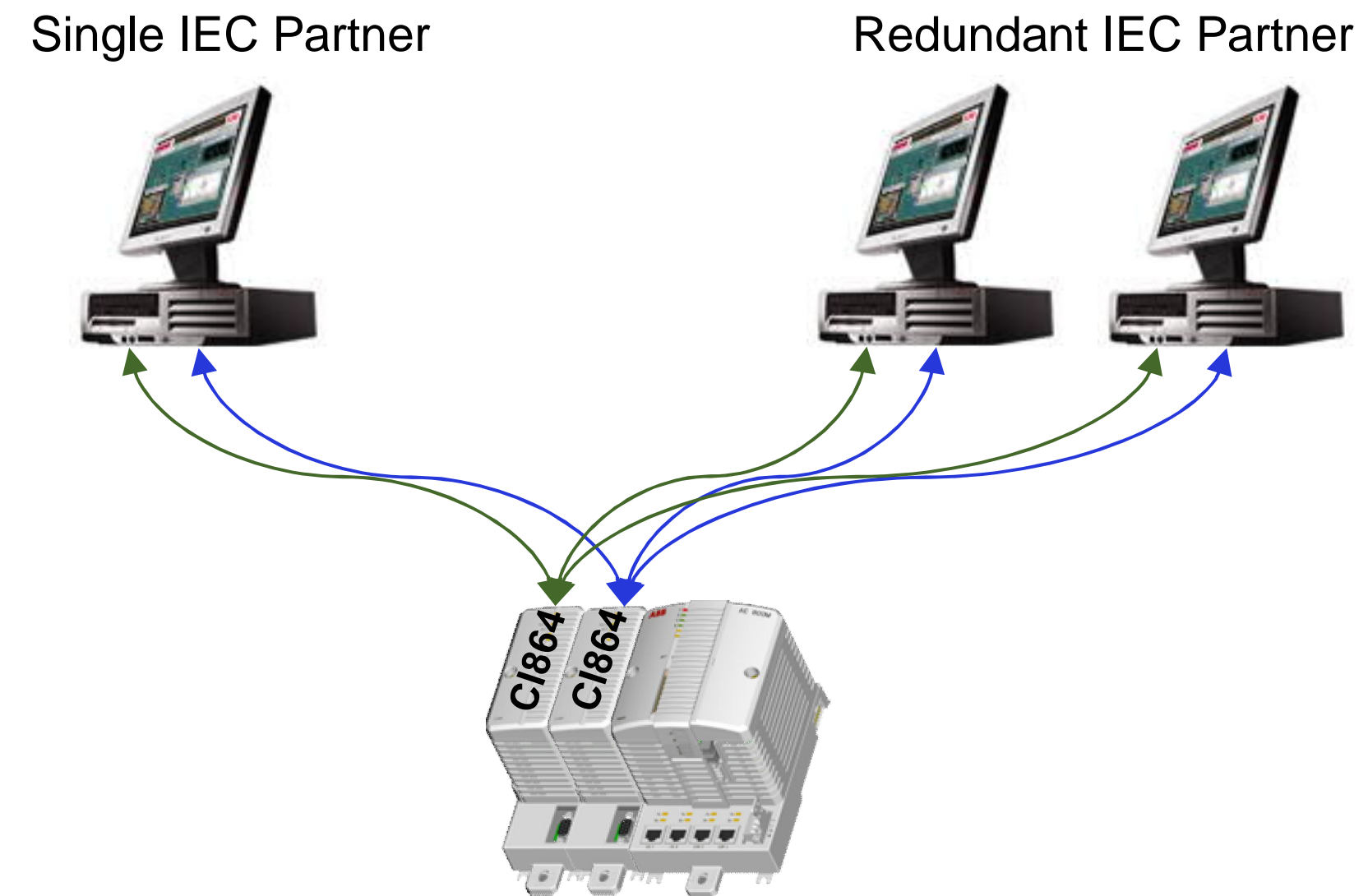


Configuration Overview



CI864 Module Redundancy

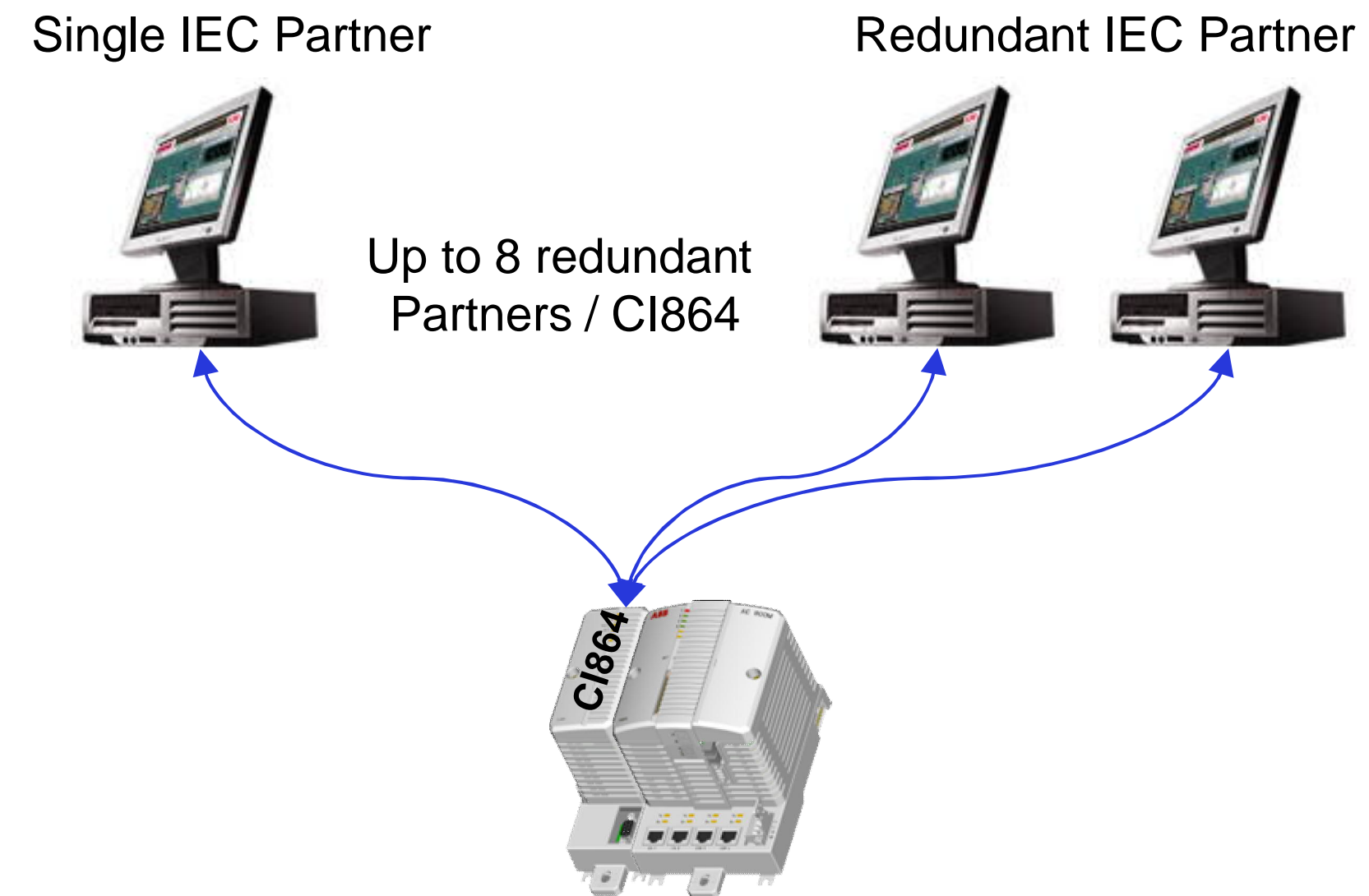
CI864 Module supports redundancy



IEC 60870-5-104 Headend (Dispatch Center)

Each CI864 Module supports
up to 8 redundant or
16 single partners

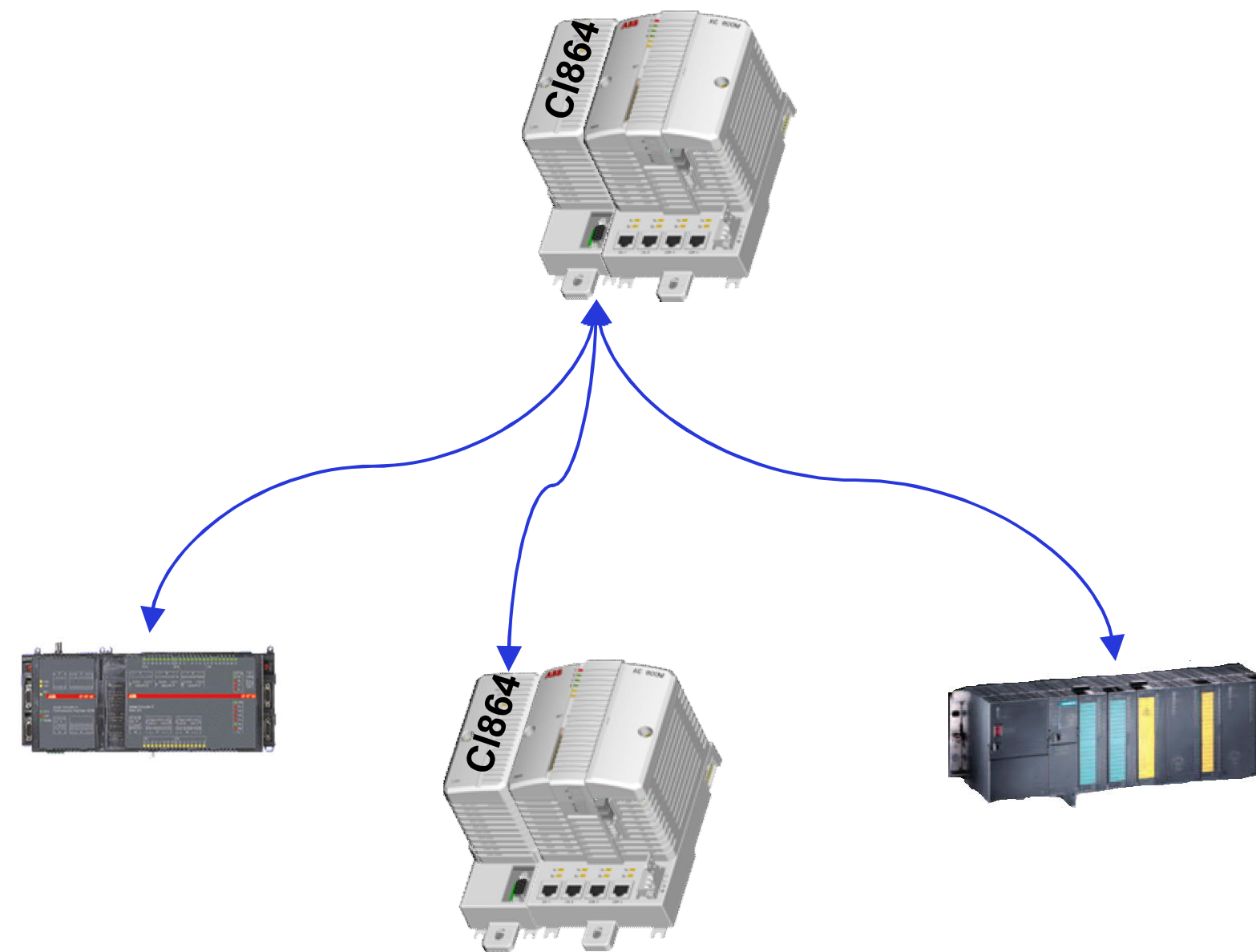
The maximum number of partners
depends on the total number of datapoints



IEC 60870-5-104 Field Devices

Each CI864 Module supports
up to 8 redundant or
16 single partners

The maximum number of devices
depends on the total number of datapoints

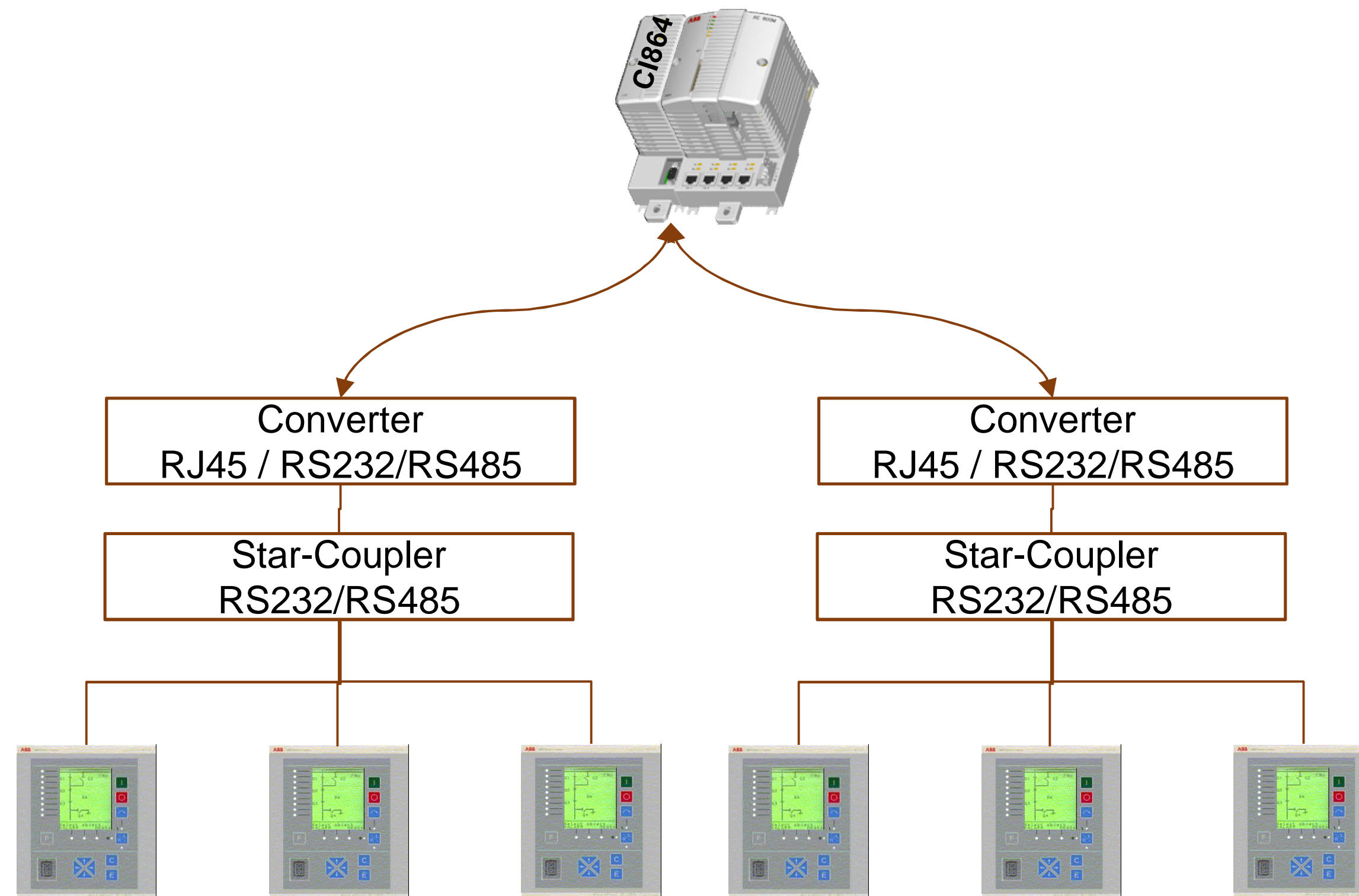


IEC 60870-5-101/103 via Star-Coupler (RS232/RS485)

Each CI864 Module supports
up to 8 Converters / Star-Couplers

Each Star-Coupler can handle
up to 16 devices

The maximum number of devices/couplers
depends on the total number of datapoints

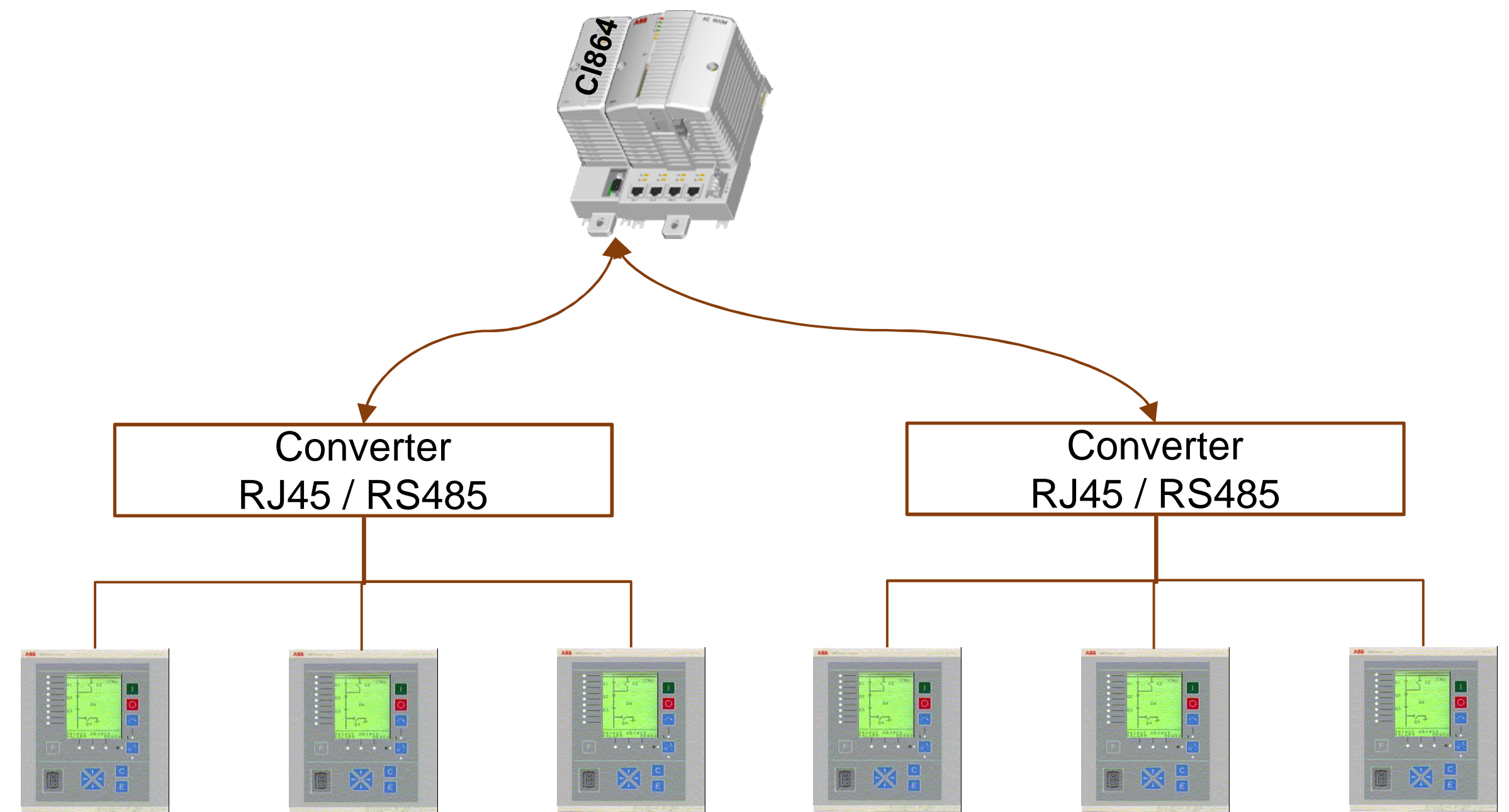


IEC 60870-5-101/103 without Star-Coupler (RS485 only)

Each CI864 Module supports
up to 8 Converters

Each Converter can handle
up to 16 devices

The maximum number of devices/couplers
depends on the total number of datapoints



Software Environment

- The IEC protocol runs under Industrial IT Baseline 3, 4 or 5.
 - Baseline 3 uses a customized Control Builder and is available only for version 3.4 (build 45.1.2.5).
 - Baseline 4 is available for version 4.1 Rollup 4 and higher.
 - Baseline 5 is available for version 5.0 SP1 and higher.
 - Version 5.1 is available. There are separate versions for 5.1 Rev A/B and 5.1 Rev C/D.
 - Version 6.0 is available.
- 891 controllers are supported on 800xA 5.1 Rev D or later.
- Function blocks are used to configure the data items to be sent to (or received from) the IEC partner stations.
- The High Integrity controller with SIL (PM865 HI+SM811) is not supported.

Implementation Details and Limitations

- One CI864 module can communicate with up to 16 IEC partner stations or 8 pairs of redundant stations. Depending on the amount of data items, the practical limit is less than that.
- The CI864 module can act both as the controlling and as the controlled station. At the application layer it can act either as a master, a slave or in both roles.
- Only a subset of the full IEC 60870-5-104 protocol is currently implemented.
- Almost all the monitoring and command data types in the compatible range are implemented. (Data types for parameter loading and file transfer are not implemented).
- Several private data types used in SAT systems are also implemented.
- If needed, additional ASDU types can be easily implemented with a conversion list as long as they are sufficiently similar to the already implemented types.
- One CI864 module can handle up to 4000 data items (items on a redundant connection count twice). In the sending direction (slave) the number of data items is limited to 2000 per connection.
- One CI864 module can handle up to 50 telegrams with a total of 300 changed data items per second.
- It can handle short bursts in excess of that by buffering data items until they can be sent to the IEC partner.
- CI board redundancy is not implemented. However it is possible to use two CI864 boards as a redundant pair by using special function blocks to set the IEC connections to active or standby. The CI864 board has support for several different redundancy schemes.

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