

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS

6ES7134-7SD50-0AB0

FOUR-CHANNEL RTD INPUT MODULE

Used with the applicable SIMATIC ET 200iSP configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Siemens IK PI 2007: ET 200iSP analog electronic modules

Overview



- The electronic modules are plugged into the associated terminal modules that must be ordered separately (with screw-type or spring-loaded terminals).
- When plugged in, the modules are automatically uniquely coded mechanically.
- Modules can be replaced under potentially explosive conditions during runtime.

Technical specifications

	6ES7 134-7SD00-0AB0	6ES7 134-7SD50-0AB0	6ES7 134-7TD00-0AB0	6ES7 134-7TD50-0AB0
Voltages and currents				
Voltage supply to the transducers				
• short-circuit proof			Yes	
• Feed current, max.			23 mA; per channel	
Current consumption				
from supply voltage L+, max.	30 mA	22 mA	320 mA	30 mA
Power loss, typ.	0.4 W	0.4 W	2.7 W	0.4 W
Analog inputs				
Number of analog inputs	4	4	4	4
cable length, shielded, max.	50 m	200 m	200 m	200 m
permissible input current for current input (destruction limit), max.			90 mA	50 mA
technical unit for temperature measurement, adjustable	Yes	Yes	Yes	Yes
Input ranges (rated values), voltages				
• Voltage	Yes			
• -80 mV to +80 mV	Yes			
• Input resistance (-80 mV to +80 mV)	1,000 kΩ			
Input ranges (rated values), currents				
• Current			Yes	Yes
• 4 to 20 mA			Yes	Yes; min. 295 ohms

ET 200 distributed I/Os

ET 200iSP

ET 200iSP analog electronic modules and terminal modules

Technical specifications (continued)

	6ES7 134-7SD00-0AB0	6ES7 134-7SD50-0AB0	6ES7 134-7TD00-0AB0	6ES7 134-7TD50-0AB0
Input ranges (rated values), thermoelements				
• thermocouple	Yes			
• Type B	Yes			
• Input resistance (Type B)	1,000 k Ω			
• Type C	Yes			
• Input resistance (Type C)	1,000 k Ω			
• Type E	Yes			
• Input resistance (Type E)	1,000 k Ω			
• Type J	Yes			
• Input resistance (type J)	1,000 k Ω			
• Type K	Yes			
• Input resistance (Type K)	1,000 k Ω			
• Type L	Yes			
• Input resistance (Type L)	1,000 k Ω			
• Type N	Yes			
• Input resistance (Type N)	1,000 k Ω			
• Type R	Yes			
• Input resistance (Type R)	1,000 k Ω			
• Type S	Yes			
• Input resistance (Type S)	1,000 k Ω			
• Type T	Yes			
• Input resistance (Type T)	1,000 k Ω			
• Type U	Yes			
• Input resistance (Type U)	1,000 k Ω			
Input ranges (rated values), resistors				
• Impedance		Yes		
• Input resistance (0 to 600 Ohm)		0.6 k Ω		
Input ranges (rated values), resistance thermometers				
• Resistance thermometer		Yes		
• Ni 100		Yes		
• Input resistance (Ni 100)		2,000 k Ω		
• Pt 100		Yes		
• Input resistance (Pt 100)		2,000 k Ω		
Characteristic linearization				
• programmable	Yes	Yes		
• for thermoelements	Yes			
• for thermoresistor		Yes		
Temperature compensation				
• external temperature compensation with compensations socket	Yes; via temperature value, acquired by an analog module of the same ET 200iSP-station			
• internal temperature compensation	Yes; via supplied TC sensor module			
Analog value creation				
Measurement principle	integrating (Sigma-Delta)	integrating (Sigma-Delta)	integrating (Sigma-Delta)	integrating (Sigma-Delta)
Integrations and conversion time/resolution per channel				
• Resolution with overload area (bit including sign), max.	16 Bit	16 Bit	13 Bit	12 Bit; + sign
• Integration time, parameterizable	Yes	Yes	No	Yes
• Basic conversion time, including integration time, ms	80 ms at 50 Hz; 66 ms at 60 Hz	80 ms at 50 Hz; 66 ms at 60 Hz		30
• additional conversion time for wire break monitoring	5	5		
• Interference voltage suppression for interference frequency f1 in Hz	50 Hz and 60 Hz	50 and 60 Hz	50 and 60 Hz	50 and 60 Hz

Technical specifications (continued)

	6ES7 134-7SD00-0AB0	6ES7 134-7SD50-0AB0	6ES7 134-7TD00-0AB0	6ES7 134-7TD50-0AB0
Smoothing of measured values				
• parameterizable	Yes; in 4 stages	Yes; in 4 stages	Yes; in 4 stages	Yes; in 4 stages
• Level: none	Yes; 1 x cycle time	Yes; 1 x cycle time	Yes; 1 x cycle time	Yes; 1 x cycle time
• Level: weak	Yes; 4x cycle time	Yes; 4 x cycle time	Yes; 4x cycle time	Yes; 4x cycle time
• Level: middle	Yes; 32 x cycle time	Yes; 32 x cycle time	Yes; 32 x cycle time	Yes; 32 x cycle time
• Level: strong	Yes; 64 x cycle time	Yes; 64 x cycle time	Yes; 64 x cycle time	Yes; 64 x cycle time
Encoder				
Connection of signal encoders				
• for current measurement as 2-wire transducer			Yes	
• for current measurement as 4-wire transducer				Yes
• for resistance measurement with 2-conductor connection		Yes		
• for resistance measurement with 3-conductor connection		Yes		
• for resistance measurement with 4-conductor connection		Yes		
• Burden of 2-wire transmitter, max.			750 Ω	
Errors/accuracies				
Linearity error (relative to input area)	+/- 0.015 %	+/- 0.015 %	+/- 0.015 %	+/- 0.015 %
Temperature error (relative to input areas)	+/- 0.02 %	+/- 0.02 %	+/- 0.005 %/K	+/- 0.005 %/K
Crosstalk between the inputs, min.	-50 dB	-50 dB	-50 dB	-50 dB
Repeat accuracy in settled status at 25 °C (relative to input area)	+/- 0.01 %	+/- 0.01 %	+/- 0.01 %	+/- 0.01 %
Operational limit in overall temperature range				
• Voltage, relative to input area	+/- 0.15 %		+/- 0.15 %	+/- 0.15 %
• Current, relative to input area				
• Resistance-type thermometer, relative to input area		+/- 0.15 %		
Basic error limit (operational limit at 25 °C)				
• Voltage, relative to input area	+/- 0.1 %		+/- 0.1 %	+/- 0.1 %
• Current, relative to input area				
• Resistance-type thermometer, relative to input area		+/- 0.1 %		
Interference voltage suppression for $f = n \times (f_l \pm 1 \%)$, f_l = interference frequency				
• Series mode interference (peak value of interference < rated value of input range), min.	70 dB	70 dB	70 dB	70 dB
• common mode voltage, min.	90 dB	90 dB		
Status information/alarms/diagnostics				
Alarms				
• Diagnostic alarm	Yes; parameterizable	Yes; parameterizable	Yes; parameterizable	Yes; parameterizable
• Limit value alarm	Yes; parameterizable	Yes; parameterizable	Yes; parameterizable	Yes; parameterizable
Diagnoses				
• Diagnostic information readable	Yes	Yes	Yes	Yes
• Wire break		Yes	Yes	Yes
• Short circuit			Yes	
Diagnostics indication LED				
• Collective error SF (red)	Yes	Yes	Yes	Yes

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ET 200iSP analog electronic modules and terminal modules

Technical specifications (continued)

	6ES7 134-7SD00-0AB0	6ES7 134-7SD50-0AB0	6ES7 134-7TD00-0AB0	6ES7 134-7TD50-0AB0
Isolation				
Isolation, analog inputs				
• between the channels	Yes; functional	Yes	No	No
• between the channels and the backplane bus	Yes	Yes	Yes	Yes
Standards, approvals, certificates				
CE symbol	Yes	Yes	Yes	Yes
Type of protection to EN 50020 (CENELEC)	II2 G (1) GD EEx ib[ia] IIC T4	II2 G (1) GD EEx ib[ia] IIC T4	II2 G (1) GD EEx ib[ia] IIC T4	II2 G (1) GD EEx ib[ia] IIC T4
Type of protection to KEMA	04 ATEX 1246	04 ATEX 1247	04 ATEX 1244	04 ATEX 1245
Dimensions and weight				
Width	30 mm	30 mm	30 mm	30 mm
Height	129 mm	129 mm	129 mm	129 mm
Depth	136.5 mm	136.5 mm	136.5 mm	136.5 mm
Weights				
Weight, approx.	230 g	230 g	230 g	230 g

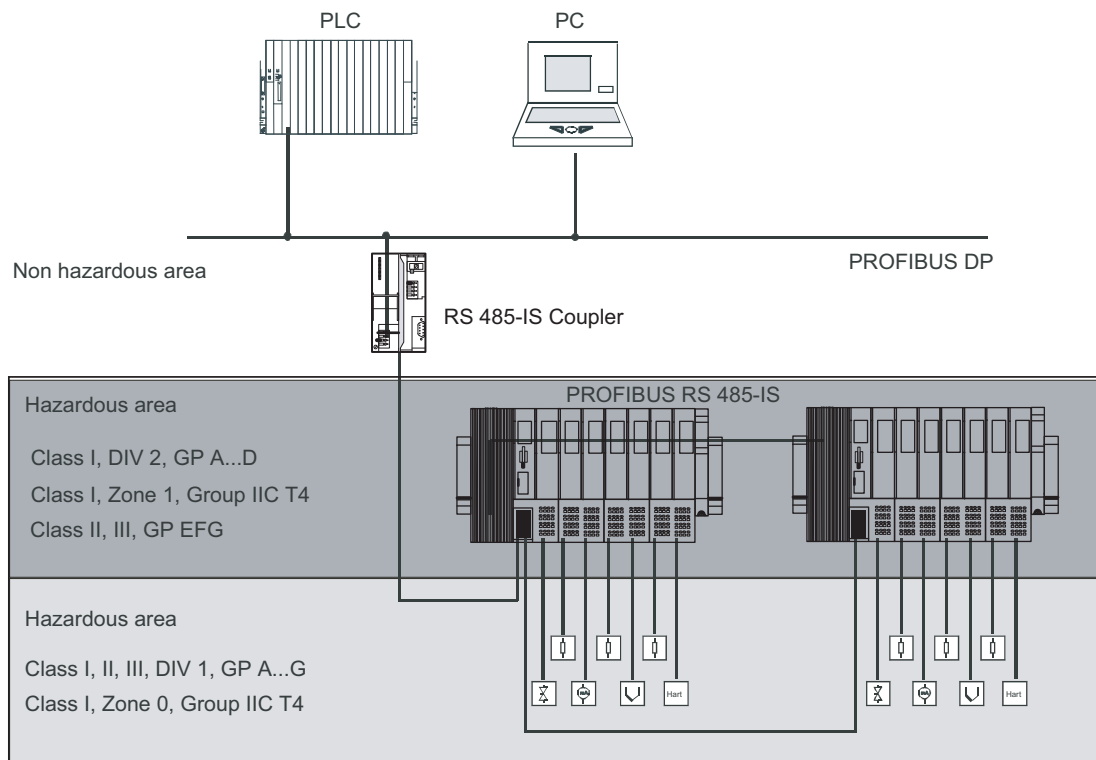
	6ES7 135-7TD00-0AB0
Current consumption	
from load voltage 1L+, max.	330 mA
Power loss, max.	2.7 W
Analog outputs	
Number of analog outputs	4
cable length, shielded, max.	200 m
• 4 to 20 mA	Yes
• for current output 2-conductor connection	Yes
• with current outputs, max.	750 Ω
Analog value creation	
Integrations and conversion time/resolution per channel	
• Resolution with overload area (bit including sign), max.	14 Bit
• for resistive load	4 ms
• for capacitive load	40 ms
• for inductive load	40 ms
Errors/accuracies	
Linearity error (relative to output area)	+/- 0.015 %
Temperature error (relative to output area)	+/- 0.005 %/K
Crosstalk between the outputs, min.	-50 dB
Repeat accuracy in settled status at 25 °C (relative to output area)	+/- 0.01 %
Operational limit in overall temperature range	
• Current, relative to output area	+/- 0.15 %
Basic error limit (operational limit at 25 °C)	
• Current, relative to output area	+/- 0.1 %

	6ES7 135-7TD00-0AB0
Status information/alarms/diagnostics	
Substitute values connectable	Yes
Alarms	
• Diagnostic alarm	Yes
Diagnoses	
• Diagnostic information readable	Yes
• Wire break	Yes
• Short circuit	Yes
Diagnostics indication LED	
• Collective error SF (red)	Yes
Isolation	
• between the channels	No
• between the channels and the backplane bus	Yes
Standards, approvals, certificates	
Type of protection to KEMA	04 ATEX 1250
Dimensions and weight	
Width	30 mm
Height	129 mm
Depth	136.5 mm
Weights	
Weight, approx.	265 g

	6ES7 193-7CA00-0AA0	6ES7 193-7CA10-0AA0
Standards, approvals, certificates		
CE symbol	No	No
Type of protection to EN 50020 (CENELEC)	no	no
Test number KEMA	04 ATEX 2242	04 ATEX 2242
Dimensions and weight		
Width	60 mm	60 mm
Height	190 mm	190 mm
Depth	52 mm	52 mm
Weights		
Weight, approx.	275 g	275 g

Ordering data	Order No.		Order No.
Analog input modules		Accessories (continued) Stainless steel housing IP66 for hazardous Zone 1 with safety class EEx e Empty housing with no modules installed, for use in gaseous atmospheres, IP65 (IP54 if a breather gland is used) • Wall housing 650 x 450 x 230 for the installation of up to 15 ET 200iSP modules, for use in gaseous atmospheres, with 3 rows of cable glands M16 (41 pieces) and 2 rows of cover plugs • Wall housing 650 x 450 x 230 for the installation of up to 15 ET 200iSP modules for use in gaseous atmospheres with 5 rows of cable glands M16 (66 pieces) • Wall housing 950 x 450 x 230 for the installation of up to 25 ET 200iSP modules, for use in gaseous atmospheres, with 3 rows of cable glands M16 (68 pieces) and 2 rows of cover plugs • Wall housing 950 x 450 x 230 for the installation of up to 25 ET 200iSP modules for use in gaseous atmospheres with 5 rows of cable glands M16 (111 pieces) Empty housing with no modules installed, for use in dusty atmospheres, IP65 • Wall housing 650 x 450 x 230 for the installation of up to 15 ET 200iSP modules, for use in dusty atmospheres, with 3 rows of cable glands M16 (41 pieces) and 2 rows of cover plugs • Wall housing 650 x 450 x 230 for the installation of up to 15 ET 200iSP modules for use in dusty atmospheres with 5 rows of cable glands M16 (66 pieces) • Wall housing 950 x 450 x 230 for the installation of up to 25 ET 200iSP modules, for use in dusty atmospheres, with 3 rows of cable glands M16 (68 pieces) and 2 rows of cover plugs • Wall housing 950 x 450 x 230 for the installation of up to 25 ET 200iSP modules for use in dusty atmospheres with 5 rows of cable glands M16 (111 pieces)	
4 AI I 2WIRE HART	6ES7 134-7TD00-0AB0		
4 AI I 4WIRE HART	6ES7 134-7TD50-0AB0		
4 AI RTD	6ES7 134-7SD50-0AB0		
4 AI TC	6ES7 134-7SD00-0AB0		
Analog output modules			
4 AO I HART	6ES7 135-7TD00-0AB0		
Terminal modules			
TM-EM/EM60S Terminal module E60S (screw-type terminals)	6ES7 193-7CA00-0AA0		
TM-EM/EM60C Terminal module E60C (spring-loaded terminals)	6ES7 193-7CA10-0AA0		
Accessories			
ET 200iSP product manual • German • English	6ES7 152-1AA00-8AA0 6ES7 152-1AA00-8BA0		
Plug connector PROFIBUS connector with active terminating resistor For RS 485-IS circuit; 1.5 Mbit/s	6ES7 972-0DA60-0XA0		
RS 485-IS segment Isolating transition for coupling PROFIBUS DP to PROFIBUS RS 485-IS	6ES7 972-0AC80-0XA0		
Sheet of labels DIN A4, perforated, consisting of 10 sheets each with 30 labels for electronic modules and 20 labels for IM 151 • petrol • red • yellow • light beige	6ES7 193-7BH00-0AA0 6ES7 193-7BD00-0AA0 6ES7 193-7BB00-0AA0 6ES7 193-7BA00-0AA0		
Identification labels, inscribed Order quantity 1 set of 200 of each color for slot numbering • 10 x slot 1 to 2 • 5 x slot 1 to 40	8WA8 861-0AB 8WA8 861-0AC		
Identification labels, blank Order quantity 1 set of 200 of each color for slot numbering	8WA8 848-2AY		
Standard rails S7-300 Standard rail 585 mm Standard rail 885 mm	6ES7 390-1AF85-0AA0 6ES7 390-1AJ85-0AA0		

"No revision to drawing without prior Approval by FM Approvals!"



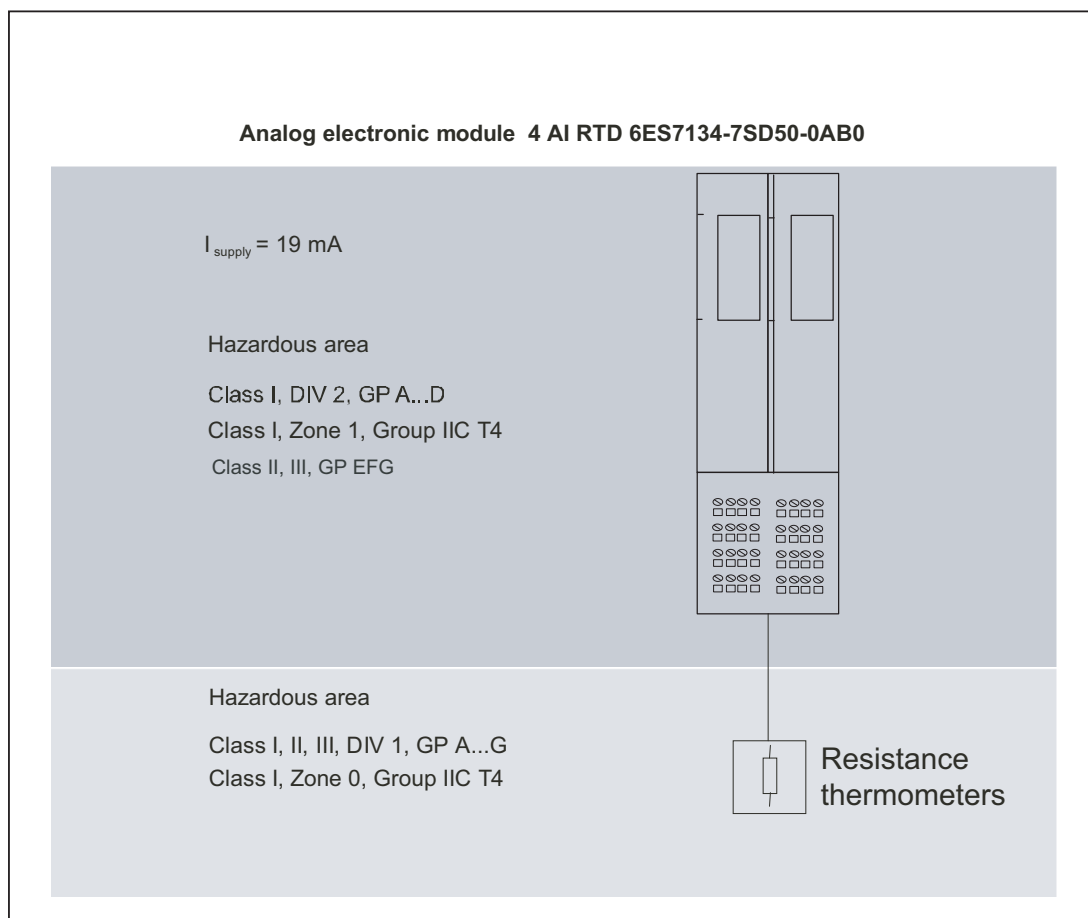
The complete interface system ET 200iSP with its components is represented in the Control Drawing.

You can find the pin configuration in the manuals "Distributed I/O ET 200iSP" or "ET 200iSP Distributed I/O Device - Fail-safe Modules".

ET 200iSP

6ES7134-7SD50-0AB0

6ES7134-7SD51-0AB0



You can find the pin configuration in the manual „Distributed I/O System Type ET 200iSP“, chapter 13.4. Also see notes under „system in total“.

Use with TM-IM/EM P/N 6ES7193-7AA*0-0AA0 or TM-EM/EM P/N 6ES7193-7CA*0-0AA0.

The following parameters for the input circuits are applicable for the electronic module:

	4 inputs //	
$U_o, V_{oc} [V_{dc}]$	5.9	
$I_o, I_{sc} [mA]$	24	
$P_o [mW]$	36	
	A,B/IIC	C-G/IIB
$C_o, C_a [\mu F]$	43	1000
$L_o, L_a [mH]$	50	200