

I/O systems

SIMATIC ET 200 systems for the control cabinet

SIMATIC ET 200SP

I/O modules > Digital output modules

Technical specifications (continued)

Article number	6ES7132-6BF00-0CA0 ET 200SP, DQ 8X24VDC/0.5A HF	6ES7132-6BD20-0BA0 ET 200SP, DQ 4X24VDC/2A ST	6ES7132-6BD20-0CA0 ET 200SP, DQ 4X24VDC/2A HF	6ES7132-6BD20-0DA0 ET 200SP, DQ 4X24VDC/2A HIGH SPEED, PU 1	6ES7132-6FD00-0BB1 ET 200SP, DQ 4X24...230VAC/2A ST
Interrupts/diagnostics/ status information					
Diagnostics function	Yes	Yes	Yes	Yes	No
Substitute values connectable	Yes	Yes	Yes	Yes	Yes
Alarms					
• Diagnostic alarm	Yes	Yes	Yes	Yes	No
Diagnostic messages					
• Monitoring the supply voltage	Yes	Yes	Yes	Yes	No
• Wire-break	Yes; channel by channel	Yes; Module-wise	Yes; channel by channel	No	No
• Short-circuit	Yes; channel by channel	Yes; Module-wise	Yes; channel by channel	Yes; Module-wise	No
• Group error	Yes	Yes	Yes	Yes	Yes
Diagnostics indication LED					
• Monitoring of the supply voltage (PWR-LED)	Yes; green PWR LED	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	No	No
• 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
Potential separation					
Potential separation channels					
• between the channels and backplane bus	Yes	Yes	Yes	Yes	Yes
Isolation					
Isolation tested with	707 V DC (type test)	707 V DC (type test)	707 V DC (type test)	707 V DC (type test)	2 545 V DC/2 s (routine test)
Standards, approvals, certificates					
Suitable for safety functions	No	No	No	No	No
Dimensions					
Width	15 mm	15 mm	15 mm	15 mm	20 mm
Height	73 mm	73 mm	73 mm	73 mm	73 mm
Depth	58 mm	58 mm	58 mm	58 mm	58 mm
Weights					
Weight, approx.	30 g	30 g	30 g	31 g	50 g

Article number	6ES7132-6FD00-0CU0 ET 200SP, DQ 4X24...230VAC/ 2A HF, PU 1	6ES7132-6GD51-0BA0 ET 200SP, RQ CO 4x 24V DC/ 2A ST, PU 1	6ES7132-6HD01-0BB1 ET 200SP, RQ NO 4x 120VDC...230VAC/ 5A, PU 1	6ES7132-6MD00-0BB1 ET 200SP, RQ NO-MA 4X120VDC...230VAC/5A ST
General information				
Product type designation	DQ 4x24 ... 230 V AC/ 2 A HF, PU 1	RQ CO 4x 24 V DC/ 2 A ST, PU 1	RQ 4x120 VDC ... 230 VAC/ 5 A NO ST	RQ 4x120 V DC ... 230 V AC/ 5 A NO MA ST
Product function				
• I&M data	Yes; I&M0 to I&M3	Yes; I&M0 to I&M3	Yes; I&M0 to I&M3	Yes; I&M0 to I&M3
Engineering with				
• STEP 7 TIA Portal configurable/ integrated as of version	V14	V14	V14	V13 SP1
• STEP 7 configurable/integrated as of version	STEP 7 V5.5 or higher	V5.5 SP3	V5.5 SP3	V5.5 SP3 / -
• PCS 7 configurable/integrated as of version			V8.1 SP1	
• PROFIBUS as of GSD version/ GSD revision	GSD as of Revision 5	One GSD file each, Revision 3 and 5 and higher	One GSD file each, Revision 3 and 5 and higher	GSD Revision 5
• PROFINET as of GSD version/ GSD revision	GSDML V2.3	GSDML V2.3	GSDML V2.3	GSDML V2.3

Technical specifications (continued)

Article number	6ES7132-6FD00-0CU0	6ES7132-6GD51-0BA0	6ES7132-6HD01-0BB1	6ES7132-6MD00-0BB1
	ET 200SP, DQ 4X24...230VAC/ 2A HF, PU 1	ET 200SP, RQ CO 4x 24V DC/ 2A ST, PU 1	ET 200SP, RQ NO 4x 120VDC...230VAC/ 5A, PU 1	ET 200SP, RQ NO-MA 4X120VDC...230VAC/5A ST
Operating mode				
• DQ	Yes	Yes	Yes	Yes
• DQ with energy-saving function	Yes	No	No	No
• PWM	No	No	No	No
• Oversampling	No	No	No	No
• MSO	No	No	No	No
• Phase control	Yes; Control area: 8.5 ... 100% of the phase angle			
• Trailing-edge phase	No			
• Half-wave	Yes			
• Full-wave	Yes			
Supply voltage				
Type of supply voltage	24 V AC to 230 V AC, 47 ... 63 Hz	DC	DC	DC
Rated value (DC)		24 V	24 V	24 V
Rated value (AC)	230 V; 47 ... 63 Hz, max. rate of change of frequency 1 mHz/s			
Reverse polarity protection		Yes	Yes	Yes
Digital outputs				
Type of digital output		Relays	Relays	Relays
Number of digital outputs	4	4	4	4
Current-sinking	No	Yes	Yes	
Current-sourcing	Yes	Yes	Yes	
Digital outputs, parameterizable	Yes	Yes	Yes	
Short-circuit protection	No; external fusing necessary	No	No	No
Open-circuit detection	Yes; channel by channel			
Overload protection	No; A miniature fuse with 10 tripping current and tripping characteristic "quick response" must be provided in the module supply			
Controlling a digital input	Yes			
Switching capacity of the outputs				
• with resistive load, max.	2 A; Max. 4 A, see additional description in manual			
• with inductive load, max.	2 A			
• on lamp load, max.	100 W; Tungsten rating in accordance with UL; for thermistors with higher power ratings, see the notes in the manual			
Output voltage				
• Type of output voltage	24V AC to 230V AC			AC/DC
• for signal "1", min.	20.4 V			
Output current				
• for signal "1" rated value	2 A			
• for signal "0" residual current, max.	3 mA			
Output delay with resistive load				
• "0" to "1", max.	40 ms; 2 AC cycles			
• "1" to "0", max.	20 ms; 1 AC cycle			
Parallel switching of two outputs				
• for logic links	No	Yes	Yes	
• for uprating	No	No	No	
• for redundant control of a load	Yes	Yes	Yes	

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	ET 200SP, DQ 4X24...230VAC/ 2A HF, PU 1	ET 200SP, RQ CO 4x 24V DC/ 2A ST, PU 1	ET 200SP, RQ NO 4x 120VDC...230VAC/ 5A, PU 1	ET 200SP, RQ NO-MA 4X120VDC...230VAC/5A ST
Switching frequency				
• with resistive load, max.	10 Hz; Applies to DQ mode; limited by line frequency in PC mode	2 Hz	2 Hz	2 Hz
• with inductive load, max.			0.5 Hz	0.5 Hz
• with inductive load (acc. to IEC 60947-5-1, AC15), max.	10 Hz; Applies to DQ mode; limited by line frequency in PC mode			
• on lamp load, max.	1 Hz; Applies to DQ mode; limited by line frequency in PC mode		2 Hz	2 Hz
Total current of the outputs				
• Current per channel, max.	2 A; Max. 4 A, see additional description in manual	2 A	5 A	5 A
• Current per module, max.	8 A	8 A	20 A	20 A
Total current of the outputs (per module)				
horizontal installation				
- up to 40 °C, max.	8 A; Applicable for current channels up to 2 A. For current channels between 2 A and 4 A, note derating data in the manual	8 A		
- up to 50 °C, max.	8 A; Applicable for current channels up to 2 A. For current channels between 2 A and 4 A, note derating data in the manual	6 A	20 A	20 A
- up to 60 °C, max.	8 A; Applicable for current channels up to 2 A. For current channels between 2 A and 4 A, note derating data in the manual	4 A	16 A	16 A
vertical installation				
- up to 30 °C, max.	8 A; Applicable for current channels up to 2 A. For current channels between 2 A and 4 A, note derating data in the manual	8 A		
- up to 40 °C, max.	8 A; Applicable for current channels up to 2 A. For current channels between 2 A and 4 A, note derating data in the manual	6 A	20 A	20 A
- up to 50 °C, max.	8 A; Applicable for current channels up to 2 A. For current channels between 2 A and 4 A, note derating data in the manual	4 A; in all other mounting positions	16 A; in all other mounting positions	16 A

Technical specifications (continued)

Article number	6ES7132-6FD00-0CU0 ET 200SP, DQ 4X24...230VAC/ 2A HF, PU 1	6ES7132-6GD51-0BA0 ET 200SP, RQ CO 4x 24V DC/ 2A ST, PU 1	6ES7132-6HD01-0BB1 ET 200SP, RQ NO 4x 120VDC...230VAC/ 5A, PU 1	6ES7132-6MD00-0BB1 ET 200SP, RQ NO-MA 4X120VDC...230VAC/5A ST
Relay outputs				
• Number of relay outputs		4	4	4
• Rated supply voltage of relay coil L+ (DC)		24 V	24 V	24 V
• Current consumption of relays (coil current of all relays), max.		40 mA	40 mA	40 mA
• external protection for relay outputs			Yes, with 6A	Yes, with 6A
• Number of operating cycles, max.			7 000 000; see additional description in the manual	7 000 000; see additional description in the manual
Switching capacity of contacts				
- with inductive load, max.			2 A; see additional description in the manual	2 A; see additional description in the manual
- with resistive load, max.		2 A	5 A; see additional description in the manual	5 A; see additional description in the manual
- Thermal continuous current, max.		2 A	5 A; Max. 1 385 VA, 150 W	5 A
- Switching current, min.		1 mA; 5 V DC	100 mA; 5 V DC	100 mA; 5 V DC
- Rated switching voltage (DC)		24 V	24 V DC to 120 V DC	24 V DC to 120 V DC
- Rated switching voltage (AC)		24 V	24V AC to 230V AC	24V AC to 230V AC
Cable length				
• shielded, max.	1 000 m	1 000 m	1 000 m	1 000 m
• unshielded, max.	600 m	200 m	200 m	200 m
Isochronous mode				
Isochronous operation (application synchronized up to terminal)	No	No	No	No
Interrupts/diagnostics/status information				
Diagnostics function	Yes	Yes	Yes	Yes
Substitute values connectable	Yes	Yes	Yes	Yes
Alarms				
• Diagnostic alarm	Yes	Yes	Yes	Yes
Diagnostic messages				
• Diagnostic information readable	Yes			
• Monitoring the supply voltage	Yes	Yes	Yes	Yes
• Wire-break	Yes; channel by channel	No	No	No
• Short-circuit	No	No	No	No
• Group error	Yes			Yes
Diagnostics indication LED				
• Monitoring of the supply voltage (PWR-LED)	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
• for channel diagnostics	Yes; red Fn LED	No	No	No
• for module diagnostics	Yes; green/red DIAG LED	Yes; green/red DIAG LED	Yes; green/red DIAG LED	Yes; green/red DIAG LED
Potential separation				
Potential separation channels				
• between the channels and backplane bus	Yes	Yes	Yes	Yes
Isolation				
Isolation tested with	2 545 V DC/2 s (routine test)	707 V DC (type test)	2 500 V DC (type test)	2 500 V DC (type test)
tested with				
• between channels and backplane bus/supply voltage			2500 V DC	2500 V DC
• between backplane bus and supply voltage			707 V DC (type test)	707 V DC (type test)
Standards, approvals, certificates				
Suitable for safety functions	No	No	No	No

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Technical specifications (continued)

Article number	6ES7132-6FD00-0CU0	6ES7132-6GD51-0BA0	6ES7132-6HD01-0BB1	6ES7132-6MD00-0BB1
	ET 200SP, DQ 4x24V..230VAC/ 2A HF, PU 1	ET 200SP, RQ CO 4x 24V DC/ 2A ST, PU 1	ET 200SP, RQ NO 4x 120VDC..230VAC/ 5A, PU 1	ET 200SP, RQ NO-MA 4x120VDC..230VAC/5A ST
Ambient conditions				
Ambient temperature during operation				
- horizontal installation, min. - horizontal installation, max. - vertical installation, min. - vertical installation, max.			0 °C 60 °C 0 °C; in all other mounting positions 50 °C; in all other mounting positions	
Altitude during operation relating to sea level				
Ambient air temperature-barometric pressure-altitude		On request: Ambient temperatures lower than 0 °C (without condensation) and/or installation altitudes greater than 2 000 m	On request: Ambient temperatures lower than 0 °C (without condensation) and/or installation altitudes greater than 2 000 m	
Dimensions				
Width	20 mm	15 mm	20 mm	20 mm
Height	73 mm	73 mm	73 mm	73 mm
Depth	58 mm	58 mm	58 mm	58 mm
Weights				
Weight, approx.	50 g	30 g	40 g	45 g

Ordering data

Article No.

Article No.

Digital output modules

Type of delivery:
Apart from the standard type of delivery in an individual package, selected I/O modules and BaseUnits are also available in a pack of 10 units. The pack of 10 units enables the amount of waste to be reduced considerably, as well as saving the time of unpacking individual modules.

The number of modules required is the number of modules ordered. The type of packaging is chosen by selecting the article number. Packs of 10 can therefore only be ordered in integer multiples of 10.

Digital output module
DQ 16x24 V DC/0.5 A Basic,
BU type A0, color code CC00

- PU: 1 unit
- PU: 10 units

Digital output module
DQ 16x24 V DC/0.5 A Standard,
BU type A0, color code CC00

- PU: 1 unit
- PU: 10 units

Digital output module
DQ 8x24 V DC/0.5 A Sink Output,
Basic, BU type A0,
color code CC01

- PU: 1 unit

Digital output module
DQ 8x24 V DC/0.5 A Basic,
BU type A0,
color code CC02

- PU: 1 unit
- PU: 10 units

6ES7132-6BH00-0AA0
6ES7132-6BH00-2AA0

6ES7132-6BH01-0BA0
6ES7132-6BH01-2BA0

6ES7132-6BF61-0AA0

6ES7132-6BF01-0AA0
6ES7132-6BF01-2AA0

Digital output module
DQ 8x24 V DC/0.5 A Standard,
BU type A0,
color code CC02

- PU: 1 unit
- PU: 10 units

Digital output module
DQ 8x24 V DC/0.5A High Feature,
BU type A0,
color code CC02

- PU: 1 unit

Digital output module
DQ 4x24 V DC/2 A Standard,
BU type A0,
color code CC02

- PU: 1 unit
- PU: 10 units

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)

- PU: 1 unit

Digital output module
DQ 4x24 V DC/2 A High Speed,
BU type A0, color code CC02,
3 operating modes
(fast isochronous DQ with valve control, pulse width modulation, oversampling)

- PU: 1 unit

Digital output module
DQ 4x24 V AC ... 230 V AC/
2 A Standard for BU type B1,
color code CC41

- PU: 1 unit
- PU: 10 units

6ES7132-6BF01-0BA0
6ES7132-6BF01-2BA0

6ES7132-6BF00-0CA0

6ES7132-6BD20-0BA0
6ES7132-6BD20-2BA0

6ES7132-6BD20-0CA0

6ES7132-6BD20-0DA0

6ES7132-6FD00-0BB1
6ES7132-6FD00-2BB1

Ordering data	Article No.	Article No.
Digital output module DQ 4x24 V AC ... 230 V AC/2 A High Feature for BU type U0, color code CC20, 2 operating modes: DQ and PC (power control via phase angle, half-wave and full-wave control) • PU: 1 unit	6ES7132-6FD00-0CU0	BU20-P16+A0+2D BU type U0; BaseUnit (light) with 16 process terminals to the module; for starting a new load group (max. 10 A) • PU: 1 unit • PU: 10 units 6ES7193-6BP00-0DU0 6ES7193-6BP00-2DU0
Signal relay module RQ CO 4x24 V UC/2 A Standard, changeover contact, BU type A0, color code CC00 • PU: 1 unit	6ES7132-6GD51-0BA0	BU20-P16+A0+2B BU type U0; BaseUnit (dark) with 16 process terminals to the module; for continuing the load group • PU: 1 unit • PU: 10 units 6ES7193-6BP00-0BU0 6ES7193-6BP00-2BU0
Relay module RQ NO 4x120 V DC-230 V AC/5 A Standard, NO contact, BU type B0, B1 • PU: 1 unit • PU: 10 units	6ES7132-6HD01-0BB1 6ES7132-6HD01-2BB1 6ES7132-6MD00-0BB1	Potential distribution modules PotDis BU PotDis BU, type P1 (light), 17x P1 potential, 1x P2 potential, for beginning a new load group (max. 10 A) PotDis BU, type P1 (dark), 17x P1 potential, 1x P2 potential, for continuing the load group PotDis BU, type P2 (light), 1x P1 potential, 17x P2 potential, for beginning a new load group (max. 10 A) PotDis BU, type P2 (dark), 1x P1 potential, 17x P2 potential, for continuing the load group
Usable BaseUnits BU15-P16+A10+2D BU type A0; BaseUnit (light) with 16 process terminals (1 ... 16) to the module and an additional 10 internally jumpered AUX terminals (1 A to 10 A); for starting a new load group (max. 10 A) • PU: 1 unit • PU: 10 units	6ES7193-6BP20-0DA0 6ES7193-6BP20-2DA0	PotDis TB PotDis TB, type BR-W, 18x internally jumpered terminals, without connection to P1, P2 or AUX, (total current max. 10 A) PotDis TB, type P1-R, 18x P1 potential, (total current max. 10 A) PotDis TB, type P2-B, 18x P2 potential, (total current max. 10 A) PotDis TB, type n.c.-G, 18x n.c. (not connected) terminals, without reference to P1, P2 or AUX
BU15-P16+A0+2D BU type A0; BaseUnit (light) with 16 process terminals to the module; for starting a new load group (max. 10 A) • PU: 1 unit • PU: 10 units	6ES7193-6BP00-0DA0 6ES7193-6BP00-2DA0	Accessories Equipment labeling plate 10 sheets of 16 labels, for printing with thermal transfer card printer or plotter
BU15-P16+A10+2B BU type A0; BaseUnit (dark) with 16 process terminals (1 ... 16) to the module and an additional 10 internally jumpered AUX terminals (1 A to 10 A); for continuing the load group • PU: 1 unit • PU: 10 units	6ES7193-6BP20-0BA0 6ES7193-6BP20-2BA0	Labeling strips 500 labeling strips on roll, light gray, for inscription with thermal transfer roll printer 500 labeling strips on roll, yellow, for inscription with thermal transfer roll printer 1000 labeling strips DIN A4, light gray, card, perforated, for inscription with laser printer 1000 labeling strips DIN A4, yellow, card, perforated, for inscription with laser printer
BU15-P16+A0+2B BU type A0; BaseUnit (dark) with 16 process terminals to the module; for continuing the load group • PU: 1 unit • PU: 10 units	6ES7193-6BP00-0BA0 6ES7193-6BP00-2BA0	BU cover For covering empty slots (gaps); 5 units • 15 mm wide • 20 mm wide
BU20-P12+A4+0B BU type B0; BaseUnit (dark) with 12 process terminals (1 ... 12) to the module and an additional 4 internally jumpered AUX terminals (1 A to 4 A); for continuing the load group • PU: 1 unit • PU: 10 units	6ES7193-6BP20-0BB0 6ES7193-6BP20-2BB0	6ES7193-6LR10-0AA0 6ES7193-6LR10-0AG0 6ES7193-6LA10-0AA0 6ES7193-6LA10-0AG0
BU20-P12+A0+4B BU type B1; BaseUnit (dark) with 12 process terminals to the module; for continuing the load group; PU: 1 unit	6ES7193-6BP20-0BB1	6ES7133-6CV15-1AM0 6ES7133-6CV20-1AM0