General information

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The SINAMICS V90 drives with the PROFINET interface (referred to as SINAMICS V90 PN) are available in two variants, 400 V variant and 200 V variant.
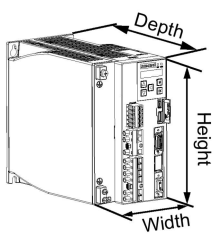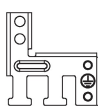
The 200 V variant is available in four frame sizes: FSA, FSB, FSC, and FSD. Frame sizes A, B, and C are used on the single phase or three phase power network while frame size D is used on the three phase power network only.

The 400 V variant is available in four frame sizes: FSAA, FSA, FSB, and FSC. All the frame sizes are used on three phase power network only.
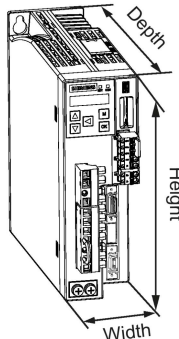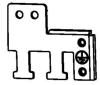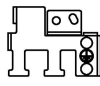
2.1 Scope of delivery

2.1.1 Drive components

Components in the SINAMICS V90 PN 200 V variant drive package

Component	Illustration	Rated power (kW)	Outline dimension (Width x Height x Depth, mm)	Frame size	Article number
SINAMICS V90 PN, single/three-phase, 200 V		0.1/0.2	45 x 170 x 170	FSA	6SL3210-5FB10-1UF2
					6SL3210-5FB10-2UF2
		0.4	55 x 170 x 170	FSB	6SL3210-5FB10-4UF1
		0.75	80 x 170 x 195	FSC	6SL3210-5FB10-8UF0
SINAMICS V90 PN, three-phase, 200 V		1.0/1.5/2.0	95 x 170 x 195	FSD	6SL3210-5FB11-0UF1
					6SL3210-5FB11-5UF0
					6SL3210-5FB12-0UF0
Connectors		For FSA and FSB			
		For FSC and FSD			
Shielding plate		For FSA and FSB			
		For FSC and FSD			
User documentation	Information Guide	English-Chinese bilingual version			

Components in the SINAMICS V90 PN 400 V variant drive package

Component	Illustration	Rated power (kW)	Outline dimension (Width x Height x Depth, mm)	Frame size	Article number
SINAMICS V90 PN, three-phase, 400 V		0.4	60 x 180 x 200	FSAA	6SL3210-5FE10-4UF0
		0.75/1.0	80 x 180 x 200	FSA	6SL3210-5FE10-8UF0
					6SL3210-5FE11-0UF0
		1.5/2.0	100 x 180 x 220	FSB	6SL3210-5FE11-5UF0
					6SL3210-5FE12-0UF0
		3.5/5.0/7.0	140 x 260 x 240	FSC	6SL3210-5FE13-5UF0
					6SL3210-5FE15-0UF0
					6SL3210-5FE17-0UF0
Connectors		For FSAA			
		For FSA			
		For FSB and FSC			
Shielding plate		For FSAA and FSA			
		For FSB and FSC			
User documentation	Information Guide	English-Chinese bilingual version			

2.4.2 PROFINET cable and connector

The cable is used to connect the drive to a controller.

Name	Article number	Length (m)
SINAMICS V90 PROFINET I/O connector (20 pins)	6SL3260-2MA00-0VA0	-
SINAMICS V90 PROFINET I/O cable (20 pins) [1]	6SL3260-4MA00-1VB0	1
RJ45 data plug-in connector, with 180° (straight) cable outlet	6GK1901-1BB10-2AA0	-
Standard bus cable (4-core), sold by meter, not assembled	6XV1840-2AH10	-
Preassembled PROFINET cable, with two RJ45 plug-180 connectors	6XV1871-5BH10	1

[1] The wire color of the PROFINET I/O cable exposed side, see Section "Control/status interface - X8 (Page 117)".
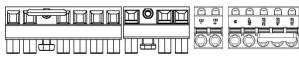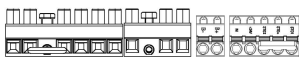
2.4.3 USB cable

The USB cable is used to connect the drive to a PC for commissioning the drive directly from the PC.

Name	Article number	Length (m)
USB cable	6SL3255-0AA00-2CA0	3

2.4.4 Connectors used on the drive front panel

If you need a new connector that used on the drive front panel, you can order a connector kit from Siemens.

Connector kits

Illustration	Used for (SINAMICS servo drive)	Article number
200 V variant		
	FSA, FSB	6SL3200-0WT02-0AA0
	FSC, FSD	6SL3200-0WT03-0AA0
400 V variant[1]		
	FSAA	6SL3200-0WT00-0AA0
	FSA	6SL3200-0WT01-0AA0

[1] The SINAMICS V90 400 V FSB and FSC servo drives connect to the line supply via barrier terminals; thus, they do not have their own connector kit. To obtain the connectors for 24 V power supply and motor holding brake interfaces, purchase the connector kits of 400 V FSAA or FSA.

Engineering tool - SINAMICS V-ASSISTANT

You can use the engineering tool SINAMICS V-ASSISTANT to perform the trial operation.

SINAMICS V-ASSISTANT is a software tool that can be installed on a PC and runs on the Windows operating system. It communicates with the SINAMICS V90 PN servo drive with a USB cable.

To ensure the stability of online commissioning, Siemens recommends that you use one of the following cables to connect your PC to the drive:
• A shielded USB cable of no longer than 3 m with ferrite cores on both ends (article number: 6SL3255-0AA00-2CA0)
• A network cable with RJ45 connectors (valid only for SINAMICS V90 PTI servo drive firmware version 1.11 or later and SINAMICS V-ASSISTANT software version 1.07 or later)

With SINAMICS V-ASSISTANT, you can change drive parameters and monitor drive working states in online mode.

For more information, refer to the SINAMICS V-ASSISTANT Online Help. You can search and download SINAMICS V-ASSISTANT from Technical support website (https://support.industry.siemens.com/cs/ww/en/).

5.2 Commissioning in JOG mode

Commissioning purpose

When the servo drive is powered on for the first time, you can perform a test run with the BOP or the engineering tool SINAMICS V-ASSISTANT to check:
• Whether the line supply has been connected correctly
• Whether the 24 V DC power supply has been connected correctly
• Whether the cables (power cable, encoder cable, and brake cable) between the servo drive and the servo motor have been connected correctly
• Whether the motor speed and direction of rotation are correct

Prerequisites

• The servo drive is connected to the servo motor without load

• The servo drive is not in servo on status

Operating sequence

Note

Set bit 0 of parameter p29108 to 1, and then save the parameter setting and restart the drive, to enable the JOG function; otherwise, you cannot access the function related parameter p1058.

If you have assigned digital signal EMGS, keep it at a high level (1) to ensure normal operation.