

Siemens
EcoTech



SIMATIC S7-1500 digital input/output module, DI 32x24VDC BA SNK / SRC, 32 channels in groups of 16, input delay typ. 3.2 ms input type 3 (IEC 61131), sinking/sourcing input, DQ 32XDC 24V/0.3A SNK BA; 32 channels in groups of 16; 2 A per group at 60 °C; sourcing output; 35 mm wide; cables and terminal blocks to be ordered separately as accessories

General information	
Product type designation	DI 32 x 24 V DC / DQ 32 x 24 V DC/0.3A SNK BA
HW functional status	from FS01
Firmware version	V1.0.0
• FW update possible	Yes
Product function	
• I&M data	Yes; I&M0 to I&M3
• Isochronous mode	No
• Prioritized startup	No
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	V16 with HSP 0319 / V17
• STEP 7 configurable/integrated from version	V5.5 SP3 / -
• PROFIBUS from GSD version/GSD revision	V1.0 / V5.1
• PROFINET from GSD version/GSD revision	V2.35 / -
Operating mode	
• DI	Yes
• Counter	No
• DQ	Yes
• DQ with energy-saving function	No
• PWM	No
• Cam control (switching at comparison values)	No
• Oversampling	No
• MSI	Yes
• MSO	Yes
• Integrated operating cycle counter	No
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes; Through internal protection with 4 A per group
external protection for power supply lines (recommendation)	input side: 24 V DC/4 A miniature circuit breaker with type B or C tripping characteristic; output side: 24 V DC/6 A miniature circuit breaker with type B tripping characteristic
Input current	
Current consumption, max.	45 mA; without load
Output voltage	

Rated value (DC)	24 V
Power	
Power consumption from the backplane bus	0.6 W
Power loss	
Power loss, typ.	4.7 W
Address area	
Address space per module	
• Inputs	4 byte
• Outputs	4 byte
Digital inputs	
Number of digital inputs	32
Digital inputs, parameterizable	No
Sourcing/sinking input	Yes
Input characteristic curve in accordance with IEC 61131, type 3	Yes
Pulse extension	No
Edge evaluation	No
Signal change flutter	No
Flutter observation window	No
Number of simultaneously controllable inputs	
• Number of simultaneously controllable inputs	32; see additional description in the manual
Digital input functions, parameterizable	
• Gate start/stop	No
• Freely usable digital input	No
• Counter	No
• Digital input with oversampling	No
Input voltage	
• Rated value (DC)	24 V
• for signal "0"	-5 ... +5 V (reference potential is COM)
• for signal "1"	-11 ... -30 V; +11 ... +30 V (reference potential is COM)
Input current	
• for signal "1", typ.	2.7 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	No
— at "0" to "1", min.	3 ms
— at "0" to "1", max.	4 ms
— at "1" to "0", min.	3 ms
— at "1" to "0", max.	4 ms
for interrupt inputs	
— Parameterizable	No
for technological functions	
— Parameterizable	No
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	600 m
Digital outputs	
Type of digital output	Transistor
Number of digital outputs	32
Current-sinking	Yes
Current-sourcing	No
Digital outputs, parameterizable	No
Short-circuit protection	No; external fusing necessary, max. 4 A per group, tripping characteristic type B or C
Limitation of inductive shutdown voltage to	L+ (-53 V)
Controlling a digital input	Yes
Digital output functions, parameterizable	
• Switching tripped by comparison values	No
• Freely usable digital output	No
• PWM output	No

• Digital output with oversampling	No
Switching capacity of the outputs	
• with resistive load, max.	0.3 A
• on lamp load, max.	5 W
Load resistance range	
• lower limit	80 Ω
• upper limit	10 kΩ
Output voltage	
• for signal "1", min.	M+ (0.5 V)
Output current	
• for signal "1" rated value	0.3 A
• for signal "1" permissible range, max.	0.3 A
• for signal "0" residual current, max.	0.5 mA
Output delay with resistive load	
• "0" to "1", max.	100 μs
• "1" to "0", max.	500 μs
Parallel switching of two outputs	
• for logic links	Yes
• for uprating	No
• for redundant control of a load	Yes
Switching frequency	
• with resistive load, max.	100 Hz
• with inductive load, max.	0.5 Hz; According to IEC 60947-5-1, DC-13
• on lamp load, max.	10 Hz
Total current of the outputs	
• Current per channel, max.	0.3 A; see additional description in the manual
• Current per group, max.	2 A; see additional description in the manual
• Current per module, max.	4 A; see additional description in the manual
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	600 m
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
— permissible quiescent current (2-wire sensor), max.	1.5 mA
Interrupts/diagnostics/status information	
Diagnostics function	No
Substitute values connectable	No
Alarms	
• Diagnostic alarm	No
• Maintenance interrupt	No
• Hardware interrupt	No
Diagnoses	
• Monitoring the supply voltage	No
• Wire break	No
• short-circuit	No
• Group error	No
Diagnostics indication LED	
• RUN LED	Yes; green LED
• ERROR LED	Yes; red LED
• MAINT LED	No
• Monitoring of the supply voltage (PWR-LED)	Yes; via SIMATIC TOP connect connection module
• Channel status display	Yes; via SIMATIC TOP connect connection module
• for channel diagnostics	No
• for module diagnostics	No
Potential separation	
Potential separation channels	
• between the channels	No
• between the channels, in groups of	16; 32 when using SIMATIC TOP connect connection module

<ul style="list-style-type: none">• between the channels and backplane bus	Yes		
Isolation			
Isolation tested with	707 V DC (type test)		
Standards, approvals, certificates			
Siemens Eco Profile (SEP)	Siemens EcoTech		
Suitable for safety-related tripping of standard modules	No		
Ecological footprint			
<ul style="list-style-type: none">• environmental product declaration	Yes		
Global warming potential			
<ul style="list-style-type: none">— global warming potential, (total) [CO2 eq]	18.9 kg		
<ul style="list-style-type: none">— global warming potential, (during production) [CO2 eq]	12.1 kg		
<ul style="list-style-type: none">— global warming potential, (during operation) [CO2 eq]	7.66 kg		
<ul style="list-style-type: none">— global warming potential, (after end of life cycle) [CO2 eq]	-1.02 kg		
Security			
signed firmware update	No		
safely removing data	No		
data integrity	No		
Ambient conditions			
Ambient temperature during operation			
<ul style="list-style-type: none">• horizontal installation, min.	-30 °C		
<ul style="list-style-type: none">• horizontal installation, max.	60 °C		
<ul style="list-style-type: none">• vertical installation, min.	-30 °C		
<ul style="list-style-type: none">• vertical installation, max.	40 °C		
Altitude during operation relating to sea level			
<ul style="list-style-type: none">• Installation altitude above sea level, max.	5 000 m		
Absolute humidity			
<ul style="list-style-type: none">• dew point, min.	-60 °C; suitable for dry room applications		
Dimensions			
Width	35 mm		
Height	147 mm		
Depth	129 mm		
Weights			
Weight, approx.	250 g		
Other			
Note:	Please order cable and connection modules separately		
Classifications			
		Version	Classification
	eClass	16	27-24-22-04
	eClass	14	27-24-22-04
	eClass	12	27-24-22-04
	eClass	9.1	27-24-22-04
	eClass	9	27-24-22-04
	eClass	8	27-24-22-04
	eClass	7.1	27-24-22-04
	eClass	6	27-24-22-04
	ETIM	10	EC001419
	ETIM	9	EC001419
	ETIM	8	EC001419
	ETIM	7	EC001419
	IDEA	4	3566
	UNSPSC	15	32-15-17-05
Approvals / Certificates			
General Product Approval			

[Miscellaneous](#)

[Manufacturer Declaration](#)



General Product Approval

For use in hazardous locations



[China RoHS](#)

[Manufacturer Declaration](#)



[CCC-Ex](#)

For use in hazardous locations

Maritime application



[Type Examination Certificate](#)

[Miscellaneous](#)

[CCC-Ex](#)



Maritime application



[NK / Nippon Kaiji Kyokai](#)



[CCS \(China Classification Society\)](#)

Maritime application

Environment

[KR \(Korean Register of Shipping\)](#)



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