

6.5 CP52A0 GDM access module

6.5.1 Areas of application

GlobalDataMemory

GlobalDataMemory (GDM) enables data exchange between **all** CPU modules in all racks of the system.

Since central memory supports the synchronous coupling of up to 44 racks, it is possible to operate up to 836 CPU modules in a maximum system configuration.

A separate rack is used for GDM. The CP52M0 memory module (slot 1) and an appropriate number of CP52IO interface modules (slots 2-12) are accommodated in the UR5213 rack with 21 slots.

Each rack that is coupled with GDM must contain a **CP52A0 access module**. These racks are interconnected with GDM by means of fiber-optic cables in a star topology.

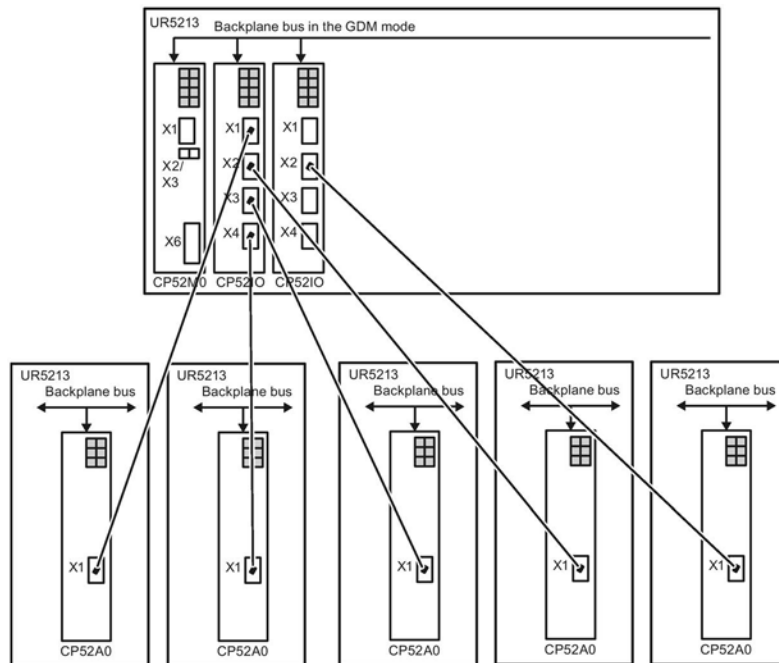


Figure 6-12 Example of a GDM system with 5 racks that are coupled with FOCs

6.5.2 Control and display elements

LED displays

The CP52A0 GDM access module is equipped with six LEDs that provide information on the current operating state of the module.

Table 6- 18 LED displays of the CP52A0 GDM access module

LED designation (color)	Function
H1 (green)	Operating state of the CP52A0 GDM access module
H2 (red)	
H3 (green)	FOC interface is transmitting data
H4 (yellow)	FOC interface is receiving error-free data
H5 (green)	Startup ID
H6 (yellow)	Send authorization for clock triggers or base sampling time

Front panel

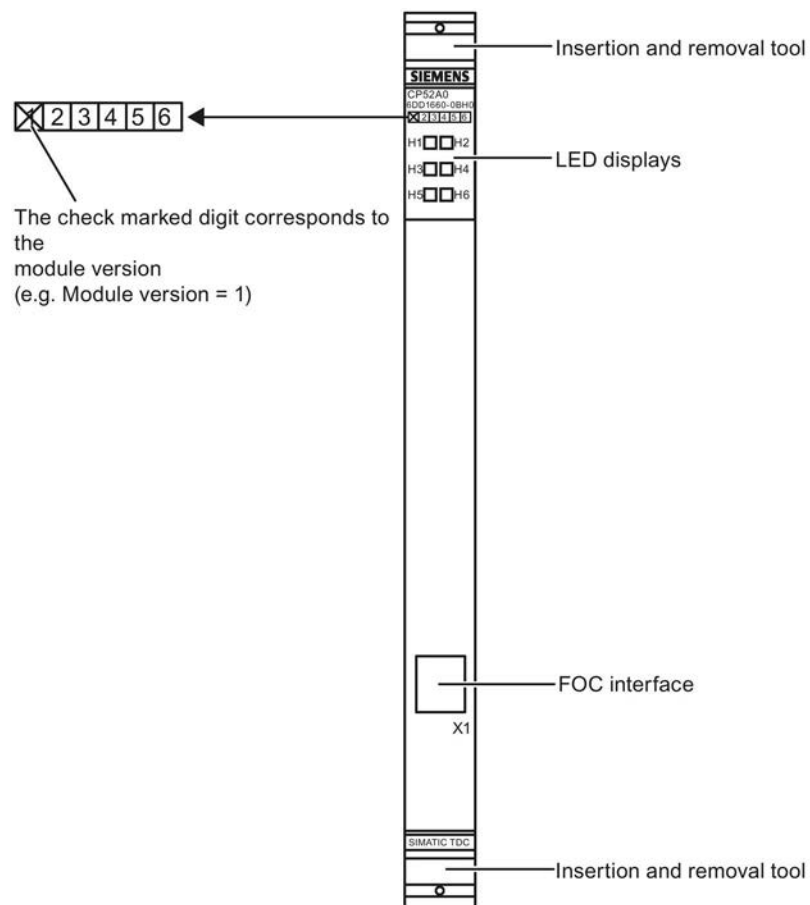


Figure 6-13 Front panel of CP52A0

6.5.3 Status and fault displays

Status displays for CP52A0

Table 6- 19 Status displays for the CP52A0 GDM access modules

LED display		Module status
H1	H2	
Off	Off	During voltage run-up
Off	On	FPGAs are configured, module is not initialized
On	Off	Module is initialized and operating error-free
On	On	After 3.3 V or 2.5 V voltage failure Hardware failure => Switch off the rack and replace CP52A0

Status displays for communication

Table 6- 20 Status and fault displays of the CP52A0 GDM access module

LED display		State
H3	Off	No data transmission to the CP52IO GDM interface module
	Glowing ^{*)} /lit	Data transmission to the CP52IO GDM interface module
H4	Off	Missing or faulty data transmission from the CP52IO GDM interface module
	Glowing ^{*)} /lit	Error-free data transmission from the CP52IO GDM interface module
H5	Off	No ramp-up ID from the CP52IO GDM interface module
	On	Ramp-up ID set
H6	Off	Clock trigger and base sampling time are parameterized and have send authorization from CP52IO
	On	The clock trigger and basic sampling time have been parameterized for transmission but have no transmit authorization from the CP52IO (priority logic is inhibiting one of the two signals)
*) The brightness of the LED indicates the density of periodic data traffic.		

6.5.5 Connection options

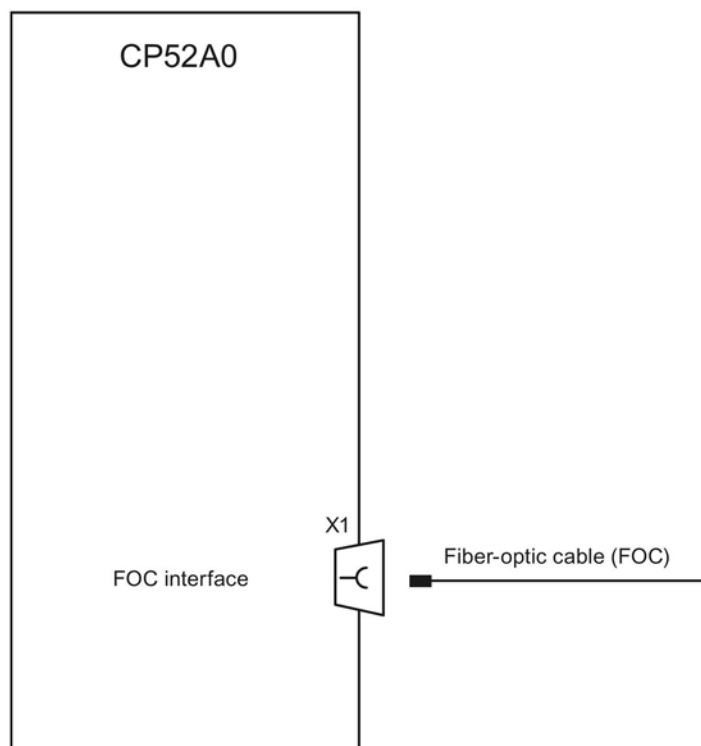


Figure 6-14 Connection options of CP52A0

6.5.6 Additional components

Fiber-optic cable (FOC)

A fiber-optic cable with a **core diameter of 62.5 μm /125 μm** is used to interconnect the CP52A0 GDM access module with the CP52IO GDM interface module. The cable is connected by means of **Duplex SC connectors**.

The **max. cable length** for the connection between CP52IO and CP52A0 is **200 m**.

The fiber-optic cables must be assembled in accordance with the plant topology and can be ordered from the following supplier:

Ehret GmbH

Über der Elz 2

79312 Emmendingen

6.5.7 Pin assignments

Fiber-optic cable interfaces X1

The fiber-optic cables are connected via a Duplex SC connector at connector X1 on the front panel

6.5.8 Technical specifications/performance features

Article number

CP52A0 GDM access module	6DD1660-0BH0
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Interface

FOC interface	
• Number	1
• Data transmission speed	640 Mbps
• Code	8B/10B
• Checksum test	CRC

Voltage, currents

Rated voltages at 25 °C	Typical current consumption
+5 V	1.5 A
3.3 V	0.4 A

Power losses/fan

Typical power losses	9 W
Fan required	No

Dimensions

Number of slots required in the rack	1
Dimensions W x H x D [mm]	20 x 233 x 160
Weight	0.6 kg