

I/O systems

ET 200 systems for the control cabinet

ET 200SP - I/O modules

Digital output modules

Overview



- 4, 8 and 16-channel DQ modules
- 4-channel RQ modules
- BaseUnits for single-wire or multi-wire connection
- Function classes Basic, Standard, High-Feature, High-Speed as well as fail-safe DQ and RQ
- Clear labeling on front of module
- LEDs for diagnostics, status, and error
- Individual system-integrated load group formation with self-assembling voltage busbars (power module not required for ET 200SP)
- Electronically readable rating plate (I&M data)
- Partially with additional operating modes
- Optional accessories
 - Labeling strips
 - Equipment marking label
 - Color-coded label with module-specific CC code
 - Shield terminal
- Alternatively, partially also available as pack of 10 (Ordering quantities: integer multiples of ten only)

Overview of digital output modules

Digital output	Article number	CC code	BU type	PU
DQ 16 x 24 V DC/0.5 A ST	6ES7132-6BH00-0BA0	CC00	A0	1
DQ 16 x 24 V DC/0.5 A ST	6ES7132-6BH00-2BA0	CC00	A0	10
DQ 8 x 24 V DC/0.5 A SNK BA	6ES7132-6BF60-0AA0	CC01	A0	1
DQ 8 x 24 V DC/0.5 A ST	6ES7132-6BF00-0BA0	CC02	A0	1
DQ 8 x 24 V DC/0.5 A ST	6ES7132-6BF00-2BA0	CC02	A0	10
DQ 8 x 24 V DC/0.5 A HF	6ES7132-6BF00-0CA0	CC02	A0	1
DQ 4 x 24 V DC/2 A ST	6ES7132-6BD20-0BA0	CC02	A0	1
DQ 4 x 24 V DC/2 A ST	6ES7132-6BD20-2BA0	CC02	A0	10
DQ 4 x 24 V DC/2 A HF	6ES7132-6BD20-0CA0	CC02	A0	1
DQ 4 x 24 V DC/2 A HF	6ES7132-6BD20-2CA0	CC02	A0	10
DQ 4 x 24 V DC/2 A HS With three operating modes • High-speed isochronous DQ with valve control • Pulse width modulation • Oversampling	6ES7132-6BD20-0DA0	CC02	A0	1
DQ 4 x 24...230 V AC/2 A ST	6ES7132-6FD00-0BB1	CC41	B0, B1	1
RQ 4 x 24 V UC/2 A CO ST	6ES7132-6GD50-0BA0	--	A0	1
RQ 4 x 120 V DC - 230 V AC/5 A NO ST	6ES7132-6HD00-0BB1	--	B0, B1	1

Overview (continued)

Overview of BaseUnits

BaseUnit	Article number	CC codes for process terminals	CC codes for AUX terminals	PU
BU type A0 • New load group (light) • 16 process terminals • With 10 AUX terminals	6ES7193-6BP20-0DA0	CC01 to CC05	CC71 to CC73	1
BU type A0 • New load group (light) • 16 process terminals • With 10 AUX terminals	6ES7193-6BP20-2DA0	CC01 to CC05	CC71 to CC73	10
BU type A0 • New load group (light) • 16 process terminals • Without AUX terminals	6ES7193-6BP00-0DA0	CC01 to CC05	--	1
BU type A0 • New load group (light) • 16 process terminals • Without AUX terminals	6ES7193-6BP00-2DA0	CC01 to CC05	--	10
BU type A0 • Forwarding of load group (dark) • 16 process terminals • With 10 AUX terminals	6ES7193-6BP20-0BA0	CC01 to CC05	CC71 to CC73	1
BU type A0 • Forwarding of load group (dark) • 16 process terminals • With 10 AUX terminals	6ES7193-6BP20-2BA0	CC01 to CC05	CC71 to CC73	10
BU type A0 • Forwarding of load group (dark) • 16 process terminals • Without AUX terminals	6ES7193-6BP00-0BA0	CC01 to CC05	--	1
BU type A0 • Forwarding of load group (dark) • 16 process terminals • Without AUX terminals	6ES7193-6BP00-2BA0	CC01 to CC05	--	10
BU type B0 • Forwarding of load group (dark) • 12 process terminals • With 4 AUX terminals	6ES7193-6BP20-0BB0	CC41	CC81 to CC83	1
BU type B1 • Forwarding of load group (dark) • 12 process terminals • 2 x 2 (1L, 2L, 1N, 2N) direct infeed module • Without AUX terminals	6ES7193-6BP20-0BB1	CC41	--	1

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Technical specifications

Article number	6ES7132-6BD20-0BA0 DQ 4X24VDC/2A ST	6ES7132-6BD20-0CA0 DQ 4X24VDC/2A HF	6ES7132-6FD00-0BB1 DQ 4X24...230VAC/ 2A ST	6ES7132-6BF00-0BA0 DQ 8X24VDC/0,5A ST	6ES7132-6BF00-0CA0 DQ 8X24VDC/0,5A HF
Product type designation					
General information					
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	Yes; I&M0 to I&M3
Engineering with					
• STEP 7 TIA Portal can be configured/integrated as of version	V11 SP2 / V13	V13 / V13	V13 / V13	V11 SP2 / 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
Operating mode					
• DQ	Yes	Yes	Yes	Yes	Yes
• DQ with energy-saving function	No	No	No	No	No
• PWM	No	No	No	No	No
• Oversampling	No	No	No	No	No
• MSO	No	Yes	No	No	Yes
Supply voltage					
Type of supply voltage	DC	DC	24 V AC to 230 V AC	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					
Type of digital output			Triac with zero point detection		
Number of digital outputs	4	4	4	8	8
Current-sinking	No	No	No	No	No
Current-sourcing	Yes	Yes	Yes	Yes	Yes
Digital outputs, configurable short-circuit protection	Yes	Yes	No	Yes	Yes
			No; when using BU type B1, a fuse with 10 A tripping current must be provided		
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
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			24 V AC to 230 V AC		
• for signal "1", min.			20.4 V		
• Permissible voltage at output, min.			20.4 V		
• Permissible voltage at output, max.			264 V		

Technical specifications (continued)

Article number	6ES7132-6BD20-0BA0 DQ 4X24VDC/2A ST	6ES7132-6BD20-0CA0 DQ 4X24VDC/2A HF	6ES7132-6FD00-0BB1 DQ 4X24...230VAC/2A ST	6ES7132-6BF00-0BA0 DQ 8X24VDC/0,5A ST	6ES7132-6BF00-0CA0 DQ 8X24VDC/0,5A HF
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", typ.	50 µs	50 µs			50 µs
• "0" to "1", max.	50 µs		10 ms	50 µs	
• "1" to "0", typ.	100 µs	100 µs			100 µs
• "1" to "0", max.	100 µs		10 ms	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					
• Current per channel, max.			2 A		
• Current per module, max.	8 A	8 A	8 A	4 A	4 A
Total current of the outputs (per module)					
horizontal installation					
- up to 30 °C, max.	8 A	8 A			
- up to 40 °C, max.	8 A	8 A	8 A		
- up to 50 °C, max.	6 A	6 A	6 A		
- up to 60 °C, max.	4 A	4 A	4 A	4 A	4 A
vertical installation					
- up to 30 °C, max.	8 A	8 A	8 A		
- up to 40 °C, max.	6 A	6 A	6 A		
- up to 50 °C, max.	4 A	4 A	4 A	4 A	4 A
- up to 60 °C, max.	4 A				
Output current per channel					
horizontal installation					
- up to 60 °C, max.			2 A		
vertical installation					
- up to 50 °C, max.			2 A		
Triac outputs					
• Size of motor starters according to NEMA, max.			5		
Cable length					
• shielded, max.	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
Isochronous mode					
Isochronous operation (application synchronized up to terminal)	No	Yes	No	No	Yes
Execution and activation time (TCO), min.					48 µs
Bus cycle time (TDP), min.		500 µs			500 µs

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Technical specifications (continued)

Article number	6ES7132-6BD20-0BA0 DQ 4X24VDC/2A ST	6ES7132-6BD20-0CA0 DQ 4X24VDC/2A HF	6ES7132-6FD00-0BB1 DQ 4X24...230VAC/ 2A ST	6ES7132-6BF00-0BA0 DQ 8X24VDC/0,5A ST	6ES7132-6BF00-0CA0 DQ 8X24VDC/0,5A HF
Interrupts/diagnostics/ status information					
Substitute values connectable	Yes	Yes	Yes	Yes	Yes
Alarms					
• Diagnostic alarm	Yes	Yes	No	Yes	Yes
Diagnostic messages					
• Diagnostics	Yes	Yes	No	Yes	Yes
• Monitoring the supply voltage	Yes	Yes	No	Yes	Yes
• Wire break	Yes	Yes		Yes	Yes
• Short circuit	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			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)	2545V DC 2s (routine test)	707 V DC (type test)	707 V DC (type test)
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
Article number	6ES7132-6BF60-0AA0 DQ 8X24VDC/0,5A SINK BASIC	6ES7132-6BH00-0BA0 DQ 16X24VDC/0,5A ST	6ES7132-6HD00-0BB0 RQ NO 4X120VDC...230VAC/ 5A ST	6ES7132-6GD50-0BA0 RQ 4X24VDC/2A CO ST	
Product type designation					
General information					
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 can be configured/integrated as of version	V13 / V13	V11 SP2 / V13	V12 SP1 / V13	V13 / V13	
• STEP 7 can be configured/integrated as of version	V5.5 SP3 / -	V5.5 SP3 / -	V5.5 SP3 / -	V5.5 SP3 / -	
• PROFIBUS as of GSD version/GSD revision	GSD Revision 5	GSD Revision 5	GSD Revision 5	GSD Revision 5	
Operating mode					
• DQ	Yes	Yes	Yes	Yes	
• DQ with energy-saving function	No	No	No	No	
• PWM	No	No	No	No	
• Oversampling	No	No	No	No	
• MSO	No	No	No	No	
Supply voltage					
Type of supply voltage	24 V DC	DC	DC	DC	
Rated value (DC)	24 V	24 V	24 V	24 V	
Reverse polarity protection		Yes	Yes		

Ordering data	Article No.		Article No.
Digital output modules		Supported BaseUnits	
Digital output module DQ 16x24 V DC/0.5 A Standard, BU type A0, color code CC00 • PU: 1 unit • PU: 10 units	6ES7132-6BH00-0BA0 6ES7132-6BH00-2BA0	BU15-P16+A10+2D BU type A0; BaseUnit (light) with 16 process terminals (1...16) to the module and an additional 10 inter- nally 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
Digital output module DQ 8x24 V DC/0.5 A Sink Output, Basic, BU type A0, color code CC01; PU: 1 unit	6ES7132-6BF60-0AA0	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
Digital output module DQ 8x24 V DC/0.5 A Standard, BU type A0, color code CC02 • PU: 1 unit • PU: 10 units	6ES7132-6BF00-0BA0 6ES7132-6BF00-2BA0	BU15-P16+A10+2B BU type A0; BaseUnit (dark) with 16 process terminals (1...16) to the module and an additional 10 inter- nally 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
Digital output module DQ 8x24 V DC/0.5 A High Feature, BU type A0, color code CC02; PU: 1 unit	6ES7132-6BF00-0CA0	BU15-P16+A10+2B BU type A0; BaseUnit (dark) with 16 process terminals (1...16) to the module and an additional 10 inter- nally 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
Digital output module DQ 4x24 V DC/2 A Standard, BU type A0, color code CC02 • PU: 1 unit • PU: 10 units	6ES7132-6BD20-0BA0 6ES7132-6BD20-2BA0	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
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 • PU: 1 unit • PU: 10 units	6ES7132-6BD20-0CA0 6ES7132-6BD20-2CA0	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
Digital output module DQ 4x24VDC/2A High Feature, BU type A0, color code CC02, 3 operating modes (high-speed isochronous DQ with valve control, pulse width modulation, oversampling); PU: 1 unit	6ES7132-6BD20-0DA0	BU20-P12+A4+0B BU type B0; BaseUnit (dark) with 12 process terminals (1...12) to the module and an additional 4 inter- nally jumpered AUX terminals (1 A to 4 A); for continuing the load group; PU: 1 unit	6ES7193-6BP20-0BB0
Digital output module DQ 4x24VAC...230VAC/2A Standard for BU type B1, color code CC41; 1 unit	6ES7132-6FD00-0BB1	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
Signal relay module RQ CO 4x24 V UC/2 A Standard, changeover contact, BU type A0, color code CC00; PU: 1 unit	6ES7132-6GD50-0BA0		
Relay module RQ NO 4x120 V DC - 230 V AC/5 A Standard, normally-open contact, BU type B0, color code CC00; PU: 1 unit	6ES7132-6HD00-0BB0		