

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Selected official specification and wiring pages

SIEMENS SIMATIC

6ES7288-3AM03-0AA0

S7-200 SMART EM AM03 ANALOG INPUT/OUTPUT MODULE

The following original Siemens pages contain the model-specific specifications, interface details, and wiring information with original pagination retained.

REFERENCE PACKAGE

SIMATIC S7-200 SMART System Manual V2.8, 08/2023

OFFICIAL DOCUMENT

[A5E03822230-AL](#)

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S7 S7-200 SMART

System Manual

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A.4 Analog inputs and outputs expansion modules (EMs)

Pin	X10 (gold)	X11 (gold)
6	No connection	AQ 1M
7	No connection	AQ 1

Table A-106 Connector pin locations for EM AQ04 Analog 4 x Outputs (6ES7288-3AQ04-0AA0)

Pin	X10 (gold)	X11 (gold)	X12 (gold)	X13 (gold)
1	L+ / 24 V DC	No connection	No connection	No connection
2	M / 24 V DC	No connection	No connection	No connection
3	Functional Earth	No connection	No connection	No connection
4	No connection	No connection	AQ 0M	AQ 2M
5	No connection	No connection	AQ 0	AQ 2
6	No connection	No connection	AQ 1M	AQ 3M
7	No connection	No connection	AQ 1	AQ 3

A.4.3 EM AM03 and EM AM06 analog input/output module specifications

Table A-107 General specifications

Technical data	EM 2 x Analog Inputs / 1 x Analog Outputs (AM03)	EM 4 x Analog Inputs / 2 x Analog Outputs (AM06)
Article number	6ES7288-3AM03-0AA0	6ES7288-3AM06-0AA0
Dimensions W x H x D (mm)	45 x 100 x 81	45 x 100 x 81
Weight	172 grams	173.4 grams
Power dissipation	1.1 W (no load)	2.0 W (no load)
Current consumption (SM Bus)	60 mA	80 mA
Current consumption (24 V DC)	30 mA (no load)	60 mA (no load)
	50 mA (20 mA load per channel)	100 mA (20 mA load per channel)

Table A-108 Analog inputs

Model	EM 2 x Analog Inputs / 1 x Analog Outputs (AM03)	EM 4 x Analog Inputs / 2 x Analog Outputs (AM06)
Number of inputs	2	4
Type	Voltage or current (differential): Selectable in groups of 2	Voltage or current (differential): Selectable in groups of 2
Range	± 10 V, ± 5 V, ± 2.5 V, or 0 to 20 mA	± 10 V, ± 5 V, ± 2.5 V, or 0 to 20 mA
Full scale range (data word)	-27,648 to 27,648	-27,648 to 27,648
Overshoot/undershoot range (data word)	Voltage: 27,649 to 32,511 / -27,649 to -32,512 Current: 27,649 to 32,511 / -4,864 to 0	Voltage: 27,649 to 32,511 / -27,649 to -32,512 Current: 27,649 to 32,511 / -4,864 to 0

A.4 Analog inputs and outputs expansion modules (EMs)

Model	EM 2 x Analog Inputs / 1 x Analog Outputs (AM03)	EM 4 x Analog Inputs / 2 x Analog Outputs (AM06)
Overflow/underflow (data word)	Voltage: 32,512 to 32,767 / -32,513 to -32,768 Current: 32,512 to 32,767 / -4,865 to -32,768	Voltage: 32,512 to 32,767 / -32,513 to -32,768 Current: 32,512 to 32,767 / -4,865 to -32,768
Resolution	Voltage mode: 12 bits + sign Current mode: 12 bits	Voltage mode: 12 bits + sign Current mode: 12 bits
Maximum withstand voltage/current	±35 V / ±40 mA	±35 V / ±40 mA
Smoothing	None, weak, medium, or strong	None, weak, medium, or strong
Noise rejection	400, 60, 50, or 10 Hz	400, 60, 50, or 10 Hz
Input impedance	≥1 M Ω (voltage) / 290 Ω (current)	≥1 M Ω (voltage) / 290 Ω (current)
Isolation (field side to logic)	None	None
Accuracy (25 °C / -20 to 60 °C)	Voltage mode: ±0.1% / ±0.2% of full scale Current mode: ±0.2% / ±0.3% of full scale	Voltage mode: ±0.1% / ±0.2% of full scale Current mode: ±0.2% / ±0.3% of full scale
Analog to digital conversion time	625 μs (400 Hz rejection)	625 μs (400 Hz rejection)
Common mode rejection	40 dB, DC to 60 Hz	40 dB, DC to 60 Hz
Operational signal range	Signal plus common mode voltage must be less than +12 V and greater than -12 V	Signal plus common mode voltage must be less than +12 V and greater than -12 V
Cable length (max.), in meters	100 m twisted and shielded	100 m twisted and shielded

Table A-109 Analog outputs

Technical data	EM 2 x Analog Inputs / 1 x Analog Outputs (AM03)	EM 4 x Analog Inputs / 2 x Analog Outputs (AM06)
Number of outputs	1	2
Type	Voltage or current	Voltage or current
Range	±10 V or 0 to 20 mA	±10 V or 0 to 20 mA
Resolution	Voltage mode: 11 bits + sign Current mode: 11 bits	Voltage mode: 11 bits + sign Current mode: 11 bits
Full scale range (data word)	Voltage: -27,648 to 27,648 Current: 0 to 27,648	Voltage: -27,648 to 27,648 Current: 0 to 27,648
Accuracy (25 °C / -20 to 60 °C)	±0.5% / ±1.0% of full scale	±0.5% / ±1.0% of full scale
Settling time (95% of new value)	Voltage: 300 μs (R), 750 μs (1 μF) Current: 600 μs (1 mH), 2 ms (10 mH)	Voltage: 300 μs (R), 750 μs (1 μF) Current: 600 μs (1 mH), 2 ms (10 mH)
Load impedance	Voltage: ≥ 1000 Ω Current: ≤ 500 Ω	Voltage: ≥ 1000 Ω Current: ≤ 500 Ω
Output behavior in STOP	Last value or substitute value (default value 0)	Last value or substitute value (default value 0)
Isolation (field side to logic)	None	None
Cable length (max.), in meters	100 m twisted and shielded	100 m twisted and shielded

A.4 Analog inputs and outputs expansion modules (EMs)

Table A-111 Wiring diagrams for the EM AM03 2 x Analog Inputs / 1 x Analog Outputs (6ES7288-3AM03-0AA0 and the EM AM06 4 x Analog Inputs / 2 x Analog Outputs (6ES7288-3AM06-0AA0)

EM AM03 2 x Analog Inputs / 1 x Analog Outputs (6ES7288-3AM03-0AA0)	EM AM06 4 x Analog Inputs / 2 x Analog Outputs (6ES7288-3AM06-0AA0)
Note: Connectors must be gold. See Appendix F, Spare parts and other hardware, for article number.	

Table A-112 Connector pin locations for AM03 2 x Analog Inputs / 1 x Analog Outputs (6ES7288-3AM03-0AA0)

Pin	X10 (gold)	X11 (gold)	X12 (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	AI 0+	No connection
5	No connection	AI 0-	No connection
6	No connection	AI 1+	AQ 0M
7	No connection	AI 1-	AQ 0

Table A-113 Connector pin locations for AM06 4 x Analog Inputs / 2 x Analog Outputs (6ES7288-3AM06-0AA0)

Pin	X10 (gold)	X11 (gold)	X12 (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