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# Manufacturer's Manual

Amikon cover with selected official Siemens technical pages

SIEMENS SIMATIC S7-1200

## 6ES7232-4HB32-0XB0

SM 1232 AQ 2 X 14 BIT

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

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Siemens S7-1200 A5E02486680-AO; S200 PTI 11/2024

Original S7-1200 manual pages 1279-1280

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

## A.10.2 SM 1232 analog output module specifications

Table A-149 General specifications

| Technical data                | SM 1232 AQ 2 x 14 bit | SM 1232 AQ 4 x 14 bit |
|-------------------------------|-----------------------|-----------------------|
| Article number                | 6ES7232-4HB32-0XB0    | 6ES7232-4HD32-0XB0    |
| Dimensions W x H x D (mm)     | 45 x 100 x 75         |                       |
| Weight                        | 180 grams             |                       |
| Power dissipation             | 1.8 W                 | 2.0 W                 |
| Current consumption (SM Bus)  | 80 mA                 |                       |
| Current consumption (24 V DC) | 45 mA (no load)       |                       |

Table A-150 Analog outputs

| Technical data                       | SM 1232 AQ 2 x 14 bit                                                                                                | SM 1232 AQ 4 x 14 bit |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------|-----------------------|
| Number of outputs                    | 2                                                                                                                    | 4                     |
| Type                                 | Voltage or current                                                                                                   |                       |
| Range                                | $\pm 10$ V, 0 to 20 mA, or 4 mA to 20 mA                                                                             |                       |
| Resolution                           | Voltage: 14 bits<br>Current: 13 bits                                                                                 |                       |
| Full scale range (data word)         | Voltage: -27,648 to 27,648 ; Current: 0 to 27,648<br>Refer to the output ranges for voltage and current (Page 1286). |                       |
| Accuracy (25 °C / -20 to 60 °C)      | $\pm 0.3\%$ / $\pm 0.6\%$ of full scale                                                                              |                       |
| Settling time (95% of new value)     | Voltage: 300 $\mu$ s (R), 750 $\mu$ s (1 uF)<br>Current: 600 $\mu$ s (1 mH), 2 ms (10 mH)                            |                       |
| Load impedance                       | Voltage: $\geq 1000 \Omega$<br>Current: $\leq 600 \Omega$                                                            |                       |
| Maximum output short circuit current | Voltage mode: $\leq 24$ mA<br>Current mode: $\geq 38.5$ mA                                                           |                       |
| Behavior on RUN to STOP              | Last value or substitute value (default value 0)                                                                     |                       |
| Isolation (field side to logic)      | none                                                                                                                 |                       |
| Isolation (24 V to output)           | none                                                                                                                 |                       |
| Cable length (meters)                | 100 m twisted and shielded                                                                                           |                       |

Table A-151 Diagnostics

| Technical data                              | SM 1232 AQ 2 x 14 bit | SM 1232 AQ 4 x 14 bit |
|---------------------------------------------|-----------------------|-----------------------|
| Overflow/underflow                          | Yes                   |                       |
| Short to ground (voltage mode only)         | Yes                   |                       |
| Wire break (current mode only) <sup>1</sup> | Yes                   |                       |
| 24 V DC low voltage <sup>2</sup>            | Yes                   |                       |

<sup>1</sup> Short circuit detection is only possible when the output voltage is less than -0.5 V or greater than +0.5 V.

<sup>2</sup> Wire break detection is only possible when the output current is greater than 1 mA.

A.10 Analog signal modules (SMs)

Table A-152 Wiring diagrams for the analog output SMs

| SM 1232 AQ 2 x 14 bit (6ES7232-4HB32-0XB0)                                     | SM 1232 AQ 4 x 14 bit (6ES7232-4HD32-0XB0) |
|--------------------------------------------------------------------------------|--------------------------------------------|
|                                                                                |                                            |
| Note: Connectors must be gold. See Appendix C, Spare Parts for article number. |                                            |

Table A-153 Connector pin locations for SM 1232 AQ 2 x 14 bit (6ES7232-4HB32-0XB0)

| Pin | X10 (gold)       | X11 (gold)    |
|-----|------------------|---------------|
| 1   | L+ / 24 V DC     | No connection |
| 2   | M / 24 V DC      | No connection |
| 3   | Functional Earth | No connection |
| 4   | No connection    | AQ 0M         |
| 5   | No connection    | AQ 0          |
| 6   | No connection    | AQ 1M         |
| 7   | No connection    | AQ 1          |

Table A-154 Connector pin locations for SM 1232 AQ 4 x 14 bit (6ES7232-4HD32-0XB0)

| Pin | X10 (gold)       | X12 (gold)    | X13 (gold)    |
|-----|------------------|---------------|---------------|
| 1   | L+ / 24 V DC     | No connection | No connection |
| 2   | M / 24 V DC      | No connection | No connection |
| 3   | Functional Earth | No connection | No connection |
| 4   | No connection    | AQ 0M         | AQ 2M         |
| 5   | No connection    | AQ 0          | AQ 2          |