## SIEMENS

## Data sheet

## 6ES7522-1BH10-0AA0



SIMATIC S7-1500, digital output module, DQ16x24 V DC/0.5A BA, 16 channels in groups of 8, 4 A per group; the module supports the safety-oriented shutdown of load groups up to SILCL2 acc. to EN 62061:2005 + A2:2015, and Category 3 / PL d according to EN ISO 13849-1:2015. delivery incl. front connector push-in

Product type designation     DQ 16x24VDC/0.5A BA       HW functional status     From FS01       Firmware version     *       • FW update possible     Yes       Product function     *       • I&M data     Yes; I&M0 to I&M3       • Isochronous mode     No       • Prioritized startup     Yes       Engineering with     V13 / V13       • STEP 7 TIA Portal configurable/integrated from version     V13 / V13       • STEP 7 Ton FOOT Design (SSD version/GSD revision     V1.0 / V5.1       • PROFINET from GSD version/GSD revision     V2.3 / -       Operating mode     Yes       • DQ     Yes       • DQ     Yes       • DQ with energy-saving function     No       • MSO     Yes       Supply voltage     Zet V       Permissible range, upper limit (DC)     19.2 V       permissible range, upper limit (DC)     28.8 V       Reverse polarity protection     Yes; through internal protection with 7 A per group       Input current     Zurrent consumption, max.     30 mA       Outputs     1.15 W       Power toss     1.22 W       Power loss, typ.     2.2 W	General information		
Firmware version       Yes         Product function       Yes         Product function       i&M data         • i&M data       Yes; I&M0 to I&M3         • iSochronous mode       No         • Step 7 TIA Portal configurable/integrated from version       Y13 / V13         • STEP 7 tonfigurable/integrated from version       V15.5 SP3 / -         • STEP 7 tonfigurable/integrated from version       V2.5 SP3 / -         • PROFIBUS from GSD version/GSD revision       V1.0 / V5.1         • PROFINET from GSD version/GSD revision       V2.3 / -         Operating mode       •         • DQ       Yes         • DQ with energy-saving function       No         • Oversampling       No         • MSO       Yes         Supply voltage       Yes         Rated value (DC)       24 V         permissible range, upper limit (DC)       28.8 V         Reverse polarity protection       Yes; through internal protection with 7 A per group         Iput current	Product type designation	DQ 16x24VDC/0.5A BA	
• FW update possible         Yes           Product function	HW functional status	From FS01	
Product function         • I&M data       Yes; I&M0 to I&M3         • Isochronous mode       No         • Prioritized startup       Yes         Engineering with       •         • STEP 7 TIA Portal configurable/integrated from version       V13 / V13         • 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       Ves         • DQ       Yes         • DQ with energy-saving function       No         • PVMM       No         • Oversampling       No         • MSO       Yes         Supply voltage       Rated value (DC)         permissible range, lower limit (DC)       24 V         permissible range, upper limit (DC)       28.8 V         Reverse polarity protection       Yes; through internal protection with 7 A per group         Input current       Current consumption, max.       30 mA         Output voltage       Rated value (DC)       24 V         Power loss       Power loss       1.15 W         Power loss       1.15 W       Power loss         Power loss       22 W       Digital outputs<	Firmware version		
• I&M data     Yes; I&M0 to I&M3       • Isochronous mode     No       • Prioritized startup     Yes       Engineering with     •       • STEP 7 TIA Portal configurable/integrated from version     V13 / V13       • 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     •       • DQ     Yes       Supply voltage     Pated value (DC)       Pated value (DC)     24.8 V       Perverse polarity protection     Yes; through internal protection with 7 A per group       Input current     30 mA       Output voltage     Power loss       Power loss     Power loss       Power loss     Power loss       Power loss     2.2 W       Poingtal outputs     Transistor	<ul> <li>FW update possible</li> </ul>	Yes	
• Isochronous mode       No         • Prioritized startup       Yes         Engineering with       V13 / V13         • STEP 7 TIA Portal 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       Ves         • DQ       Yes         • DQ       Yes         • DQ       Yes         • DQ with energy-saving function       No         • PROFINET from GSD version/GSD revision       V2.3 / -         Operating mode       Yes         • DQ       Yes         • DQ with energy-saving function       No         • PWM       No         • Oversampling       No         • MSO       Yes         Supply voltage       24 V         Permissible range, lower limit (DC)       28.8 V         Reverse polarity protection       Yes; through internal protection with 7 A per group         Input current       Current consumption, max.       30 mA         Output voltage       24 V         Power loss       1.15 W         Power loss       2.2 W         Digital outputs       Transistor	Product function		
• Prioritized startup     Yes       Engineering with	● I&M data	Yes; I&M0 to I&M3	
Engineering with       • STEP 7 TIA Portal configurable/integrated from version       V13 / V13         • 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          • DQ       Yes         • Oversampting       No         • MSO       Yes         Supply voltage          Rated value (DC)       24 V         permissible range, upper limit (DC)       28.8 V         Reverse polarity protection       Yes; through internal protection with 7 A per group         Input current       Current consumption, max.       30 mA         Output voltage           Rated value (DC)       24 V <td><ul> <li>Isochronous mode</li> </ul></td> <td>No</td>	<ul> <li>Isochronous mode</li> </ul>	No	
• STEP 7 TIA Portal configurable/integrated from version       V13 / V13         • 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       Ves         • DQ       Yes         • DQ with energy-saving function       No         • PWM       No         • Oversampling       No         • MSO       Yes         Supply voltage       Rated value (DC)         Permissible range, lower limit (DC)       19.2 V         permissible range, upper limit (DC)       28.8 V         Reverse polarity protection       Yes; through internal protection with 7 A per group         Input current       Current consumption, max.         Output voltage       30 mA         Rated value (DC)       24 V         Power loss       1.15 W         Power loss       1.15 W         Power loss, typ.       2.2 W         Digital outputs       Transistor	Prioritized startup	Yes	
version       V5:5 SP3 / -         • 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       •         • DQ       Yes         • DQ       Yes         • DQ       Yes         • DQ with energy-saving function       No         • PWM       No         • Oversampling       No         • MSO       Yes         Supply voltage       Rated value (DC)         Permissible range, lower limit (DC)       28.8 V         permissible range, upper limit (DC)       28.8 V         Reverse polarity protection       Yes; through internal protection with 7 A per group         Input current       Current consumption, max.       30 mA         Output voltage       Rated value (DC)       24 V         Power       24 V       Power loss         Power loss       Power loss       Power loss         Power loss       1.15 W       Power loss         Power loss       2.2 W       Digital outputs         Type of digital output       Transistor       Transistor	Engineering with		
PROFIBUS from GSD version/GSD revision     PROFINET from GSD version/GSD revision     V2.3 /-      Operating mode     V2.3 /-      Operating function     No     No     Oversampling     No     V2.3 /-      V2.4 V      Power loss /-      Power loss /      Power loss /		V13 / V13	
PROFINET from GSD version/GSD revision V2.3 /-      Operating mode         DQ         Yes         DQ         Vers         DQ         Vers         DQ         Vers         DQ         Vers         Oversampling         No         Oversampling         No         Oversampling         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 7 A per group     Input current     Current consumption, max.         30 mA     Output voltage     Rated value (DC)         24 V     Power     Power available from the backplane bus         1.15 W     Power loss     Power loss     typ.         2.2 W     Digital output     Transistor	<ul> <li>STEP 7 configurable/integrated from version</li> </ul>	V5.5 SP3 / -	
Operating mode       Yes         • DQ       Yes         DQ with energy-saving function       No         • PWM       No         • Oversampling       No         • MSO       Yes         Supply voltage       Yes         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 7 A per group         Input current       Current consumption, max.         Output voltage       24 V         Power       24 V         Power available from the backplane bus       1.15 W         Power loss       1.15 W         Power loss, typ.       2.2 W         Digital outputs       Transistor	<ul> <li>PROFIBUS from GSD version/GSD revision</li> </ul>	V1.0 / V5.1	
• DQ     Yes       • DQ with energy-saving function     No       • PWM     No       • Oversampling     No       • MSO     Yes       Supply voltage     Yes       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 7 A per group       Input current     Current consumption, max.       Output voltage     30 mA       Power     24 V       Power available from the backplane bus     1.15 W       Power loss     2.2 W       Digital outputs     Transistor	<ul> <li>PROFINET from GSD version/GSD revision</li> </ul>	V2.3 / -	
DQ with energy-saving function     PWM     No     Oversampling     No     Versampling     No     Versampling     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 7 A per group Input current Current consumption, max.     30 mA Output voltage Rated value (DC)     24 V Power Power Power available from the backplane bus     1.15 W Power loss Power loss, typ.     2.2 W Digital output     Transistor	Operating mode		
• PWMNo• OversamplingNo• MSOYesSupply voltageRated value (DC)24 Vpermissible range, lower limit (DC)19.2 Vpermissible range, upper limit (DC)28.8 VReverse polarity protectionYes; through internal protection with 7 A per groupInput currentCurrent consumption, max.Output voltageRated value (DC)24 VPower24 VPower lossPower loss, typ.2.2 WDigital outputTransistor	• DQ	Yes	
• OversamplingNo• MSOYesSupply voltageRated value (DC)24 Vpermissible range, lower limit (DC)19.2 Vpermissible range, upper limit (DC)28.8 VReverse polarity protectionYes; through internal protection with 7 A per groupInput currentCurrent consumption, max.30 mAOutput voltageRated value (DC)24 VPowerPower or svailable from the backplane bus1.15 WPower lossPower loss, typ.2.2 WDigital outputTransistor	<ul> <li>DQ with energy-saving function</li> </ul>	No	
• MSO     Yes        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 7 A per group       Input current     20 mA       Current consumption, max.     30 mA       Output voltage     24 V       Power     24 V       Power available from the backplane bus     1.15 W       Power loss, typ.     2.2 W       Digital outputs     Transistor	• PWM	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 7 A per group         Input current       30 mA         Output voltage       30 mA         Rated value (DC)       24 V         Power       24 V         Power available from the backplane bus       1.15 W         Power loss       2.2 W         Power loss, typ.       2.2 W         Digital outputs       Transistor	Oversampling	No	
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 7 A per group         Input current       0utput voltage         Rated value (DC)       24 V         Power       24 V         Power available from the backplane bus       1.15 W         Power loss, typ.       2.2 W         Digital outputs       Transistor	• MSO	Yes	
permissible range, lower limit (DC)       19.2 V         permissible range, upper limit (DC)       28.8 V         Reverse polarity protection       Yes; through internal protection with 7 A per group         Input current       Current consumption, max.         Current consumption, max.       30 mA         Output voltage       Power         Rated value (DC)       24 V         Power       1.15 W         Power loss       1.15 W         Power loss, typ.       2.2 W         Digital outputs       Transistor	Supply voltage		
permissible range, upper limit (DC)       28.8 V         Reverse polarity protection       Yes; through internal protection with 7 A per group         Input current       30 mA         Output voltage       30 mA         Rated value (DC)       24 V         Power       24 V         Power available from the backplane bus       1.15 W         Power loss       2.2 W         Digital outputs       Transistor	Rated value (DC)	24 V	
Reverse polarity protection       Yes; through internal protection with 7 A per group         Input current       30 mA         Output voltage       30 mA         Rated value (DC)       24 V         Power       24 V         Power available from the backplane bus       1.15 W         Power loss       2.2 W         Digital outputs       7         Type of digital output       Transistor	permissible range, lower limit (DC)	19.2 V	
Input current         Current consumption, max.       30 mA         Output voltage         Rated value (DC)       24 V         Power         Power available from the backplane bus       1.15 W         Power loss         Power loss, typ.       2.2 W         Digital outputs         Type of digital output       Transistor			
Current consumption, max.       30 mA         Output voltage       24 V         Rated value (DC)       24 V         Power       24 V         Power available from the backplane bus       1.15 W         Power loss       2.2 W         Digital outputs       7         Type of digital output       Transistor	Reverse polarity protection	Yes; through internal protection with 7 A per group	
Output voltage         Rated value (DC)       24 V         Power       1.15 W         Power loss       1.15 W         Power loss, typ.       2.2 W         Digital outputs       Transistor	Input current		
Rated value (DC)     24 V       Power     Power available from the backplane bus     1.15 W       Power loss     1.15 W       Power loss, typ.     2.2 W       Digital outputs     Transistor	Current consumption, max.	30 mA	
Power       Power available from the backplane bus     1.15 W       Power loss     2.2 W       Power loss, typ.     2.2 W       Digital outputs     Transistor	Output voltage		
Power available from the backplane bus     1.15 W       Power loss     2.2 W       Digital outputs     Transistor	Rated value (DC)	24 V	
Power loss       Power loss, typ.       2.2 W       Digital outputs       Type of digital output   Transistor	Power		
Power loss, typ.     2.2 W       Digital outputs     Transistor	Power available from the backplane bus	1.15 W	
Digital outputs       Type of digital output   Transistor	Power loss		
Type of digital output Transistor	Power loss, typ.	2.2 W	
	Digital outputs		
	Type of digital output	Transistor	
Number of digital outputs 16	Number of digital outputs	16	

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Current-sourcing	Yes
Digital outputs, parameterizable	No
Short-circuit protection	Yes
Response threshold, typ.	1 A
Limitation of inductive shutdown voltage to	L+ (-53 V)
Controlling a digital input	Yes
Switching capacity of the outputs	
<ul> <li>with resistive load, max.</li> </ul>	0.5 A
• on lamp load, max.	5 W
Load resistance range	
lower limit	48 Ω
upper limit	12 kΩ
Output voltage	
<ul> <li>for signal "1", min.</li> </ul>	L+ (-0.8 V)
Output current	
<ul> <li>for signal "1" rated value</li> </ul>	0.5 A
<ul> <li>for signal "1" permissible range, max.</li> </ul>	0.5 A
<ul> <li>for signal "0" residual current, max.</li> </ul>	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	
<ul> <li>for logic links</li> </ul>	Yes
<ul> <li>for uprating</li> </ul>	No
<ul> <li>for redundant control of a load</li> </ul>	Yes
Switching frequency	
<ul> <li>with resistive load, max.</li> </ul>	100 Hz
<ul> <li>with inductive load, max.</li> </ul>	0.5 Hz; According to IEC 60947-5-1, DC-13
<ul> <li>on lamp load, max.</li> </ul>	10 Hz
Total current of the outputs	
Current per channel, max.	0.5 A; see additional description in the manual
Current per group, max.	4 A; see additional description in the manual
Current per module, max.	8 A; see additional description in the manual
Cable length	
<ul> <li>shielded, max.</li> </ul>	1 000 m
• unshielded, max.	600 m
Interrupts/diagnostics/status information	
Diagnostics function	No
Substitute values connectable	No
Alarms	NU
Diagnostic alarm	No
Maintenance interrupt	No
Diagnoses	
Monitoring the supply voltage	No
Workdring the supply voltage     Wire-break	No
Short-circuit	No
	No
Group error	
Diagnostics indication LED     • RUN LED	Vos: groen LED
RON LED     ERROR LED	Yes; green LED Yes; red LED
Monitoring of the supply voltage (PWR-LED)     Channel status display	Yes; green LED
Channel status display     for channel diagnostics	Yes; green LED
for channel diagnostics	No
for module diagnostics	No
Potential separation	
Potential separation channels	
<ul> <li>between the channels</li> </ul>	No
<ul> <li>between the channels, in groups of</li> </ul>	8

<ul> <li>between the channels and backplane bus</li> </ul>	Yes	
Isolation		
Isolation tested with	707 V DC (type test)	
Standards, approvals, certificates		
Suitable for safety functions	No	
Suitable for safety-related tripping of standard modules	Yes; From FS02	
Highest safety class achievable for safety-related tripping of s	standard modules	
<ul> <li>Performance level according to ISO 13849-1</li> </ul>	PL d	
<ul> <li>Category according to ISO 13849-1</li> </ul>	Cat. 3	
<ul> <li>SILCL according to IEC 62061</li> </ul>	SILCL 2	
Ambient conditions		
Ambient temperature during operation		
<ul> <li>horizontal installation, min.</li> </ul>	-30 °C; from FS04	
<ul> <li>horizontal installation, max.</li> </ul>	60 °C	
<ul> <li>vertical installation, min.</li> </ul>	-30 °C; from FS04	
<ul> <li>vertical installation, max.</li> </ul>	40 °C	
Altitude during operation relating to sea level		
<ul> <li>Installation altitude above sea level, max.</li> </ul>	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual	
Dimensions		
Width	25 mm	
Height	147 mm	
Depth	129 mm	
Weights		
Weight, approx.	230 g	
Other		
Note:	Supplied incl. 40-pole push-in front connectors	
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