

Siemens
EcoTech



SIMATIC S7-1500, digital input module DI 16x24 V DC HF, 16 channels in groups of 16; of which 2 inputs as counters can be used; input delay 0.05..20 ms; input type 3 (IEC 61131); diagnostics; hardware interrupts: front connector (screw terminals or push-in) to be ordered separately

General information	
Product type designation	DI 16x24VDC HF
HW functional status	from FS04
Firmware version	V2.2.0
• FW update possible	Yes
Product function	
• I&M data	Yes; I&M0 to I&M3
• Isochronous mode	Yes
• Prioritized startup	Yes
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	V13 SP1 / -
• 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	V2.3 / -
Operating mode	
• DI	Yes
• Counter	Yes
• Oversampling	No
• MSI	Yes
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
Input current	
Current consumption, max.	20 mA
Power	
Power consumption from the backplane bus	1.1 W
Power loss	
Power loss, typ.	2.6 W
Address area	
Address space per module	
• Inputs	2 byte; typical, maximum 20 bytes, see manual for details
• Outputs	0 byte; typical, maximum 16 bytes, see manual for details
Digital inputs	
Number of digital inputs	16

Digital inputs, parameterizable	Yes
Sourcing/sinking input	P-reading
Input characteristic curve in accordance with IEC 61131, type 3	Yes
Pulse extension	No
Edge evaluation	Yes; Positive edge, negative edge
Signal change flutter	No
Flutter observation window	No
Number of simultaneously controllable inputs	
• Number of simultaneously controllable inputs	16
Digital input functions, parameterizable	
• Gate start/stop	Yes
• Freely usable digital input	Yes
• Counter	
— Number, max.	2
— Counting frequency, max.	6 kHz
— Counting width	32 bit
— Counting direction up/down	Up
• Digital input with oversampling	No
Input voltage	
• Rated value (DC)	24 V
• for signal "0"	-30 to +5 V
• for signal "1"	+11 to +30V
Input current	
• for signal "1", typ.	2.5 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	Yes; 0.05 / 0.1 / 0.4 / 1.6 / 3.2 / 12.8 / 20 ms
— at "0" to "1", min.	0.05 ms
— at "0" to "1", max.	20 ms
— at "1" to "0", min.	0.05 ms
— at "1" to "0", max.	20 ms
for interrupt inputs	
— Parameterizable	Yes
for technological functions	
— Parameterizable	Yes
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
Isochronous mode	
Filtering and processing time (TCI), min.	80 µs; At 50 µs filter time
Bus cycle time (TDP), min.	250 µs
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Alarms	
• Diagnostic alarm	Yes
• Hardware interrupt	Yes
Diagnoses	
• Monitoring the supply voltage	Yes
• Wire break	Yes; to I < 350 µA
• Short-circuit	No
Diagnostics indication LED	
• RUN LED	Yes; green LED
• ERROR LED	Yes; red LED
• Monitoring of the supply voltage (PWR-LED)	Yes; green LED
• Channel status display	Yes; green LED

• for channel diagnostics • for module diagnostics		Yes; red LED	
		Yes; red LED	
Potential separation			
Potential separation channels			
• between the channels		No	
• between the channels, in groups of		16	
• between the channels and backplane bus		Yes	
• Between the channels and load voltage L+		No	
• between the channels and the power supply of the electronics		No	
Isolation			
Isolation tested with		707 V DC (type test)	
Standards, approvals, certificates			
Siemens Eco Profile (SEP)		Siemens EcoTech	
Suitable for safety functions		No	
Ecological footprint			
• environmental product declaration		Yes	
Global warming potential			
— global warming potential, (total) [CO2 eq]		18.9 kg	
— global warming potential, (during production) [CO2 eq]		12.1 kg	
— global warming potential, (during operation) [CO2 eq]		7.66 kg	
— global warming potential, (after end of life cycle) [CO2 eq]		-1.02 kg	
Security			
signed firmware update		Yes; Firmware V3.0.0 or higher	
safely removing data		No	
data integrity		Yes; Firmware V3.0.0 or higher	
Ambient conditions			
Ambient temperature during operation			
• horizontal installation, min.		-30 °C; From FS05	
• horizontal installation, max.		60 °C	
• vertical installation, min.		-30 °C; From FS05	
• vertical installation, max.		40 °C	
Altitude during operation relating to sea level			
• Installation altitude above sea level, max.		5 000 m; Restrictions for installation altitudes > 2 000 m, see manual	
Absolute humidity			
• dew point, min.		-60 °C; suitable for dry room applications	
Dimensions			
Width		35 mm	
Height		147 mm	
Depth		129 mm	
Weights			
Weight, approx.		240 g	
Other			
Note:		please order front connectors (screw-in/push-in) 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](#)



[FM](#)

For use in hazardous locations



[FM](#)

[CCC-Ex](#)



[Type Examination Certificate](#)

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Maritime application

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Maritime application

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

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



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