

SIMADYN D

Hardware

Manual

Edition 04.2011

Contents, Foreword

General technical data

1

Subracks

2

CPU module

3

Coupling memory module

4

Input/output modules

5

**Communications support
modules**

6

Technology subrack

7

**Program memory /
Interface modules**

8

Plug-in cables

9

Operator control panel OP2

10

Index

6.3 Fiber-optic cable subrack coupling CS12-CS22

Order No.	CS12: 6DD1660-0BC0 CS13: 6DD1660-0BB0 CS14: 6DD1660-0BA0 CS22: 6DD1660-0BD0
Description	An extremely fast coupling can be established between as many subracks as required via fiber-optic cable using the CS12 modules (or CS13, CS14) and CS22. A fiber-optic coupling consists of a master module, to which 1 to max. 8 slave modules can be connected. All of the master- and slave modules are accommodated in a dedicated subrack. The coupling practically represents an extension of the backplane bus, whereby data transfer is realized via the RAM memory on the CS12. All of the connected CS22 slave modules can access this; they all have the same priority. CS13 and CS14 consist of a CS12- and one or two ICS1 modules, which have fiber-optic cable connections for up to 4 or 8 slaves.
Features	• max. fiber-optic cable length of a point-to-point connection: 200 m • data transfer time: approx. 5 μs each 16-bit value for a L/C bus under normal load conditions max. approx. 32 μs per 16-bit value for an L/C bus under extremely high load conditions • 128 kbyte RAM memory on CS12 • a master module can transfer the following signals to the slave: – basic sampling time (to synchronize the slave) – alarm interrupt (to call an interrupt task) – clock interrupt (to set the real-time clock) • L- and C bus connections; • not intended for use in the SR6(V), as data transfer is only realized via the C bus

6.3.1 Slave connection

Depending on the master module type, 1 to 8 slaves (CS22) can be connected:

Master module	No. of slots	No. of slaves (CS22)
CS12	1	1
CS13 (consists of CS12 + ICS1)	2	1 to 4
CS14 (consists of CS12 + ICS1 + ICS1)	3	1 to 8

The following diagrams and tables illustrate the fiber-optic cable connections to be connected for the possible master-slave configurations.

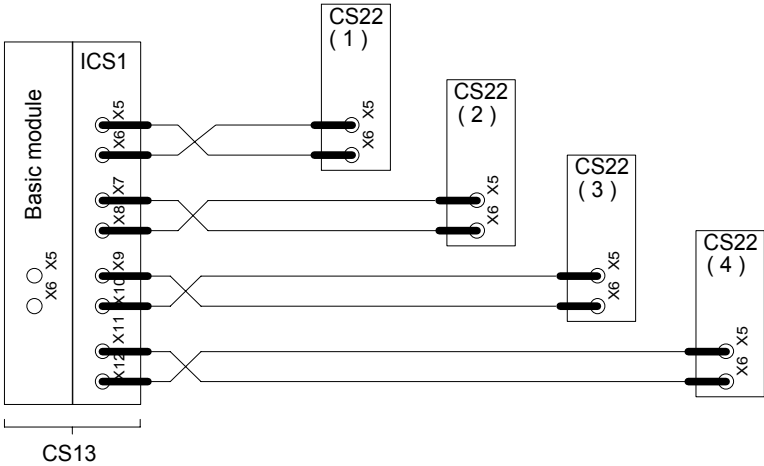
The interfaces are defined (fiber-optic cable connections) by appropriately configuring in HWConfig.

For CS13 and CS14, the two fiber-optic cable connections on the basic CS12 module are not used

Connecting 1 slave

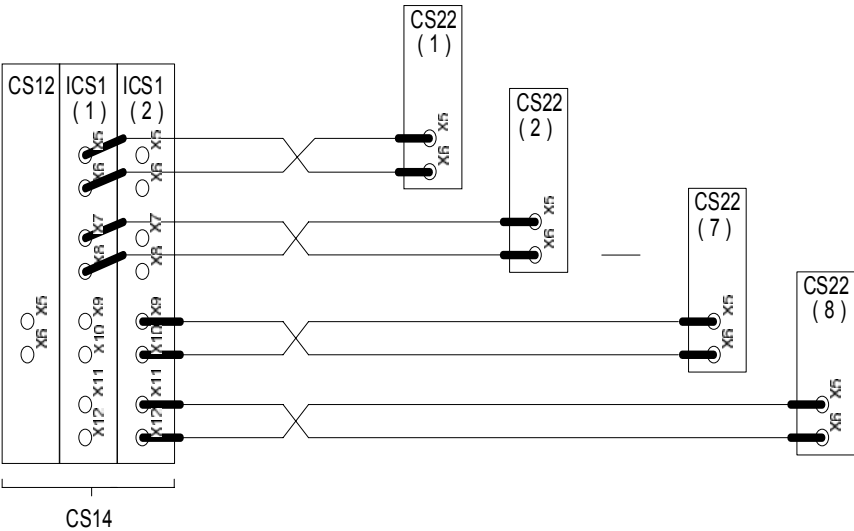
Master module CS12			Slave module CS22				
CS12		Type	1				
X5		Trans.	X6				
X6		Rec.	X5				

Connecting 4 slaves



Master module CS13				Slave module CS22			
CS12	ICS1		Type	1	2	3	4
X5			Not used				
X6							
	X5		Trans.	X6			
	X6		Rec.	X5			
	X7		Trans.		X6		
	X8		Rec.		X5		
	X9		Trans.			X6	
	X10		Rec.			X5	
	X11		Trans.				X6
	X12		Rec.				X5

Connecting 8 slaves



Master module				Slave module							
CS14				CS22							
CS12	ICS1	ICS1	Type	1	2	3	4	5	6	7	8
X5			Not used								
X6											
	X5		Trans.	X6							
	X6		Rec.	X5							
	X7		Trans.		X6						
	X8		Rec.		X5						
	X9		Trans.			X6					
	X10		Rec.			X5					
	X11		Trans.				X6				
	X12		Rec.				X5				
		X5	Trans.					X6			
		X6	Rec.					X5			
		X7	Trans.						X6		
		X8	Rec.						X5		
		X9	Trans.							X6	
		X10	Rec.							X5	
		X11	Trans.								X6
		X12	Rec.								X5

Cascading capability

In a subrack, several master modules as well as master- and slave modules can be used together. Thus, branched or extremely large networks can be created.

6.3.2 Supplementary components

Fiber-optic cable Order designation

The following fiber-optic cable is used for the coupling:

SINEC FIBER OPTIC CABLE standard cable,
assembled in pairs with 4 BFOC connectors

A detailed description of the fiber-optic cable is described in Catalog "SINEC Industrial Communication Networks, IK 10".

		6XV1 820-5B	□ □ □
		↑ ↑ ↑	
Multiplier	0,1 m	H	
	1 m	N	
	10 m	T	
	100 m	U	
Length code	0.	0	
	1.	1	
	2.	2	
	3.	3	
	4.	4	
	5.	5	
	6.	6	
	7.	7	
	8.	8	
	.0	0	
	.1	1	
	.2	2	
	.3	3	
	.4	4	
	.5	5	
	.6	6	
	.7	7	
	.8	8	

Table 6-1 Fiber-optic cable Order No. and length code

6.3.3 Application information and noise immunity

- The CS1x, CS22 modules may only be used in a **force-ventilated** subrack.
- The modules can only be used in SR12.x and SR24.x subracks (C bus required).
- Before the power supply voltage of a subrack is **switched-on (powered-up)**, all of the plug connections of the fiber-optic cables involved must be inserted.
In operation, the plug connectors of the fiber-optic cable coupling may not be released.
- Master- and slave **subracks can be powered-down while in operation and powered-up again**. The coupling is then re-established.

- If a fiber-optic cable is not inserted, the transmit- and receive connections must be protected using the appropriate caps
- As CS13, CS14 of the ICS1 partial modules do not have a connector at the L/C bus, when required, **Daisy Chain jumpers** must be inserted (if there is still a CPU module to the right)!
- noise-immune operation is only possible if the module is tightly screwed into the subrack

Other information

Further information on EMC and ambient conditions, refer to Section "General technical data"

6.3.4 Technical data

General data

No. of slots occupied	CS12: 1 CS13: 2 CS14: 3 CS22: 1
Dimensions W x H x D [mm]	CS12: 20.14 x 233.4 x 220 CS13: 40.28 x 233.4 x 220 CS14: 60.42 x 233.4 x 220 CS22: 20.14 x 233.4 x 220
Weight [kg]	CS12: 0.5 CS13: 0.8 CS14: 1.1 CS22: 0.4

Power supply voltage

Rated voltage	min.	max.	Typ. current drain
+5 V	+4.75 V	+5.25 V	CS12: 1.8 A CS13: 4.0 A CS14: 5.5 A CS22: 1.5 A
+15 V	+14.4 V	+15.6 V	CS12: 50 mA CS13: 100 mA CS14: 150 mA CS22: 150 mA