



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
<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
<ul style="list-style-type: none"> <li>Isochronous mode</li> </ul>	No
<ul style="list-style-type: none"> <li>Prioritized startup</li> </ul>	No
Engineering with	
<ul style="list-style-type: none"> <li>STEP 7 TIA Portal configurable/integrated from version</li> </ul>	V16 with HSP 0319 / V17
<ul style="list-style-type: none"> <li>STEP 7 configurable/integrated from version</li> </ul>	V5.5 SP3 / -
<ul style="list-style-type: none"> <li>PROFIBUS from GSD version/GSD revision</li> </ul>	V1.0 / V5.1
<ul style="list-style-type: none"> <li>PROFINET from GSD version/GSD revision</li> </ul>	V2.35 / -
Operating mode	
<ul style="list-style-type: none"> <li>DI</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Counter</li> </ul>	No
<ul style="list-style-type: none"> <li>DQ</li> </ul>	Yes
<ul style="list-style-type: none"> <li>DQ with energy-saving function</li> </ul>	No
<ul style="list-style-type: none"> <li>PWM</li> </ul>	No
<ul style="list-style-type: none"> <li>Cam control (switching at comparison values)</li> </ul>	No
<ul style="list-style-type: none"> <li>Oversampling</li> </ul>	No
<ul style="list-style-type: none"> <li>MSI</li> </ul>	Yes
<ul style="list-style-type: none"> <li>MSO</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Integrated operating cycle counter</li> </ul>	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 / header	
Rated value (DC)	24 V
Power	
Power available from the backplane bus	0.6 W

<b>Power loss</b>	
Power loss, typ.	4.7 W
<b>Digital inputs</b>	
Number of digital inputs	32
Digital inputs, parameterizable	No
Source/sink input	Yes
Input characteristic curve in accordance with IEC 61131, type 3	Yes
<b>Number of simultaneously controllable inputs</b>	
• Number of simultaneously controllable inputs	32
<b>horizontal installation</b>	
— up to 60 °C, max.	32
<b>vertical installation</b>	
— up to 40 °C, max.	16
<b>Input voltage</b>	
• 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)
<b>Input current</b>	
• for signal "1", typ.	2.7 mA
<b>Input delay (for rated value of input voltage)</b>	
<b>for standard inputs</b>	
— 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
<b>for interrupt inputs</b>	
— parameterizable	No
<b>for technological functions</b>	
— parameterizable	No
<b>Cable length</b>	
• shielded, max.	1 000 m
• unshielded, max.	600 m
<b>Digital outputs</b>	
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
<b>Switching capacity of the outputs</b>	
• with resistive load, max.	0.3 A
• on lamp load, max.	5 W
<b>Load resistance range</b>	
• lower limit	80 Ω
• upper limit	10 kΩ
<b>Output voltage</b>	
• for signal "1", min.	M+ (0.5 V)
<b>Output current</b>	
• 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
<b>Output delay with resistive load</b>	
• "0" to "1", max.	100 μs
• "1" to "0", max.	500 μs
<b>Parallel switching of two outputs</b>	

<ul style="list-style-type: none"> <li>• for logic links</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• for uprating</li> </ul>	No
<ul style="list-style-type: none"> <li>• for redundant control of a load</li> </ul>	Yes
<b>Switching frequency</b>	
<ul style="list-style-type: none"> <li>• with resistive load, max.</li> </ul>	100 Hz
<ul style="list-style-type: none"> <li>• with inductive load, max.</li> </ul>	0.5 Hz; According to IEC 60947-5-1, DC-13
<ul style="list-style-type: none"> <li>• on lamp load, max.</li> </ul>	10 Hz
<b>Total current of the outputs</b>	
<ul style="list-style-type: none"> <li>• Current per channel, max.</li> </ul>	0.3 A
<ul style="list-style-type: none"> <li>• Current per group, max.</li> </ul>	2 A
<ul style="list-style-type: none"> <li>• Current per module, max.</li> </ul>	4 A
<b>Total current of the outputs (per module)</b>	
horizontal installation	
— up to 60 °C, max.	4 A
vertical installation	
— up to 40 °C, max.	4 A
<b>Cable length</b>	
<ul style="list-style-type: none"> <li>• shielded, max.</li> </ul>	1 000 m
<ul style="list-style-type: none"> <li>• unshielded, max.</li> </ul>	600 m
<b>Encoder</b>	
Connectable encoders	
<ul style="list-style-type: none"> <li>• 2-wire sensor</li> </ul>	Yes
— permissible quiescent current (2-wire sensor), max.	1.5 mA
<b>Interrupts/diagnostics/status information</b>	
Diagnostics function	No
Substitute values connectable	No
<b>Alarms</b>	
<ul style="list-style-type: none"> <li>• Diagnostic alarm</li> </ul>	No
<ul style="list-style-type: none"> <li>• Maintenance interrupt</li> </ul>	No
<ul style="list-style-type: none"> <li>• Hardware interrupt</li> </ul>	No
<b>Diagnoses</b>	
<ul style="list-style-type: none"> <li>• Monitoring the supply voltage</li> </ul>	No
<ul style="list-style-type: none"> <li>• Wire-break</li> </ul>	No
<ul style="list-style-type: none"> <li>• Short-circuit</li> </ul>	No
<ul style="list-style-type: none"> <li>• Group error</li> </ul>	No
<b>Diagnostics indication LED</b>	
<ul style="list-style-type: none"> <li>• RUN LED</li> </ul>	Yes; green LED
<ul style="list-style-type: none"> <li>• ERROR LED</li> </ul>	Yes; red LED
<ul style="list-style-type: none"> <li>• MAINT LED</li> </ul>	No
<ul style="list-style-type: none"> <li>• Monitoring of the supply voltage (PWR-LED)</li> </ul>	Yes; via SIMATIC TOP connect connection module
<ul style="list-style-type: none"> <li>• Channel status display</li> </ul>	Yes; via SIMATIC TOP connect connection module
<ul style="list-style-type: none"> <li>• for channel diagnostics</li> </ul>	No
<ul style="list-style-type: none"> <li>• for module diagnostics</li> </ul>	No
<b>Potential separation</b>	
Potential separation channels	
<ul style="list-style-type: none"> <li>• between the channels</li> </ul>	No
<ul style="list-style-type: none"> <li>• between the channels, in groups of</li> </ul>	16; 32 when using SIMATIC TOP connect connection module
<ul style="list-style-type: none"> <li>• between the channels and backplane bus</li> </ul>	Yes
<b>Isolation</b>	
Isolation tested with	707 V DC (type test)
<b>Ambient conditions</b>	
Ambient temperature during operation	
<ul style="list-style-type: none"> <li>• horizontal installation, min.</li> </ul>	-30 °C
<ul style="list-style-type: none"> <li>• horizontal installation, max.</li> </ul>	60 °C
<ul style="list-style-type: none"> <li>• vertical installation, min.</li> </ul>	-30 °C
<ul style="list-style-type: none"> <li>• vertical installation, max.</li> </ul>	40 °C
Altitude during operation relating to sea level	
<ul style="list-style-type: none"> <li>• Installation altitude above sea level, max.</li> </ul>	5 000 m

Dimensions	
Width	35 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	250 g
Other	
Note:	Please order cable and connection modules separately

**last modified:** 1/16/2021 