

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS

6ES7288-1SR20-0AA1

S7-200 SMART CPU SR20

Used with the applicable SIMATIC S7-200 SMART configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: SIMATIC S7-200 SMART System Manual

1.2 New Features

1.2.1 What's new in S7-200 SMART V2.8?

Only the following CPU models with firmware V2.8 support the new features described in this chapter:

Table 1-4 CPU models affected by firmware V2.8

CPU model	Article number
CPU SR20, AC/DC/Relay	6ES7288-1SR20-0AA1
CPU ST20, DC/DC/DC	6ES7288-1ST20-0AA1
CPU SR30, AC/DC/Relay	6ES7288-1SR30-0AA1
CPU ST30, DC/DC/DC	6ES7288-1ST30-0AA1
CPU SR40, AC/DC/Relay	6ES7288-1SR40-0AA1
CPU ST40, DC/DC/DC	6ES7288-1ST40-0AA1
CPU SR60, AC/DC/Relay	6ES7288-1SR60-0AA1
CPU ST60, DC/DC/DC	6ES7288-1ST60-0AA1

Note

CPU models with firmware V2.8 cannot be downgraded to V2.7 or any previous versions.

STEP 7-Micro/WIN SMART V2.8 release provides the following new features:

New instructions

- **Bit logic**
 - Alternating output and alternating output on pulse (Page 225)
- **Convert**
 - Double float to real (Page 274)
 - BCD to Double Integer (Page 274)
 - Double Integer to BCD (Page 274)
 - Scale (Page 291)

The number of pulse width modulated (PWM) increases from three to four: the fourth PWM instruction (Page 328) is supported.

Enlarged memory ranges

For the CPU SR/ST 20, SR/ST 30, SR/ST 40 and SR/ST 60, the variable memory (Page 998) increases by 4KB separately.

For the CPU SR/ST 20, SR/ST 30, SR/ST 40 and SR/ST 60, the retentive range (Page 155) increases by 2KB separately.

Security enhancement

- PLC Security enhancement (Page 156): Use more sophisticated and efficient algorithms to protect the security of PLC.
- POU Security enhancement (Page 39): Use more powerful algorithms to protect the security of POU.

1.2.2 What's new in S7-200 SMART V2.7?

Only the following CPU models with firmware V2.7 support the new features described in this chapter:

Table 1-5 CPU models affected by firmware V2.7

CPU model	Article number
CPU SR20, AC/DC/Relay	6ES7288-1SR20-0AA1
CPU ST20, DC/DC/DC	6ES7288-1ST20-0AA1
CPU SR30, AC/DC/Relay	6ES7288-1SR30-0AA1
CPU ST30, DC/DC/DC	6ES7288-1ST30-0AA1
CPU SR40, AC/DC/Relay	6ES7288-1SR40-0AA1
CPU ST40, DC/DC/DC	6ES7288-1ST40-0AA1
CPU SR60, AC/DC/Relay	6ES7288-1SR60-0AA1
CPU ST60, DC/DC/DC	6ES7288-1ST60-0AA1

Note

CPU models with firmware V2.7 cannot be downgraded to V2.6 or any previous versions.

Note

Any previous SR or ST model with an article number ending with OAA0 cannot be upgraded to V2.7.

CPU models with an article number ending with OAA1 cannot be downgraded to any previous firmware versions.

STEP 7-Micro/WIN SMART V2.7 release provides the following new features:

Axes group of motion

STEP 7-Micro/WIN SMART V2.7 and the S7-200 SMART V2.7 CPU firmware supports PTO (Pulse Train Output) based open loop motion control for 2D/3D linear interpolation movement.

2D/3D linear interpolation movement

Motion wizard is used to configure axes group (Page 810) and generate a POU (program organizational unit) to command a 2D/3D linear interpolation movement on an axes group from the actual position to the target absolute or relative position.

Move path

Motion wizard (Page 810) is used to configure axes group and generate a POU to command an axes group to move according to the path specified in multi-segment configuration.

Axis of motion enhancement

Override

Override (Page 324) function provides a motion enhancement for Axis of motion. If a new motion control command is started for an axis while another motion control command is active, the active command is overridden by the new command before the existing command is completely executed.

User defined Web pages

STEP 7-Micro/WIN SMART V2.7 and the S7-200 SMART V2.7 CPU firmware add user defined Web pages functions for Web server.

SMART Web Editor (Page 207) is the tool for user to create user defined web pages project which can be downloaded on Web server.

Web API (Application Programming Interface)

STEP 7-Micro/WIN SMART V2.7 and the S7-200 SMART V2.7 CPU firmware add Web API (Page 210) functions, providing an interface for user to read and write CPU data from terminal devices.

1.2.3 What's new in S7-200 SMART V2.6?

Only the following CPU models support V2.6 and the new features described in this chapter:

Table 1-6 CPU models affected by firmware V2.6

CPU model	Article number
CPU SR20, AC/DC/Relay	6ES7288-1SR20-0AA1
CPU ST20, DC/DC/DC	6ES7288-1ST20-0AA1
CPU SR30, AC/DC/Relay	6ES7288-1SR30-0AA1
CPU ST30, DC/DC/DC	6ES7288-1ST30-0AA1
CPU SR40, AC/DC/Relay	6ES7288-1SR40-0AA1