

I/O systems

ET 200 systems for the control cabinet

ET 200S - I/O modules

Digital electronic modules

Overview



- 2, 4 and 8-channel digital inputs and outputs for the ET 200S
- Can be plugged onto TM-E terminal modules with automatic coding.
- High-feature versions for enhanced plant availability, additional functions and comprehensive diagnostics
- Hot swapping of modules possible

Technical specifications

Article number	6ES7131-4BB01-0AA0	6ES7131-4BB01-0AB0	6ES7131-4BD01-0AA0	6ES7131-4BD01-0AB0	6ES7131-4BD51-0AA0	6ES7131-4BF00-0AA0
	ET200S, EL-MOD., 2DI ST, DC 24V, 5PCS.	ET200S, EL-MOD., 2DI HF, DC 24V, 5PCS.	ET200S, EL-MOD., 4DI ST., DC 24V, 5PCS.	ET200S, EL-MOD., 4DI HF, DC 24V, 5PC.	ET200S, EL-MOD., 4DI HF, DC 24V, 5PCS.	ET200S, ELEKTRONIC MODULE, 8DI DC 24V
Product type designation						
Supply voltage						
Rated value (DC)						
• 24 V DC	Yes; From power module	Yes; From power module	Yes; From power module	Yes; From power module	Yes; From power module	Yes
permissible range, lower limit (DC)	20.4 V	20.4 V	20.4 V	20.4 V	20.4 V	20.4 V
permissible range, upper limit (DC)	28.8 V	28.8 V	28.8 V	28.8 V	28.8 V	28.8 V
Reverse polarity protection	Yes	Yes	Yes	Yes	Yes	Yes
Input current						
from backplane bus 3.3 V DC, max.	10 mA	10 mA	10 mA	10 mA		10 mA
from supply voltage L+, max.	Dependent on encoder	Dependent on encoder	Dependent on encoder	Dependent on encoder	Dependent on encoder	Dependent on encoder
Encoder supply						
Number of outputs						0; no encoder supply
Type of output voltage	min. L+ (-0.5 V), under load	min. L+ (-0.5 V), under load	min. L+ (-0.5 V), under load	min. L+ (-0.5 V), under load	max. M +0.5 V, under load	
short-circuit protection		Yes; Electronic		Yes; Electronic		
Output current						
• nominal	500 mA	500 mA	500 mA	500 mA	500 mA	
Power losses						
Power loss, typ.	0.4 W	0.4 W	0.7 W	0.7 W	0.7 W	1.2 W
Address space per module						
• with packing	2 bit	2 bit	4 bit	4 bit	4 bit	
• without packing	1 byte	1 byte	1 byte	1 byte	1 byte	1 byte

Technical specifications (continued)

Article number	6ES7131-4BB01-0AA0 ET200S, EL-MOD., 2DI ST, DC 24V, 5PCS.	6ES7131-4BB01-0AB0 ET200S, EL-MOD., 2DI HF, DC 24V, 5PCS.	6ES7131-4BD01-0AA0 ET200S, EL-MOD., 4DI ST., DC 24V, 5PCS.	6ES7131-4BD01-0AB0 ET200S, EL-MOD., 4DI HF, DC 24V, 5PCS.	6ES7131-4BD51-0AA0 ET200S, EL-MOD., 4DI HF, DC 24V, 5PCS.	6ES7131-4BF00-0AA0 ET200S, ELEKTRONIC MODULE, 8DI DC 24V
Digital inputs						
Number of digital inputs	2	2	4	4	4	8
Input characteristic curve in accordance with IEC 61131, type 1	Yes	Yes	Yes	Yes	Yes	Yes; 2-wire sensors connectable
Number of simultaneously controllable inputs						
• Number of simultaneously controllable inputs						8
Input voltage						
• Type of input voltage	DC	DC	DC	DC	DC	DC
• Rated value (DC)	24 V	24 V	24 V	24 V	24 V	24 V
• for signal "0"	-30 to +5V	-30 to +5V	-30 to +5V	-30 to +5V	-5 to +30V	-30 to +5V
• for signal "1"		+11 to +30V		+11 to +30V	-15 to -30 V	
Input current						
• for signal "1", typ.	7 mA; at 24 V	8 mA	7 mA; at 24 V	8 mA	7 mA; at 24 V	5 mA
Input delay (for rated value of input voltage) for standard inputs						
- Parameterizable	No	Yes; 0.1 / 0.5 / 3 / 15 ms	No	Yes; 0.1 / 0.5 / 3 / 15 ms	No	No
- at "0" to "1", min.	2 ms; typically 3 ms	0.05 / 0.4 / 2.7 / 14.85	2 ms; typically 3 ms	0.05 / 0.4 / 2.7 / 14.85	2 ms; typically 3 ms	2 ms
- at "0" to "1", max.	4.5 ms	0.15 / 0.6 / 3.3 / 15,15	4.5 ms	0.15 / 0.6 / 3.3 / 15,15	4.5 ms	4.5 ms
- at "1" to "0", min.	2 ms; typically 3 ms	0.05 / 0.4 / 2.7 / 14.85	2 ms; typically 3 ms	0.05 / 0.4 / 2.7 / 14.85	2 ms; typically 3 ms	2 ms
- at "1" to "0", max.	4.5 ms	0.15 / 0.6 / 3.3 / 15,15	4.5 ms	0.15 / 0.6 / 3.3 / 15,15	4.5 ms	4.5 ms
Cable length						
• shielded, max.	1 000 m	1 000 m	1 000 m	1 000 m	1 000 m	1 000 m
• Unshielded, max.	600 m	600 m	600 m	600 m	600 m	600 m
Encoder						
Connectable encoders						
• 2-wire sensor	Yes	Yes	Yes	Yes	Yes	Yes
- Permissible quiescent current (2-wire sensor), max.	1.5 mA	1.5 mA	1.5 mA	1.5 mA	1.5 mA	1.5 mA
Isochronous mode						
Isochronous operation (application synchronized up to terminal)						Yes; TWE = 3000 us
Diagnostic messages						
• Diagnostic functions	No	Yes	No	Yes	No	No
• Short circuit		Yes; Short-circuit of outputs to ground; module by module		Yes; Short-circuit of outputs to ground; module by module		
Diagnostics indication LED						
• Group error SF (red)	No	Yes	No	Yes	No	
• Status indicator digital input (green)	Yes; per channel	Yes; per channel	Yes; per channel	Yes; per channel	Yes; per channel	Yes
Parameter						
Remark	1 byte	3 byte	1 byte	3 byte	1 byte	3-byte parameter (not accessible for the user)
Diagnosis: short circuit		Disable / enable		Disable / enable		

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Galvanic isolation						
Galvanic isolation digital inputs						
• between the channels	No	No	No	No	No	No
• between the channels and the backplane bus	Yes	Yes	Yes	Yes	Yes	Yes
Permissible potential difference						
between different circuits	75V DC/60V AC	75V DC/60V AC	75V DC/60V AC	75V DC/60V AC	75V DC/60V AC	75V DC/60V AC
Isolation						
Isolation checked with	500 V DC	500 V DC	500 V DC	500 V DC	500 V DC	500 V DC
Dimensions						
Width	15 mm	15 mm	15 mm	15 mm	15 mm	15 mm
Height	81 mm	81 mm	81 mm	81 mm	81 mm	81 mm
Depth	52 mm	52 mm	52 mm	52 mm	52 mm	52 mm
Weights						
Weight, approx.	35 g	35 g	35 g	35 g	35 g	35 g

Article number	6ES7131-4CD02-0AB0 ET200S, EL-MOD., 4DI, UC 24-48V, 5 PCS	6ES7131-4EB00-0AB0 ET200S, EL-MOD., 2DI, AC 120V, 5PCS.	6ES7131-4FB00-0AB0 ET200S, EL-MOD., 2DI, AC 230V, 5PCS.	6ES7131-4RD02-0AB0 ET200S, EL-MOD., 4DI DC 24V NAMUR	6ES7131-4BF50-0AA0 ET200S, 8DI SOURCE OUTPUT DC24V
Product type designation					
Supply voltage					
Rated value (DC)					
• 24 V DC				Yes	Yes; From power module
permissible range, lower limit (DC)				20.4 V	20.4 V
permissible range, upper limit (DC)				28.8 V	28.8 V
Rated value (AC)					
• 120 V AC		Yes; From power module			
• 230 V AC			Yes		
Reverse polarity protection					Yes
Input current					
from backplane bus 3.3 V DC, max.		6 mA	6 mA		Dependent on encoder
from supply voltage L+, max.					
from supply voltage L1, max.		Dependent on encoder	Dependent on encoder		
Encoder supply					
Number of outputs				1	
Type of output voltage				min. 8.2 V, loaded	
short-circuit protection				Yes; Electronic	
Output current					
• nominal				45 mA	
Power losses					
Power loss, typ.		0.5 W	0.7 W	1.6 W	1.2 W
Address space per module					
• with packing		2 bit	2 bit	4 bit	
• without packing		1 byte	1 byte	1 byte	

Ordering data	Article No.	Article No.
Digital input modules		
Ordering unit 5 items		
• 2 DI 24 V DC Standard	6ES7131-4BB01-0AA0	
• 2 DI 24 V DC High Feature	6ES7131-4BB01-0AB0	
• 4 DI 24 V DC Standard	6ES7131-4BD01-0AA0	
• 4 DI 24 V DC High Feature	6ES7131-4BD01-0AB0	
• 2 DI 120 V AC	6ES7131-4EB00-0AB0	
• 2 DI 230 V AC	6ES7131-4FB00-0AB0	
• 4 DI 24 to 48 V UC	6ES7131-4CD02-0AB0	
• 4 DI 24 V DC SOURCE INPUT	6ES7131-4BD51-0AA0	
Ordering unit 1 item		
• 4 DI 24 V DC NAMUR	6ES7131-4RD02-0AB0	
• 8 DI 24 V DC Standard	6ES7131-4BF00-0AA0	
• 8 DI, 24 V DC, Standard SOURCE INPUT	6ES7131-4BF50-0AA0	
Ordering unit 100 items		
• 8 DI 24 V DC Standard	6ES7131-4BF00-4AA0	
Digital output modules		
Ordering unit 5 items		
• 2 DO 24 V DC/0.5 A Standard	6ES7132-4BB01-0AA0	
• 2 DO 24 V DC/0.5 A High Feature	6ES7132-4BB01-0AB0	
• 2 DO 24 V DC/2 A Standard	6ES7132-4BB31-0AA0	
• 2 DO 24 V DC/2 A High Feature	6ES7132-4BB31-0AB0	
• 4 DO 24 V DC/0.5 A Standard	6ES7132-4BD02-0AA0	
• 4 DO, 24 V DC/0.5 A, Standard SOURCE OUTPUT	6ES7132-4BD50-0AA0	
• 4 DO 24 V DC/0.5 A High Feature	6ES7132-4BD00-0AB0	
• 8 DO 24 V DC/0.5 A High Feature	6ES7132-4BF00-0AB0	
• 4 DO 24 V DC/2 A Standard	6ES7132-4BD32-0AA0	
• 4 DO 24 V DC/2 A High Feature	6ES7132-4BD30-0AB0	
• 2 DO 24 to 230 V AC/2 A	6ES7132-4FB01-0AB0	
• 2 DO 24 V DC to 230 V AC/5 A relay, NO contact	6ES7132-4HB01-0AB0	
• 2 DO 24...48 V DC/5 A, 24...230 V AC/5 A relay, changeover contact	6ES7132-4HB12-0AB0	
Ordering unit 1 item		
• 2 DO 24...48 V DC/5 A, 24...230 V AC/5 A relay, changeover contact, with manual operation	6ES7132-4HB50-0AB0	
• 8 DO 24 V DC/0.5 A Standard	6ES7132-4BF00-0AA0	
• 8 DO, 24 V DC/0.5 A, Standard SINK OUTPUT	6ES7132-4BF50-0AA0	
Ordering unit 100 items		
• 8 DO 24 V DC/0.5 A Standard	6ES7132-4BF00-4AA0	
Accessories		
Label sheets DIN A4 (10 pieces)		
Each sheet contains 60 labeling strips for I/O modules and 20 labeling strips for interface modules		
• petrol	6ES7193-4BH00-0AA0	
• red	6ES7193-4BD00-0AA0	
• yellow	6ES7193-4BB00-0AA0	
• light beige	6ES7193-4BA00-0AA0	

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SIPLUS digital electronic modules

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- Hot swapping of modules possible

Note:

SIPLUS extreme products are based on SIMATIC standard products. The contents listed here were taken from the respective standard products. SIPLUS extreme-specific information was added.

For further technical documentation on SIPLUS, see:

<http://www.siemens.com/siplus-extreme>

Technical specifications

Article number	6AG1131-4BD01-2AA0	6AG1131-4BD01-7AB0	6AG1131-4BF00-7AA0	6AG1131-4BF50-7AA0
Based on	6ES7131-4BD01-0AA0 SIPLUS DP 4DI ET200S	6ES7131-4BD01-0AB0 SIPLUS ET200S EM 4 DI HIGH FEATURES	6ES7131-4BF00-0AA0 SIPLUS ET200S EM 8 DI	6ES7131-4BF50-0AA0 SIPLUS ET200S EM 8 DI DC24V
Ambient conditions				
Ambient temperature in operation				
• Min.	-25 °C; = Tmin	-25 °C; = Tmin	-25 °C; = Tmin	-40 °C; = Tmin
• max.	60 °C; = Tmax	70 °C; = Tmax	70 °C; = Tmax	70 °C; = Tmax
Extended ambient conditions				
• Relative to ambient temperature-atmospheric pressure-installation altitude	Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m) // Tmin ... (Tmax - 10K) at 795 hPa ... 658 hPa (+2000 m ... +3500 m) // Tmin ... (Tmax - 20K) at 658 hPa ... 540 hPa (+3500 m ... +5000 m)	Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m) // Tmin ... (Tmax - 10K) at 795 hPa ... 658 hPa (+2000 m ... +3500 m) // Tmin ... (Tmax - 20K) at 658 hPa ... 540 hPa (+3500 m ... +5000 m)		Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m) // Tmin ... (Tmax - 10K) at 795 hPa ... 658 hPa (+2000 m ... +3500 m) // Tmin ... (Tmax - 20K) at 658 hPa ... 540 hPa (+3500 m ... +5000 m)
Relative humidity				
- With condensation, max.	100 %; Relative humidity, incl. condensation / frost permitted (no commissioning under condensation conditions)	100 %; Relative humidity, incl. condensation / frost permitted (no commissioning under condensation conditions)	100 %; incl. condensation / frost permitted (no commissioning under condensation conditions)	100 %; Relative humidity, incl. condensation / frost permitted (no commissioning under condensation conditions)
Resistance				
- against biologically active substances / conformity with EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation in corrosive atmospheres!	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!
- against chemically active substances / conformity with EN 60721-3-3	Yes; Class 3C4 incl. salt spray. The supplied connector covers must remain on the unused interfaces during operation!	Yes; Class 3C4 incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!	Yes; Class 3C4 incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!	Yes; Class 3C4 incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!
- against mechanically active substances / conformity with EN 60721-3-3	Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!	Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!	Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!	Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!