

2.2 Centralized and Distributed Configuration

You can install a PLC in centralized or distributed configuration according to your application.

IF ...	THEN ...
You wish to position the modules as closely as possible to the CC and can accept longer cable runs to the process,	choose the centralized configuration
You wish to position the I/O modules as closely as possible to the process and can accept longer cable runs to the CC,	choose the distributed configuration

With the centralized configuration, you can install the CC and EUs in the same cabinet or in adjacent cabinets. Data transmission is parallel. Shown in the following figure is a centralized configuration.

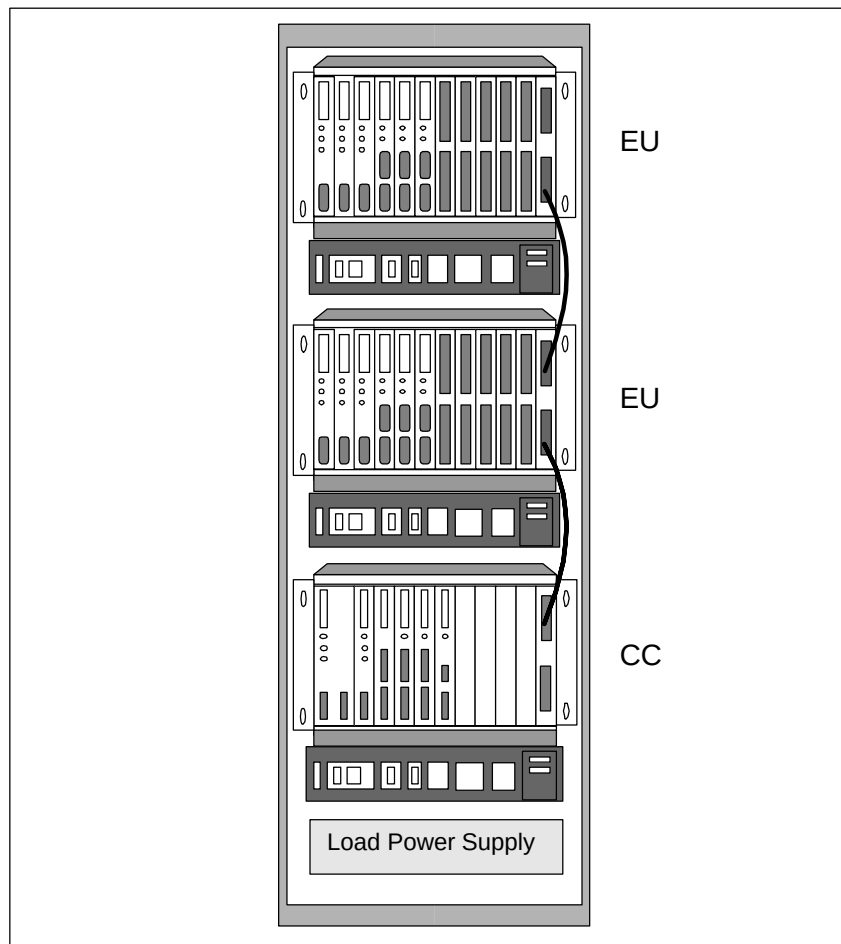


Figure 2-1 Centralized Configuration

Interface Modules

Various interface modules (IMs) are available for communication between a central controller and expansion units, and between expansion units. Interface modules in the central controller are known as EU interface modules; those inserted in an EU are known as CC interface modules.

This chapter describes the EU interface modules:

- IM 300-3, IM 300-5, IM 301-3, IM 301-5 and IM 304

as well as the CC interface modules:

- IM 312-3, IM 312-5, IM 310 and IM 314

Other IMs such as the IM 307-IM 317 and the IM 308-IM 318 are described in separate manuals (see Catalog ST 54.1). The IM 306 CC interface module is described in the S5-115U PLC manual.

A general overview of the applications of individual IMs can be found in Chapter 2: “Centralized and Distributed Configuration of a Programmable Controller.”

Chapter Overview

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7.1 The 300 and 312 Interface Modules

The 300 and 312 interface modules are used for **centralized** connection of I/O modules and signal preprocessing modules (IPs) to a CC via the following expansion units (allowing for possible configurations):

- EU 183U
- EU 184U
- EU 185U (only input/output modules)
- EU 187U
- ER 701-1

Additionally, you can utilize these IMs for secondary communication, i.e. additional EUs can be connected in a centralized arrangement to an EU 183U or EU 185U in distributed configuration. Up to four IM 300s can be used in one CC, up to two of which may be IM 300-5s. You can use one IM 300 in an EU 183U or EU 185U.

Application of the IM 300 and IM 312

An IM 300 EU interface module is complemented by an IM 312 or IM 306 CC interface module. Use the following IMs, depending on the connected EU:

EU Interface Module	EU Type	CC Interface Module
IM 300-5 C (6ES5 300-5CA11)	EU 184U, EU 187U	IM 312-5
IM 300-3 (6ES5 300-3AB11)	EU 183U EU 185U (only I/O modules)	IM 312-3
IM 300-5 L (6ES5 300-5LB11)	ER 701-1	IM 306

There are two versions of IM 312-3 and IM 312-5. They differ in the length of permanently connected cable:

Order No.	Cable Length
6ES5 312-5CA1X 6ES5 312-5CA2X	0.5 m 1.5 m
6ES5 312-3AB1X 6ES5 312-3AB3X	0.5 m 0.95 m

**Connecting the
EU 184U and
EU 187U**

For one IM 300-5, you can connect up to three EUs to a CC or EU in distributed arrangement (see Figures 7-5 and 7-6). The EUs are supplied with operating voltage via the IMs. Any free connections on the IM 300-5 and the last IM 312-5 require no terminator.

Note

The maximum permissible current over each connection of the IM 300-5CA11 is 5 A.

**Connecting the
EU 183U, EU 185U**

You can connect up to four EUs to each IM 300-3. The last IM 312-3 requires a terminator.

**Connecting the
ER 701-1**

You can connect up to three ERs to each IM 300-5L (-5LB11). The ERs are supplied with operating voltage via the IMs.

Note

The maximum permissible current over each connection of the IM 300-5LB11 is 2 A.

The connection of central controller and expansion unit to the IM 300-5LB11 is provided exclusively by the 705-0 connecting cable. It is available in two lengths: 0.5 m and 1.5 m (refer to the ordering information for order numbers).

Addressing

When the IM 300s are used in the S5-135U/155U PLC, the input/output modules can be addressed in the normal (P) and extended (O) areas.

You may only set module addresses in the EU which are not used in the CC. This applies to both areas.