

SIMATIC ET 200 distributed I/O

ET 200SP

Interface modules without CPU
IM 155-6

Ordering data	Article No.	Article No.
Interface module Standard - IM 155-6PN ST, with server module and installed BusAdapter BA 2xRJ45 - IM 155-6PN ST, with server module, without BusAdapter	6ES7155-6AA00-0BN0 6ES7155-6AU00-0BN0	6ES7132-6HD00-0BB0 6ES7132-6GD50-0BA0
Interface module High Feature - IM 155-6DP HF, with server module, with multi-hot-swap, incl. PROFIBUS connector - IM 155-6PN HF, incl. server module, without BusAdapter	6ES7155-6BA00-0CN0 6ES7155-6AU00-0CN0	6ES7136-6DB00-0CA0 6ES7136-6RA00-0BF0
Accessories		
Digital input modules Digital input module DI 8x24 V DC Standard, BU type A0, color code CC01 Digital input module DI 16x24 V DC Standard, BU type A0, color code CC00 Digital input module DI 8x24 V DC High Feature, BU type A0, color code CC01, channel-specific diagnostics, isochronous mode, shared input (MSI) Digital input module DI 8x24 V DC Source Input, Basic, BU type A0, color code CC02 Digital input module DI 8xNAMUR High Feature, BU type A0, color code CC01 Digital input module DI 4x120 V AC-230 V AC Standard, BU type B1, color code CC41 Fail-safe digital input module F-DI 8x24 V DC High Feature, BU type A0, color code CC01, SIL3/Cat.4/PLe	6ES7131-6BF00-0BA0 6ES7131-6BH00-0BA0 6ES7131-6BF00-0CA0 6ES7131-6BF60-0AA0 6ES7131-6TF00-0CA0 6ES7131-6FD00-0BB1 6ES7136-6BA00-0CA0	6ES7132-6HD00-0BA1 6ES7134-6GD00-0BA1 6ES7134-6JD00-0CA1 6ES7134-6HB00-0DA1 6ES7134-6JF00-0CA1 6ES7134-6HB00-0CA1 6ES7134-6PA00-0BD0
Digital output modules Digital output module DQ 4x24 V DC/2 A Standard, BU type A0, color code CC02 Digital output module DQ 4x24 V DC/2 A High Feature, BU type A0, color code CC02, channel-precise diagnostics, isochronous mode, shared output (MSO) Digital output module DQ 4x24 V AC-230 V AC/2 A Standard for BU type B1, color code CC41 Digital output module DQ 8x24 V DC/0.5 A Standard, BU type A0, color code CC02 Digital output module DQ 8x24 V DC/0.5 A High Feature, BU type A0, color code CC02 Digital output module DQ 8x24 V DC/0.5 A Sink output, Basic, BU type A0, color code CC01 Digital output module DQ 16x24 V DC/0.5 A Standard, BU type A0, color code CC00	6ES7132-6BD20-0BA0 6ES7132-6BD20-0CA0 6ES7132-6FD00-0BB1 6ES7132-6BF00-0BA0 6ES7132-6BF00-0CA0 6ES7132-6BF60-0AA0 6ES7132-6BH00-0BA0	6ES7132-6HD00-0BA1 6ES7135-6HB00-0DA1 6ES7135-6HB00-0CA1
	Relay module RQ NO 4x120 V DC - 230 V AC/5 A Standard, normally-open, BU type B0, color code CC00 Signal relay module RQ CO 4x24 V UC/2 A Standard, changeover contact, BU type A0, color code CC00 Fail-safe digital output module F-DQ 4x24 V DC High Feature, BU type A0, color code CC01, SIL3/Cat.4/PLe Fail-safe digital F output module relay 1 F-RQ, BU type F0, relay output (2 NO contacts), total output current 5 A, load voltages 24 V DC and 24...230 V AC; can be used up to SIL3 /Category 4/PLe if controlled via F-DQ	
	Analog input modules Analog input module AI 4xU/I 2-wire Standard, BU type A0 or A1, color code CC03, 16 bit, $\pm 0.3\%$ Analog input module AI 4xI 2-/4-wire Standard, BU type A0 or A1, color code CC03, 16 bit, $\pm 0.3\%$ Analog input module AI 4xRTD/TC 2-, 3-, 4-wire High Feature, BU type A0 or A1, color code CC00, 16 bit, $\pm 0.1\%$, scalable measuring range Analog input module AI 2xU/I 2-/4-wire High Speed, BU type A0 or A1, color code CC00, 16 bit, $\pm 0.3\%$, isochronous mode above 250 μ s, oversampling above 50 μ s Analog input module AI 8xRTD/TC 2-wire High Feature, BU type A0 or A1, color code CC00, 16 bit, $\pm 0.1\%$, scalable measuring range Analog input module AI 2xU/I 2-/4-wire High Feature, BU type A0 or A1, color code CC05, 16 bit, $\pm 0.1\%$, independent channel isolation, isochronous mode above 1 ms Analog input module AI Energy Meter Standard, BU type D0, color code CC00	
	Analog output modules Analog output module AQ 4xU/I Standard, BU type A0 or A1, color code CC00, 16 bit, $\pm 0.3\%$ Analog output module AQ 2xU/I High Speed, BU type A0 or A1, color code CC00, 16 bit, $\pm 0.3\%$ Analog output module AQ 2xU/I High Feature, BU type A0 or A1, color code CC00, 16 bit, $\pm 0.1\%$	

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I/O modules

Digital output modules

Overview



- 4-, 8- and 16-channel digital output modules for the ET 200SP
- Can be plugged onto BaseUnits with automatic coding
- LED display for error, operation, supply voltage and status
- Clear labeling on front of module
 - Plain text identification of the module type and function class
 - 2D matrix code (order and serial number)
 - Connection diagram
 - Color coding of the module type DQ: black
 - Hardware and firmware version
 - Color code CC for module-specific color coding of the potentials at the terminals of the BU
 - Complete Article No.
- Optional labeling accessories
 - Labeling strips
 - Reference identification label
- Optional module-specific color identification of the terminals according to the color code CC
- Optional system-integrated shield connection

Technical specifications

	6ES7132-6BD20-0BA0	6ES7132-6BD20-0CA0	6ES7132-6FD00-0BB1	6ES7132-6BF00-0BA0	6ES7132-6BF00-0CA0
	DQ 4x24VDC/2A ST	DQ 4x24VDC/2A HF	DQ 4x24 ... 230VAC/2A	DQ 8x24VDC/0.5A ST	DQ 8x24VDC/0.5A HF
General information					
Product function					
• I&M data	Yes	Yes	Yes; I&M0 to I&M3	Yes	Yes
Engineering with					
• STEP 7 TIA Portal can be configured/integrated as of version		V13 / V13	V13 / V13		V13 / V13
• STEP 7 can be configured/integrated as of version	V5.5 SP3 / -	V5.5 SP3 / -	V5.5 SP3 / -	V5.5 SP3 / -	V5.5 SP3 / -
• PROFIBUS as of GSD version/GSD revision	GSD as of Revision 5	GSD Revision 5	GSD as of Revision 5	GSD Revision 5	GSD Revision 5
• PROFINET as of GSD version/GSD revision	V2.3 / -	V2.3 / -	V2.3 / -	V2.3 / -	V2.3 / -
Operating mode					
• MSO		Yes			Yes
Supply voltage					
Type of supply voltage	DC	DC		DC	DC
Rated value (DC)	24 V	24 V		24 V	24 V
Rated value (AC)			230 V		
Reverse polarity protection	Yes	Yes		Yes	Yes
Digital outputs					
Number of digital outputs	4	4	4	8	8
Current-sinking			No		
Current-sourcing		Yes	Yes		
Digital outputs, configurable			No		
Short-circuit protection	Yes	Yes	No	Yes	

Technical specifications (continued)

	6ES7132-6BD20-0BA0 DQ 4x24VDC/2A ST	6ES7132-6BD20-0CA0 DQ 4x24VDC/2A HF	6ES7132-6FD00-0BB1 DQ 4x24 ... 230VAC/2A	6ES7132-6BF00-0BA0 DQ 8x24VDC/0.5A ST	6ES7132-6BF00-0CA0 DQ 8x24VDC/0.5A HF
Open-circuit detection			No		
Overload protection			No		
Limitation of inductive shutdown voltage to	Typ. L+ (-50 V)	L+ -(37 to 41V)		Typ. L+ (-50 V)	Typ. L+ (-50 V)
Controlling a digital input	Yes	Yes; Minimum current consumption 7 mA	Yes	Yes	Yes
Switching capacity of the outputs					
• with resistive load, max.	2 A	2 A	2 A	0.5 A	0.5 A
• on lamp load, max.	10 W	10 W	100 W	5 W	5 W
Load resistance range					
• lower limit	12 Ω	12 Ω		48 Ω	48 Ω
• upper limit	3 400 Ω	3 400 Ω		12 kΩ	12 kΩ
Output voltage					
• Type of output voltage		DC			
• for signal "1", min.			20.4 V		
• Permissible voltage at output, min.			20.4 V		
• Permissible voltage at output, max.			264 V		
Output current					
• for signal "1" rated value	2 A	2 A	2 A	0.5 A	0.5 A
• for signal "0" residual current, max.	0.1 mA	0.1 mA	460 μA	0.1 mA	0.1 mA
Output delay with resistive load					
• "0" to "1", max.	50 μs		10 ms	50 μs	
• "1" to "0", max.	100 μs		10 ms	100 μs	
• "0" to "1", typ.	50 μs	50 μs		50 μs	50 μs
• "1" to "0", typ.	100 μs	100 μs		100 μs	100 μs
Parallel switching of 2 outputs					
• for logic links			No		
• for increased power	No	No	No	No	No
• for redundant control of a load	Yes		Yes	Yes	Yes
Switching frequency					
• with resistive load, max.	100 Hz	100 Hz	10 Hz	100 Hz	100 Hz
• with inductive load, max.	2 Hz	2 Hz	0.5 Hz	2 Hz	2 Hz
• on lamp load, max.	10 Hz	10 Hz	1 Hz	10 Hz	10 Hz
Aggregate current of the outputs					
• Max. current per channel			2 A		
• Max. current per module	8 A	8 A	8 A	4 A	4 A
Total current of the outputs (per module)					
• horizontal installation					
- up to 40 °C, max.	8 A		8 A		
- up to 50 °C, max.	6 A		6 A		
- up to 60 °C, max.	4 A		4 A		
• vertical installation					
- up to 30 °C, max.			8 A		
- up to 40 °C, max.	6 A		6 A		
- up to 50 °C, max.	4 A		4 A		
- up to 60 °C, max.	4 A				

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Technical specifications (continued)

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	DQ 4x24VDC/2A ST	DQ 4x24VDC/2A HF	DQ 4x24 ... 230VAC/2A	DQ 8x24VDC/0.5A ST	DQ 8x24VDC/0.5A HF
Output current per channel					
• horizontal installation			2 A		
- up to 60 °C, max.					
• vertical installation			2 A		
- up to 50 °C, max.					
Triac outputs					
• Size of motor starters according to NEMA, max.			5		
Cable length					
• Cable length, shielded, max.	1 000 m	1 000 m	1 000 m	1 000 m	1 000 m
• Cable length unshielded, max.	600 m	600 m	600 m	600 m	600 m
Isochronous mode					
Isochronous operation (application synchronized up to terminal)		Yes	No		Yes
Execution and activation time (TCO), min.					48 µs
Bus cycle time (TDP), min.		500 µs			500 µs
Interrupts/diagnostics/status information					
Substitute values connectable	Yes	Yes	Yes	Yes	Yes
Alarms					
• Diagnostic alarm	Yes	Yes	No	Yes	Yes
Diagnostic messages					
• Monitoring the supply voltage	Yes	Yes		Yes	Yes
• Wire break	Yes	Yes		Yes	Yes
• Short circuit	Yes	Yes		Yes	Yes
Diagnostics indication LED					
• Monitoring the supply voltage	Yes; green PWR LED	Yes; green PWR LED		Yes; green PWR LED	Yes; green PWR LED
• Channel status display	Yes; Green LED	Yes; Green LED	Yes; Green LED	Yes; Green LED	Yes; Green LED
• for channel diagnostics		Yes; Red LED	No		Yes; Red LED
• for module diagnostics	Yes; green/red DIAG LED	Yes; green/red DIAG LED	Yes; green/red DIAG LED	Yes; green/red DIAG LED	Yes; green/red DIAG LED
Galvanic isolation					
Electrical isolation channels					
• between the channels and the backplane bus	Yes	Yes	Yes	Yes	Yes
Isolation					
Isolation checked with	707 V DC (type test)	707 V DC (type test)		707 V DC (type test)	707 V DC (type test)
Ambient conditions					
Operating temperature					
• horizontal installation, min.	0 °C			0 °C	
• horizontal installation, max.	60 °C			60 °C	
• vertical installation, min.	0 °C			0 °C	
• vertical installation, max.	50 °C			50 °C	
Dimensions					
Width	15 mm	15 mm	20 mm	15 mm	15 mm
Weights					
Weight, approx.	30 g	30 g	50 g	28 g	30 g