

4 Installation and Commissioning

4.1 Hardware adaptation

Table 4-3

Resistance thermometer	Article number	Type	Resolution	
		Temperature / resistance	Temperature	Resistance
SB 1231 AI 1 x 16 bit RTD	6ES7231-5PA30-0XB0	Module reference RTD and Ω	0.1 °C/0.1 °F	15 bits + sign
SM 1231 AI 4 x RTD x 16 bit	6ES7231-5PD32-0XB0	Module reference RTD and Ω	0.1 °C/0.1 °F	15 bits + sign
SM 1231 AI 8 x RTD x 16 bit	6ES7231-5PF32-0XB0	Module reference RTD and Ω	0.1 °C/0.1 °F	15 bits + sign

4.1.2 Output signal

The “PID_Compact” controller provides the control of the actuator via an analog output or via a digital pulse-width modulated output.

Analog outputs

Table 4-4

Analog outputs	Article number	Type	
		Voltage (resolution)	Current (resolution)
CPU 1215C/ CPU 1217C	all controllers 1215C/1217C	no	0 to 20 mA (10 bits)
SB 1232 AO 1 x 12 bit	6ES7232-4HA30-0XB0	±10 V (12 bits)	0 to 20 mA (11 bits)
SM 1232 AO 2 x 14 bit SM 1232 AO 4 x 14 bit SM 1234 AI 4 x 13 bit / AO 2 x 14 bit	6ES7232-4HB32-0XB0 6ES7232-4HD32-0XB0 6ES7234-4HE32-0XB0	±10 V (14 bits)	0 to 20 mA or 4 to 20 mA (13 bits)

Digital outputs

Depending on the power consumption of your digital valve control, you can choose between S7-1200 controllers with transistor or relay outputs:

Table 4-5

Digital outputs	Voltage range	Current (max.)
Transistor	20.4 to 28.8 V	0.5 A
Relay	5 to 250 V	2 A

Note

SB = signal board (each CPU has a slot for a signal board)
SM = signal module

- up to 2 signal modules can be connected to CPU 1212C
- up to 8 signal modules can be connected to CPU 1214C/1215C/1217C.

Further information on the selection and wiring of peripheral components is available in [Chapter A “Technical Specifications”](#) in the S7-1200 manual ([13](#)).