

SIMATIC S7-1500, digital input module DI 16xDC 24V HF, 16 channels in groups of 16; 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	
HW functional status	FS04
Firmware version	V2.2.0
<ul style="list-style-type: none"> <li>FW update possible</li> </ul>	Yes
Product function	
<ul style="list-style-type: none"> <li>I&amp;M data</li> </ul>	Yes; I&M0 to I&M3
Engineering with	
<ul style="list-style-type: none"> <li>STEP 7 TIA Portal configurable/integrated as of version</li> </ul>	V13 SP1 / -
<ul style="list-style-type: none"> <li>STEP 7 configurable/integrated as of version</li> </ul>	V5.5 SP3 / -
<ul style="list-style-type: none"> <li>PROFIBUS as of GSD version/GSD revision</li> </ul>	V1.0 / V5.1
<ul style="list-style-type: none"> <li>PROFINET as of GSD version/GSD revision</li> </ul>	V2.3 / -
Operating mode	
<ul style="list-style-type: none"> <li>DI</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Counter</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Oversampling</li> </ul>	No
<ul style="list-style-type: none"> <li>MSI</li> </ul>	Yes
Supply voltage	

Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes

### Input current

Current consumption, max.	20 mA; with 24 V DC supply
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### Power

Power available from the backplane bus	1.1 W
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### Power loss

Power loss, typ.	2.6 W
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### Digital inputs

Number of digital inputs	16
Digital inputs, parameterizable	Yes
Source/sink input	P-reading
Input characteristic curve in accordance with IEC 61131, type 3	Yes

### Digital input functions, parameterizable

<ul style="list-style-type: none"> <li>• Gate start/stop</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Freely usable digital input</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Counter</li> </ul>	
— Number, max.	2
— Counting frequency, max.	3 kHz
— Counting width	32 bit
— Counting direction up/down	Up

### Input voltage

<ul style="list-style-type: none"> <li>• Rated value (DC)</li> </ul>	24 V
<ul style="list-style-type: none"> <li>• for signal "0"</li> </ul>	-30 to +5V
<ul style="list-style-type: none"> <li>• for signal "1"</li> </ul>	+11 to +30V

### Input current

<ul style="list-style-type: none"> <li>• for signal "1", typ.</li> </ul>	2.5 mA
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### 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
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#### for technological functions

— parameterizable	Yes
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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	
Isochronous operation (application synchronized up to terminal)	Yes
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
Diagnostic messages	
• 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	Yes; Red LED
• for module diagnostics	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 the power supply of the electronics	No
Isolation	
Isolation tested with	707 V DC (type test)
Standards, approvals, certificates	
Suitable for safety functions	No

## Ambient conditions

### Ambient temperature during operation

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|---------------------------------|-------|
| • horizontal installation, min. | 0 °C  |
| • horizontal installation, max. | 60 °C |
| • vertical installation, min.   | 0 °C  |
| • vertical installation, max.   | 40 °C |

### Altitude during operation relating to sea level

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|---|--|
| • Installation altitude above sea level, max. | 5 000 m; Restrictions for installation altitudes > 2 000 m, see manual |
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## Decentralized operation

Prioritized startup	Yes
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## Dimensions

Width	35 mm
Height	147 mm
Depth	129 mm

## Weights

Weight, approx.	240 g
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**last modified:** 08/27/2019