OFFICIAL DOCUMENT PACKAGE

Manufacturer's Manual

Amikon cover with selected official Siemens technical pages

SIEMENS S7-400

6ES7400-1TA11-0AA0

UR1 ALUMINUM RACK

Selected official pages retain the original technical tables, ratings, notes and pagination.

OFFICIAL SOURCE

Siemens S7-400 A5E00850736-08, 11/2016; ST 400, 05/2017

Manual pages27-30; catalog pages1/118-1/119

This technical extract does not replace the complete equipment and system manuals. Check the installed hardware and project before use.

Rack

2

2.1 Function and design of the racks

Introduction

The racks for the S7-400 have the following functions:

- They physically hold the modules.
- They supply the modules with operating voltage.
- They connect the individual modules to each other via the signal busses.

Design of the racks

A rack consists of the following elements:

- Mounting rail with threaded bolts for fixing the modules and lateral cutouts for mounting the rack
- Plastic parts that function, among other things, as guides when swinging the modules into place
- A backplane bus, an I/O bus and, if necessary, a communication bus with bus connector
- Connection for local ground

The following figure shows the mechanical configuration of a rack (UR1).

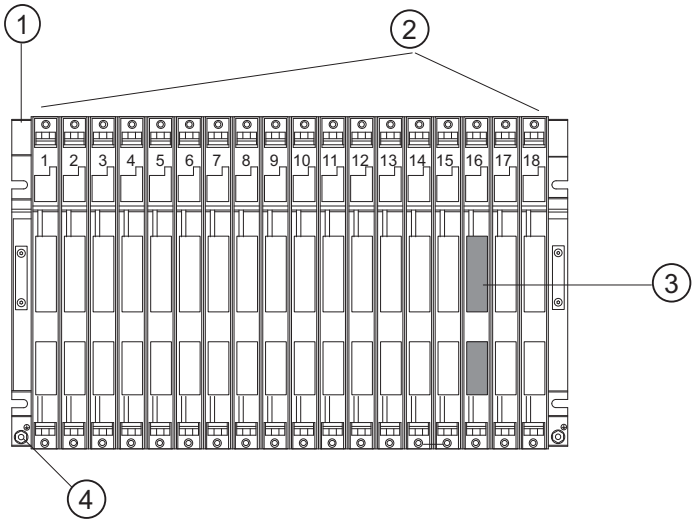


Figure 2-1 Configuration of a rack with 18 slots

(1) Mounting rail
(2) Plastic parts

(3) Bus connector (covered when shipped)

(4) Connection for local ground

UL/CSA note

Special requirements should be taken into consideration in the area of influence of the UL/CSA; these may be fulfilled by installing the system in a cabinet.

2.2 The racks UR1 (6ES7400-1TAx1-0AA0) and UR2 (6ES7400-1JAx1-0AA0)

Order number

The "x" variable has the following meaning for order numbers 6ES7400-1TAx1-0AA0 and 6ES7400-1JAx1:

- x=0: Mounting rail made of sheet steel
- x=1: Mounting rail made of aluminum

Introduction

The UR1 and UR2 racks are used for assembling central racks and expansion racks. The UR1 and UR2 racks have both an I/O bus and a communication bus.

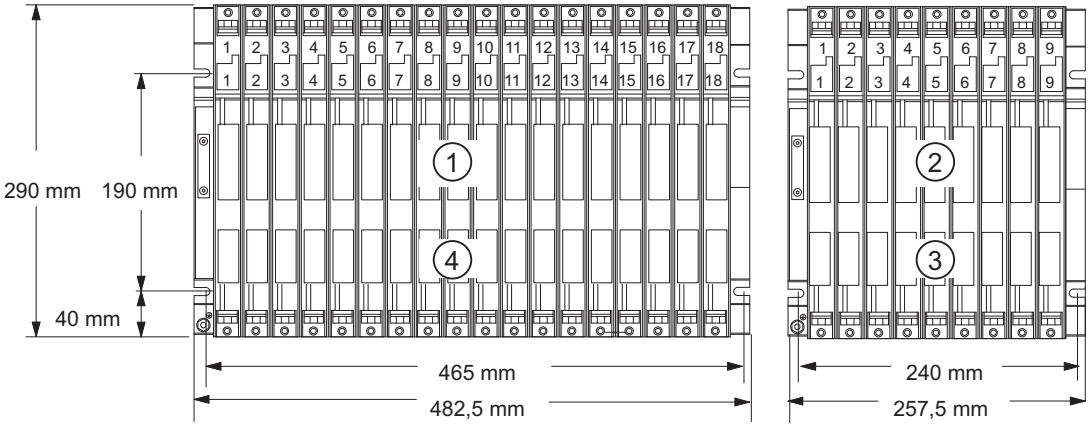
Suitable modules for UR1 and UR2

You can use the following modules in the UR1 and UR2 racks:

- When the UR1 or UR2 is used as a central rack:
  All S7-400 modules except for receive IMs
- When the UR1 or UR2 is used as an expansion rack:
  All S7-400 modules except for CPUs and send IMs

Special case: Power supply modules cannot be used in conjunction with the IM 461-1 receive IM.

Design of the UR1 and UR2



(1)+(2) I/O bus

(3)+(4) Communication bus

Figure 2-2 UR1 rack with 18 slots and UR2 with 9 slots

Specifications of the UR1 and UR2 racks

Rack	UR1 6ES7 400-1TA01-0AA0	UR1 6ES7 400-1TA11-0AA0	UR2 6ES7 400-1JA01-0AA0	UR2 6ES7 400-1JA11-0AA0
Number of single-width slots	18	18	9	9
Dimensions W x H x D (mm)	482.5x 290 x 27.5	482.5x 290 x 27.5	257.5x 290 x 27.5	257.5x 290 x 27.5
Material of the mounting rail	Sheet steel	Aluminum	Sheet steel	Aluminum
Weight (in kg)	4,1	3,0	2,15	1,5
Busses	I/O bus and communication bus			

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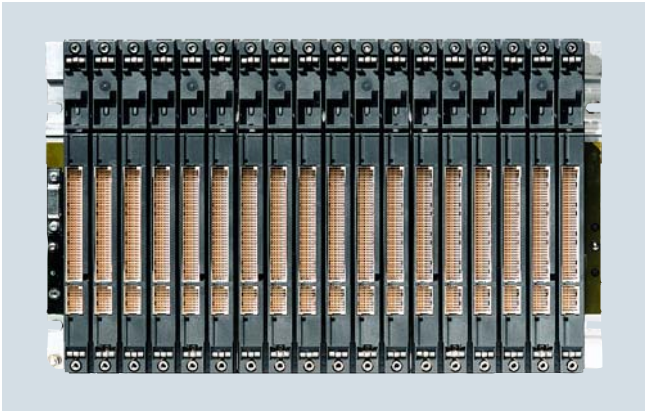
Racks

Overview



- The basic mechanical framework of the SIMATIC S7-400/S7-400H
- For accommodating the modules, supplying them with operating voltage and connecting them via the backplane bus
- Several versions for configuring central controllers and expansion racks

UR1 (Universal Rack)

- For setting up central controllers and expansion units
- For holding up to 18 modules
- Also suitable for S7-400H
- Also available as aluminum rack

UR2 (Universal Rack)

- For setting up central controllers and expansion units
- For holding up to 9 modules
- Also suitable for S7-400H
- Also available as aluminum rack

CR2 (Central Rack)

- For setting up central controllers
- For holding up to 18 modules
- Segmented rack:
  For operating two mutually independent S7-400 CPUs without S7-400 Multicomputing, but with communication between the CPUs over the backplane bus (C bus). Both CPUs can address their own local I/O modules (segmented P bus).

CR3 (Central Rack)

- For configuring central racks
- Optimized for distributed automation solutions due to holding up to 4 modules

UR2-H

- For configuring a complete S7-400H system in one subrack
- Also suitable for S7-400:
  Operation of 2 separate CPUs with their own I/O (separate P and C buses)
- Can also be used as an expansion unit
- For holding up to 18 modules
- Also available as aluminum rack

ER1 (Extension Rack)

- For setting up expansion units economically
- For holding up to 18 modules with restricted functionality
- Also suitable for S7-400H
- Also available as aluminum rack

ER2 (Extension Rack)

- For setting up expansion units economically
- For holding up to 9 modules with restricted functionality
- Also suitable for S7-400H
- Also available as aluminum rack

Technical specifications

Article number	**6ES7400-1TA01-0AA0** S7-400, UR1 RACK, 18 SLOTS	**6ES7400-1TA11-0AA0** S7-400, UR1 RACK ALU, 18 SLOTS	**6ES7400-1JA01-0AA0** S7-400, UR2 RACK, 9 SLOTS	**6ES7400-1JA11-0AA0** S7-400 RACK ALU UR2, 9 SLOTS	**6ES7401-2TA01-0AA0** SIMATIC S7-400, CR2 RACK, 18 SLOTS	**6ES7401-1DA01-0AA0** S7-400 CR3 RACK, 4 SLOTS
Product type designation						
Hardware configuration						
Rack						
• Communication bus	Yes	Yes	Yes	Yes	Yes	Yes
• P bus	Yes	Yes	Yes	Yes	Yes	Yes
Slots						
• Number of single-width slots, max.	18	18	9	9	18; 2 segments with 8 or 10 slots	4
Dimensions						
Width	482.5 mm	482.5 mm	257.5 mm	257.5 mm	482.5 mm	130 mm
Height	290 mm	290 mm	290 mm	290 mm	290 mm	290 mm
Depth	27.5 mm	27.5 mm	27.5 mm	27.5 mm	27.5 mm	27.5 mm
Weights						
Weight, approx.	4 200 g	3 000 g	2 200 g	1 500 g	4 200 g	750 g

Technical specifications (continued)

Article number	6ES7400-2JA00-0AA0 SIMATIC S7-400H, UR2-H RACK, 18 SLOTS	6ES7400-2JA10-0AA0 S7-400 MOD.TR ALU UR2-H, 18 SLOTS	6ES7403-1TA01-0AA0 SIMATIC S7-400, ER1 EXP. RACK,	6ES7403-1TA11-0AA0 S7-400, ER1 EXPANSION RACK ALU, 18 SLOTS	6ES7403-1JA01-0AA0 SIMATIC S7-400, ER2 EXP. RACK,	6ES7403-1JA11-0AA0 S7-400, ER2 EXPANSION RACK ALU, 9 SLOTS
Product type designation						
Hardware configuration						
Rack						
• Communication bus	Yes	Yes				
• P bus	Yes	Yes	Yes	Yes	Yes	Yes
Slots						
• Number of single-width slots, max.	18	18	18	18	9	9
Dimensions						
Width	482.5 mm	482.5 mm	482.5 mm	482.5 mm	257.5 mm	257.5 mm
Height	290 mm	290 mm	290 mm	290 mm	290 mm	290 mm
Depth	27.5 mm	27.5 mm	27.5 mm	27.5 mm	27.5 mm	27.5 mm
Weights						
Weight, approx.	4 200 g	3 000 g	4 200 g	2 500 g	2 200 g	1 250 g

Ordering data

	Article No.
UR1 rack for central controllers and expansion units, 18 slots	**6ES7400-1TA01-0AA0**
UR1 aluminum rack for central controllers and expansion units, 18 slots	**6ES7400-1TA11-0AA0**
UR2 rack for central controllers and expansion units, 9 slots	**6ES7400-1JA01-0AA0**
UR2 aluminum rack for central controllers and expansion units, 9 slots	**6ES7400-1JA11-0AA0**
CR2 rack for segmented central controllers, 18 slots, 2 local segments	**6ES7401-2TA01-0AA0**
CR3 rack for central controllers and expansion units, 4 slots; optimized for distributed automation solutions	**6ES7401-1DA01-0AA0**

	Article No.
UR2-H rack for split CCs, 18 slots	**6ES7400-2JA00-0AA0**
UR2-H aluminum rack for split CCs, 18 slots	**6ES7400-2JA10-0AA0**
ER1 rack for expansion units, P bus only, 18 slots	**6ES7403-1TA01-0AA0**
ER1 aluminum rack for expansion units, P bus only, 18 slots	**6ES7403-1TA11-0AA0**
ER2 rack for expansion units, P bus only, 9 slots	**6ES7403-1JA01-0AA0**
ER2 aluminum rack for expansion units, P bus only, 9 slots	**6ES7403-1JA11-0AA0**
Slot cover 10 units (spare part)	**6ES7490-1AA00-0AA0**