

Technical specifications (continued)

	6ES7 135-4GB01-0AB0	6ES7 135-4MB02-0AB0	6ES7 135-4GB52-0AB0
Supply voltages			
Load voltage L+			
• Rated value (DC)	24 V; from power module	24 V	24 V
• Reverse polarity protection	Yes	Yes	Yes
Current consumption			
from load voltage L+ (without load), max.	150 mA	80 mA	150 mA; with load
from backplane bus 3.3 V DC, max.	10 mA	10 mA	10 mA
Power losses			
Power loss, max.	2 W	1.2 W	2.4 W; typical
Address area			
Address space per module			
• Address space per module, max.	4 byte	4 byte	4 byte
Isochronous mode			
Isochronous mode		Yes	Yes
Analog outputs			
Number of analog outputs	2	2	2
Cable length, shielded, max.	200 m	200 m; 100m if Twa < 2ms	200 m; max. 20m for TWA 100µs
Current output, no-load voltage, max.	18 V	18 V	18 V
Cycle time (all channels) max.	1.5 ms	0.5 ms	250 µs
Output ranges, current			
• -20 to +20 mA	Yes	Yes	Yes
• 4 to 20 mA	Yes	Yes	Yes
Connection of actuators			
• for current output 2-conductor connection	Yes	Yes	Yes
• for current output 4-conductor connection	No	No	
Load impedance (in rated range of output)			
• with current outputs, max.	500 Ω	500 Ω	500 Ω
• with current outputs, inductive load, max.	1 mH	1 mH	1 mH; for TWA 100µs
Destruction limits against externally applied voltages and currents			
• Voltages at the outputs towards MANA	15 V; max. 15 V permanent; 75 V for max. 1 s (mark to space ratio 1:20)		
• Current, max.	50 mA; DC	50 mA	15 mA; max. 15 V/5 hours (higher voltages not permissible even briefly)
Analog value creation			
Integrations and conversion time/ resolution per channel			
• Resolution with overrange (bit including sign), max.	14 bit; 4 to 20 mA: 13 bit, +/-20 mA: 14 bit	16 bit	16 bit
Settling time			
• for resistive load	0.1 ms	0.3 ms	0.05 ms
• for capacitive load	0.5 ms	1 ms	0.05 ms; at a load of up to 500 Ohm/100 nF and a max. cable length of 20 m
• for inductive load	0.5 ms	0.5 ms	0.05 ms
Ex(i) characteristics			
Max. values of output circuits (per channel)			
• Uo (output no-load voltage), max.	18 V		

SIMATIC ET 200 distributed I/O

ET 200S

I/O modules

Analog electronic modules

Technical specifications (continued)

	6ES7 135-4GB01-0AB0	6ES7 135-4MB02-0AB0	6ES7 135-4GB52-0AB0
Errors/accuracies			
Output ripple (based on output area, bandwidth 0 to 50 kHz)	+/- 0.02 %	+/- 0.02 %	+/- 0.02 %
Linearity error (relative to output area)	+/- 0.02 %	+/- 0.01 %	+/- 0.03 %; with resistive load
Temperature error (relative to output area)	+/- 0.01 %/K	+/- 0.003 %/K	+/- 0.01 %/K
Crosstalk between the outputs, min.		60 dB	-60 dB
Repeat accuracy in settled status at 25 °C (relative to output area)	+/- 0.05 %	+/- 0.01 %	+/- 0.03 %
Operational limit in overall temperature range			
• Current, relative to output area	+/- 0.5 %	+/- 0.1 %	+/- 0.2 %; Specified value applies for loads from 200 to 350 Ohm, deviating operational limits for loads up to 200 Ohm and from 350 to 500 Ohm with up to 0.4%
Basic error limit (operational limit at 25 °C)			
• Current, relative to output area	+/- 0.3 %	+/- 0.05 %	+/- 0.1 %; Specified value applies for loads from 200 to 350 Ohm, deviating basic error limits for loads up to 200 Ohm and from 350 to 500 Ohm with up to 0.3%
Parameter			
Remark	7 byte	7 byte	7 byte
Output type/range	deactivated / +/-20 mA / 4 to 20 mA	deactivated / +/-20 mA / 4 to 20 mA	deactivated / +/-20 mA / 4 to 20 mA
Diagnostics: wire break	Disable / enable	Disable / enable	Disable / enable
Interference frequency suppression		disable / enable	
Group diagnostics	Disable / enable	Disable / enable	Disable / enable
Behavior on CPU/Master STOP	Output current and de-energized/ substitute a value/keep last value	Output current and de-energized/ substitute a value/keep last value	Output current and de-energized/ substitute a value/keep last value
Alarms/diagnostics/status information			
Substitute values connectable	Yes; 0 to 65535 (range of values must be within the rated range)	Yes	Yes
Diagnostics			
• Diagnostic functions			Yes
• Diagnostic information readable		Yes	Yes
• Wire break	Yes	Yes	Yes
• Group error	Yes	Yes	Yes
Diagnostic indication LED			
• Group error SF (red)	Yes	Yes	Yes
Isolation			
Isolation checked with		500 V DC	500 V DC
Galvanic isolation			
Galvanic isolation analog outputs			
• Galvanic isolation analog outputs		Yes	Yes
• between the channels	No	No	No
• between the channels and the backplane bus	Yes	Yes	Yes
• between the channels and the load voltage L+	Yes	Yes	Yes

Technical specifications (continued)

	6ES7 135-4GB01-0AB0	6ES7 135-4MB02-0AB0	6ES7 135-4GB52-0AB0
Permissible potential difference between MANA and M internally (UIISO)	75 V DC / 60 V AC	75 V DC / 60 V AC	75 V DC / 60 V AC
Dimensions and weight			
Dimensions			
• Width	15 mm	15 mm	15 mm
• Height	81 mm	81 mm	81 mm
• Depth	52 mm	52 mm	52 mm
Weight			
• Weight, approx.	40 g	40 g	45 g

Ordering data

Order No.

Order No.

Analog input modules

- Ordering unit 1 unit
- 2 AI U High Speed
- 2 AI U Standard
- 2 AI U High Feature
- 2 AI I Standard 2-wire
- 2 AI I High Speed 2-wire
- 2 AI High Speed 4-wire
- 2 AI I Standard 4-wire
- 2 AI I High Feature 2-wire/4-wire
(15 bit + sign)
- 2 AI RTD standard
- 2 AI TC Standard
- 2 AI RTD High Feature
- 2 AI TC High Feature
- 4 AI Standard 2-wire
- 4 AI TC Standard

6ES7 134-4FB52-0AB0
 6ES7 134-4FB01-0AB0
 6ES7 134-4LB02-0AB0
 6ES7 134-4GB01-0AB0
 6ES7 134-4GB52-0AB0
 6ES7 134-4GB62-0AB0
 6ES7 134-4GB11-0AB0
 6ES7 134-4MB02-0AB0
 6ES7 134-4JB51-0AB0
 6ES7 134-4JB01-0AB0
 6ES7 134-4NB51-0AB0
 6ES7 134-4NB01-0AB0
 6ES7 134-4GD00-0AB0
 6ES7 134-4JD00-0AB0

Analog output modules

- Ordering unit 1 unit
- 2 AO U Standard
- 2 AO U High Speed
- 2 AO U High Feature
- 2 AO I Standard
- 2 AO I High Speed
- 2 AO I High Feature

6ES7 135-4FB01-0AB0
 6ES7 135-4FB52-0AB0
 6ES7 135-4LB02-0AB0
 6ES7 135-4GB01-0AB0
 6ES7 135-4GB52-0AB0
 6ES7 135-4MB02-0AB0

Accessories for labeling

Label sheets DIN A4 (10 units)

Each sheet contains 60 labeling
strips for I/O modules and
20 labeling strips for interface
modules

- petrol
- red
- yellow
- light beige

6ES7 193-4BH00-0AA0
 6ES7 193-4BD00-0AA0
 6ES7 193-4BB00-0AA0
 6ES7 193-4BA00-0AA0

Accessories for system-
integrated shield connection

Shield connection element

Ordering unit 5 units
For plugging into TM-E and TM-P

6ES7 193-4GA00-0AA0

Shield clamps

Ordering unit 5 units
For 3 × 10 mm busbars

6ES7 193-4GB00-0AA0

Grounding terminal

Ordering unit 1 unit
For cable cross-sections up to
25 mm²

8WA2 868

3 × 10 mm busbars

Ordering unit 1 unit

8WA2 842

I: Subject to export regulations AL: N and ECCN: EAR99H

Overview (continued)

SIPLUS analog electronic module 2 AI RTD High Feature	
Order No.	6AG1 134-4NB51-2AB0
Order No. based on	6ES7 134-4NB51-0AB0
Ambient temperature range	-25 ... +60 °C
Ambient conditions	Suitable for exceptional medial exposure (e.g. in sulfur chloride atmosphere).
Technical data	The technical data are identical with those of the based-on modules.

SIPLUS analog electronic module 2 AI TC High Feature	
Order No.	6AG1 134-4NB01-7AB0
Order No. based on	6ES7 134-4NB01-0AB0
Ambient temperature range	0 ... +70 °C
Ambient conditions	Suitable for exceptional medial exposure (e.g. in sulfur chloride atmosphere).
Technical data	The technical data are identical with those of the based-on modules.

SIPLUS analog electronic module 2 AO U Standard	
Order No.	6AG1 135-4FB01-2AB0
Order No. based on	6ES7 135-4FB01-0AB0
Ambient temperature range	-25 ... +60 °C
Ambient conditions	Suitable for exceptional medial exposure (e.g. in sulfur chloride atmosphere).
Technical data	The technical data are identical with those of the based-on modules.

SIPLUS analog electronic module 2 AO U High Feature	
Order No.	6AG1 135-4LB02-7AB0
Order No. based on	6ES7 135-4LB02-0AB0
Ambient temperature range	-25 ... +60 °C
Ambient conditions	Suitable for exceptional medial exposure (e.g. in sulfur chloride atmosphere).

SIPLUS analog electronic module 2 AO U High Feature	
Technical data	The technical data are identical with those of the based-on modules.

SIPLUS analog electronic module 2 AO I Standard	
Order No.	6AG1 135-4GB01-2AB0
Order No. based on	6ES7 135-4GB01-0AB0
Ambient temperature range	-25 ... +70 °C
Ambient conditions	Suitable for exceptional medial exposure (e.g. in sulfur chloride atmosphere).
Technical data	The technical data are identical with those of the based-on modules.

Ambient conditions

Relative humidity	5 ... 100 % Condensation permissible
Biologically active substances	Conformity with EN 60721-3-3, Class 3B2 mold and fungal spores (except fauna)
Chemically active substances	Conformity with EN 60721-3-3, Class 3C4 incl. salt mist and ISA-S71.04 severity level G1; G2; G3; GX ^{1) 2)}
Mechanically active substances	Conformity with EN 60721-3-3, Class 3S4 including conductive sand, dust ²⁾
Air pressure (depending on the highest positive temperature range specified)	1080 ... 795 hPa (-1000 ... +2000 m) see ambient temperature range 795 ... 658 hPa (+2000 ... +3500 m) derating 10 K 658 ... 540 hPa (+3500 ... +5000 m) derating 20 K

¹⁾ ISA-S71.04 severity level GX: Long-term load: SO₂ < 4.8 ppm; H₂S < 9.9 ppm; Cl < 0.2 ppm; HCl < 0.66 ppm; HF < 0.12 ppm; NH < 49 ppm; O₃ < 0.1 ppm; NOX < 5.2 ppm
Limit value (max. 30 min/d): SO₂ < 17.8 ppm; H₂S < 49.7 ppm; Cl < 1.0 ppm; HCl < 3.3 ppm; HF < 2.4 ppm; NH < 247 ppm; O₃ < 1.0 ppm; NOX < 10.4 ppm

²⁾ The supplied plug covers must remain in place over the unused interface when operated in atmospheres containing corrosive gases!

Ordering data

SIPLUS analog input modules

(extended temperature range and medial exposure)

• 2 AI U Standard	L	6AG1 134-4FB01-2AB0
• 2 AI I Standard 2-wire	H	6AG1 134-4GB01-2AB0
• 2 AI I Standard 4-wire	H	6AG1 134-4GB11-2AB0
• 2 AI I High Feature 2-wire/4-wire (15 bit + sign)		6AG1 134-4MB02-2AB0
• 2 AI High Speed 2-wire	H	6AG1 134-4GB52-2AB0
• 4 AI Standard 2-wire	H	6AG1 134-4GD00-2AB0

Order No.

Order No.

• 2 AI RTD Standard	I	6AG1 134-4JB51-7AB0
• 2 AI RTD High Feature	H	6AG1 134-4NB51-2AB0
• 2 AI TC High Feature	I	6AG1 134-4NB01-7AB0

SIPLUS analog output modules

• 2 AO U Standard	H	6AG1 135-4FB01-2AB0
• 2 AO U High Feature	H	6AG1 135-4LB02-7AB0
• 2 AO I Standard	H	6AG1 135-4GB01-2AB0

Accessories

See SIMATIC ET 200S analog electronic modules, page 9/91

H: Subject to export regulations AL: 91999 and ECCN: EAR99H

I: Subject to export regulations AL: N and ECCN: EAR99H

L: Subject to export regulations AL: 91999 and ECCN: N