## **SIEMENS**

## Data sheet

## 6ES7522-1BL01-0AB0

SIMATIC S7-1500, Digital output module DQ 32x24 V DC/0.5A HF; 32 channels in groups of 8; 4 A per group; Single-channel diagnostics; Substitute value



General information		
Product type designation	DQ 32x24VDC/0.5A HF	
HW functional status	FS01	
Firmware version	V1.0.0	
Product function		
• I&M data	Yes; I&M0 to I&M3	
Engineering with		
<ul> <li>STEP 7 TIA Portal configurable/integrated as of version</li> </ul>	V13 SP1 / -	
<ul> <li>PROFIBUS as of GSD version/GSD revision</li> </ul>	V1.0 / V5.1	
<ul> <li>PROFINET as of GSD version/GSD revision</li> </ul>	V2.3 / -	
Operating mode		
• DQ	Yes	
<ul> <li>DQ with energy-saving function</li> </ul>	No	
• PWM	No	
Oversampling	No	
• MSO	Yes	
Supply voltage		

Current consumption, max.       60 mA         Output voltage       24 V         Rated value (DC)       24 V         Power       1.1 W	Rated value (DC)	24 V		
Reverse polarity protection         Yes: through internal protection with 7 A per group           Apple current         60 mA           Current consumption, max.         60 mA           Output voltage         24 V           Rated value (DC)         24 V           Power         1.1 W           Power loss.         5.0 W           Power loss.         5.0 W           Power loss. typ.         3.5 W           Power loss. typ.         3.5 W           Power loss.         9.0 W           Type of digital output         Transistor           Number of digital outputs         32           Current-sourcing         Yes: Olocked electronically           • Response threshold, typ.         1 A           Limitation of inductive shutdown voltage to         L+ (-63 V)           Controlling a digital input         Yes           • with resistive load, max.         0.5 A           • on lamp load, max.         0.5 A           • on lamp load, max.         0.5 A           • or signal "1", min.         48 Ω           • or signal "1", min.         0.5 A           • or signal "1", min.         0.5 A           • or signal "1" rated value         0.5 A           • or signal "1" rated value	permissible range, lower limit (DC)	20.4 V		
Action         Bit Mathematical Stress           Current consumption, max.         60 mA           Output voltage         Rated value (bC)         24 V           Power available from the backplane bus         1.1 W           Power loss         1.1 W           Power loss         90 ref loss (b)           Power loss, typ.         3.5 W           Olgital outputs         32           Current-sourcing         Yes           Short-circuit protection         Yes, Clocked electronically           • Response threshold, typ.         1.4           Limitation of inductive shutdown voltage to         1 + (-53 V)           Controlling a digital input         Yes           Switching capacity of the outputs         .05 A           • on lamp load, max.         0.5 A           • on lamp load, max.         0.5 A           • or signal "1", min.         L + (-0.8 V)           Output voltage	permissible range, upper limit (DC)	28.8 V		
Current consumption, max.         60 mA           Output voltage         Rated value (DC)         24 V           Power         24 V           Power available from the backplane bus         1.1 W           Power loss         1.1 W           Power loss         50 W           Power loss         1.1 W           Power loss         1.1 W           Power loss, typ.         3.5 W           Digital outputs         Transistor           Number of digital outputs         32           Current-sourcing         Yes           Short-circuit protection         Yes (Ockede electronically           • Response threshold, typ.         1.4           Limitation of inductive shutdown voltage to         L+ (-53 V)           Controlling a digital input         Yes           Switching capacity of the outputs         .           • In tamp load, max.         0.5 A           • on lamp load, max.         5 W           Load resistance range         .           • lower limit         42 k2           • lower limit         5 M           Output voltage         .           • or signal "1", min.         L+ (-0.8 V)           Output current         .	Reverse polarity protection	Yes; through internal protection with 7 A per group		
Acted value (DC)         24 V           Rated value (DC)         24 V           Power         1.1 W           Power loss         1.1 W           Power loss         3.5 W           Power loss, typ.         3.5 W           Digital outputs         7000000000000000000000000000000000000	Input current			
Rated value (DC)     24 V       Power     Power valiable from the backplane bus     1.1 W       Power loss     1.1 W       Power loss     S5 W       Digital outputs     3.5 W       Digital outputs     32       Current-sourcing     Yes       Short-circuit protection     Yes; Clocked electronically       • Response threshold, typ.     1 A       Limitation of inductive shutdown voltage to     L+ (-53 V)       Controlling a digital input     Yes       Switching capacity of the outputs     5 W       Load resistance range	Current consumption, max.	60 mA		
Rated value (DC)     24 V       Power     Power valiable from the backplane bus     1.1 W       Power loss     1.1 W       Power loss     S5 W       Digital outputs     3.5 W       Digital outputs     32       Current-sourcing     Yes       Short-circuit protection     Yes; Clocked electronically       • Response threshold, typ.     1 A       Limitation of inductive shutdown voltage to     L+ (-53 V)       Controlling a digital input     Yes       Switching capacity of the outputs     5 W       Load resistance range				
Power         state           Power available from the backplane bus         1.1 W           Power loss         .           Power loss, typ.         3.5 W           Digital outputs         32           Type of digital outputs         32           Current-sourcing         Yes.           Short-circuit protection         Yes.           Response threshold, typ.         1 A           Limitation of inductive shuddown voltage to         L+ (-53 V)           Controlling a digital input         Yes           Switching capacity of the outputs         .           • with resistive load, max.         0.5 A           • on lamp load, max.         5 W           Load resistance range         .           • for signal "1", min.         L+ (-0.8 V)           Output current         .           • for signal "1", min.         0.5 A           • for signal "1" premissible range, max.         0.5 A           • for signal "1" premissible range, max.         0.5 M           • for signal "1" premissible range, max.         0.5 A           • for signal "1" premissible range, max.         0.5 M           • for signal "1" premissible range, max.         0.5 mA           Output delay with resistive load         .		24 V		
Power valiable from the backplane bus       1.1 W         Power loss       3.5 W         Power loss, typ.       3.5 W         Digital outputs       Transistor         Type of digital outputs       32         Current-sourcing       Yes         Short-circuit protection       Yes; Clocked electronically         Response threshold, typ.       1.4         Limitation of inductive shutdown voltage to       L+ (-53 V)         Controlling a digital input       Yes         Switching capacity of the outputs       .         • with resistive load, max.       0.5 A         • on lamp load, max.       5 W         Load resistance range       .         • lower limit       48 Ω         • upper limit       12 kΩ         Output voltage       .         • for signal "1", min.       L+ (-0.8 V)         Output voltage       .         • for signal "1" permissible range, max.       0.5 A         • for signal "1" permissible range, max.       0.5 M         Output delay with resistive load       .         • for signal "1" permissible range, max.       0.5 mA         Output delay with resistive load       .         • for signal "1" permissible range, max.       0.5 mA				
Power loss           Power loss, typ.         3.5 W           Digital outputs         Transistor           Number of digital outputs         32           Current-sourcing         Yes           Short-circuit protection         Yes; Clocked electronically           • Response threshold, typ.         1 A           Limitation of inductive shutdown voltage to         L+ (-53 V)           Controlling a digital input         Yes           Switching capacity of the outputs         5 W           • on lamp load, max.         0.5 A           • on lamp load, max.         5 W           Load resistance range            • lower limit         48 Ω           • upper limit         0.5 A           Output voltage            • for signal "1", min.         L+ (-0.8 V)           Output voltage            • for signal "1", min.         0.5 A           • for signal "1" rated value         0.5 A           • for signal "1" rated value         0.5 A           • for signal "1" residual current, max.         0.5 M           Output delay with resistive load         .5 M           Output delay with resistive load         .5 M           • for signal "1" renx.         .5 00	Power			
Power loss, typ.     3.5 W       Digital outputs     Transistor       Type of digital outputs     32       Current-sourcing     Yes       Short-circuit protection     Yes       Short-circuit protection     Yes       Controlling a digital input     Yes       Controlling a digital input     Yes       Switching capacity of the outputs     L+ (-53 V)       Controlling a digital input     Yes       Switching capacity of the outputs     0.5 A       • with resistive load, max.     5 W       Load resistance range     0.5 A       • lower limit     48 Ω       • oupper limit     12 kΩ       Output outgae     .       • for signal "1", min.     L+ (-6.8 V)       Output current     .       • for signal "1", min.     L+ (-6.8 V)       Output dage     .       • for signal "1", min.     L+ (-0.8 V)       Output dage     .       • for signal "1", min.     L+ (-0.8 V)       Output dage     .       • for signal "1", max.     0.5 A       • for signal "1", max.     0.5 A       • for signal "1", max.     0.5 M       Output dage with resistive load     .       • for signal "1", max.     500 μs       Parallel switching of two outputs <td>Power available from the backplane bus</td> <td>1.1 W</td>	Power available from the backplane bus	1.1 W		
Digital outputs           Type of digital output         Transistor           Number of digital outputs         32           Current-sourcing         Yes           Short-circuit protection         Yes; Clocked electronically           • Response threshold, typ.         1 A           Limitation of inductive shutdown voltage to         L+ (-53 V)           Controlling a digital input         Yes           Switching capacity of the outputs         Ves           • with resistive load, max.         0.5 A           • on lamp load, max.         5 W           Load resistance range         I a 2 kΩ           • lower limit         48 Ω           • upper limit         12 kΩ           Output voltage         .           • for signal "1", min.         L+ (-0.8 V)           Output current         .           • for signal "1" permissible range, max.         0.5 A           • for signal "1" permissible range, max.         0.5 A           • for signal "1" permissible range, max.         0.5 M           • for signal "0" residual current, max.         0.5 M           • for signal "0" residual current, max.         0.5 M           • for signal "0" residual current, max.         50 mA           Output delay with resistive load </td <td>Power loss</td> <td></td>	Power loss			
Type of digital output     Transistor       Number of digital outputs     32       Current-sourcing     Yes       Short-circuit protection     Yes; Clocked electronically       • Response threshold, typ.     1 A       Limitation of inductive shutdown voltage to     L + (-53 V)       Controlling a digital input     Yes       Switching capacity of the outputs     Ves       • with resistive load, max.     0.5 A       • on lamp load, max.     5 W       Load resistance range     Ves       • lower limit     48 Ω       • upper limit     12 kΩ       Output voltage     0.5 A       • for signal "1", min.     L + (-0.8 V)       Output current     0.5 A       • for signal "1", min.     0.5 A       • for signal "1", max.     0.5 mA       • for signal "1", max.     0.5 mA       • for signal "1", max.     0.5 mA       • for signal "0" residual current, max.     0.5 mA       • for signal "0" residual current, max.     0.5 mA       • for logic links     Yes       • for logic links     Yes       • for logic links     No       • for logic links     Yes	Power loss, typ.	3.5 W		
Type of digital output     Transistor       Number of digital outputs     32       Current-sourcing     Yes       Short-circuit protection     Yes; Clocked electronically       • Response threshold, typ.     1 A       Limitation of inductive shutdown voltage to     L + (-53 V)       Controlling a digital input     Yes       Switching capacity of the outputs     Ves       • with resistive load, max.     0.5 A       • on lamp load, max.     5 W       Load resistance range     Ves       • lower limit     48 Ω       • upper limit     12 kΩ       Output voltage     0.5 A       • for signal "1", min.     L + (-0.8 V)       Output current     0.5 A       • for signal "1", min.     0.5 A       • for signal "1", max.     0.5 mA       • for signal "1", max.     0.5 mA       • for signal "1", max.     0.5 mA       • for signal "0" residual current, max.     0.5 mA       • for signal "0" residual current, max.     0.5 mA       • for logic links     Yes       • for logic links     Yes       • for logic links     No       • for logic links     Yes				
Number of digital outputs32Current-sourcingYesShort-circuit protectionYes; Clocked electronically• Response threshold, typ.1 ALimitation of inductive shutdown voltage toL+ (-53 V)Controlling a digital inputYesSwitching capacity of the outputs-• with resistive load, max.0.5 A• on lamp load, max.0.5 A• lower limit48 Ω• upper limit12 kΩOutput voltage-• for signal "1", min.L+ (-0.8 V)Output voltage-• for signal "1" permissible range, max.0.5 A• for signal "1" permissible range, max.0.5 M• for signal "1" permissible range, max.0.5 M• for signal "1" permissible range, max.0.5 M• for signal "1" rated value0.5 M• for signal "1" permissible range, max.0.5 M• for logic linksYes <t< td=""><td></td><td>Transistor</td></t<>		Transistor		
Current-sourcingYesShort-circuit protectionYes, Clocked electronically• Response threshold, typ.1 ALimitation of inductive shutdown voltage toL+ (-53 V)Controlling a digital inputYesSwitching capacity of the outputs				
Short-circuit potetion         Yes; Clocked electronically           • Response threshold, typ.         1 A           Limitation of inductive shutdown voltage to         L+ (-53 V)           Controlling a digital input         Yes           Switching capacity of the outputs         Yes           • with resistive load, max.         0.5 A           • on lamp load, max.         5 W           Load resistance range         12 kΩ           • lower limit         48 Ω           • upper limit         12 kΩ           Output voltage            • for signal "1", min.         L+ (-0.8 V)           Output current         0.5 A           • for signal "1" rated value         0.5 A           • for signal "1" rated value         0.5 A           • for signal "1" repersibile range, max.         0.5 A           • for signal "1" repersibile range, max.         0.5 mA           Output delay with resistive load            • "0" to "1", max.         100 µs           • "0" to "1", max.         500 µs           Parallel switching of two outputs            • for logic links         Yes           • for logic links         Yes           • for uprating         No      • for wou				
• Response threshold, typ.1 ALimitation of inductive shutdown voltage toL+ (-53 V)Controlling a digital inputYesSwitching capacity of the outputs0.5 A• on lamp load, max.0.5 A• on lamp load, max.5 WLoad resistance range12 kQ• lower limit48 Ω• upper limit12 kQOutput voltageL+ (-0.8 V)Output current0.5 A• for signal "1" rated value0.5 A• for signal "1" remissible range, max.0.5 M• for signal "1" max.500 µs• for logic linksYes• for logic linksNo• for upratingNo• for upratingNo• for redundant control of a loadYes				
Limitation of inductive shutdown voltage toL+ (-53 V)Controlling a digital inputYesSwitching capacity of the outputs0.5 A• with resistive load, max.5 WLoad resistance range5 W• lower limit48 Ω• upper limit12 kΩOutput voltageL+ (-0.8 V)• or signal "1", min.L+ (-0.8 V)Output current0.5 A• for signal "1" permissible range, max.0.5 MOutput delay with resistive load0.5 mAOutput delay with resistive load100 μs• "0" to "1", max.500 μsParallel switching of two outputsYes• for logic linksYes• for logic linksYes• for edundant control of a loadYes				
Controlling a digital inputYesSwitching capacity of the outputs0.5 A• with resistive load, max.0.5 A• on lamp load, max.5 WLoad resistance range48 Ω• lower limit12 kΩ• lower limit12 kΩOutput voltage• for signal "1", min.L + (-0.8 V)Output current0.5 A• for signal "1" rated value0.5 A• for signal "1" permissible range, max.0.5 A• for signal "0" residual current, max.0.5 A• for signal "0" residual current, max.0.5 mAOutput delay with resistive load500 μsParallel switching of two outputs500 μsParallel switching of two outputsYes• for logic linksYes• for logic linksYes• for redundant control of a loadYes		L+ (-53 V)		
• with resistive load, max.0.5 A• on lamp load, max.5 WLoad resistance range• lower limit48 Ω• upper limit12 kΩOutput voltage• for signal "1", min.L+ (-0.8 V)Output current• for signal "1" rated value0.5 A• for signal "1" rated value0.5 A• for signal "1" permissible range, max.0.5 A• for signal "0" residual current, max.0.5 mAOutput delay with resistive load500 μs• "0" to "1", max.500 μs• for logic links500 μs• for logic linksYes• for logic linksYes• for redundant control of a loadYes	Controlling a digital input			
Instruction of each matrix• on lamp load, max.5 WLoad resistance range• lower limit48 Ω• upper limit12 kΩOutput voltage• for signal "1", min.L+ (-0.8 V)Output current• for signal "1" rated value0.5 A• for signal "1" permissible range, max.0.5 A• for signal "0" residual current, max.0.5 mAOutput delay with resistive load• "0" to "1", max.100 μs• "1" to "0", max.500 μsParallel switching of two outputs• for logic linksYes• for redundant control of a loadYes	Switching capacity of the outputs			
Load resistance range         • lower limit       48 Ω         • upper limit       12 kΩ         Output voltage          • for signal "1", min.       L + (-0.8 V)         Output current          • for signal "1" rated value       0.5 A         • for signal "1" permissible range, max.       0.5 mA         • 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       Yes         • for logic links       Yes         • for redundant control of a load       Yes	• with resistive load, max.	0.5 A		
• lower limit48 Ω• upper limit12 kΩOutput voltage• for signal "1", min.L+ (-0.8 V)Output current0.5 A• for signal "1" permissible range, max.0.5 A• for signal "0" residual current, max.0.5 M• for signal "0" residual current, max.0.5 mAOutput delay with resistive load100 μs• "1" to "0", max.500 μs• Parallel switching of two outputsYes• for logic linksYes• for upratingNo• for redundant control of a loadYes	<ul> <li>on lamp load, max.</li> </ul>	5 W		
• upper limit12 kΩ• upper limit12 kΩOutput voltagek + (-0.8 V)• for signal "1" nin.k + (-0.8 V)Output current0.5 A• for signal "1" permissible range, max.0.5 A• for signal "0" residual current, max.0.5 mAOutput delay with resistive load0.5 mA• "0" to "1", max.100 µs• "1" to "0", max.500 µsParallel switching of two outputsYes• for logic linksYes• for upratingNo• for upratingYes	Load resistance range			
Output voltage• for signal "1", min.L+ (-0.8 V)Output current0.5 A• for signal "1" rated value0.5 A• for signal "1" permissible range, max.0.5 A• for signal "0" residual current, max.0.5 mAOutput delay with resistive load100 µs• "0" to "1", max.500 µs• "1" to "0", max.500 µsParallel switching of two outputsYes• for logic linksYes• for upratingNo• for redundant control of a loadYes	lower limit	48 Ω		
• for signal "1", min.L+ (-0.8 V)Output current0.5 A• for signal "1" rated value0.5 A• for signal "1" permissible range, max.0.5 A• for signal "0" residual current, max.0.5 mAOutput delay with resistive load100 μs• "0" to "1", max.500 μs• "1" to "0", max.500 μsParallel switching of two outputsYes• for logic linksNo• for upratingNo• for redundant control of a loadYes	• upper limit	12 kΩ		
Output current• for signal "1" rated value0.5 A• for signal "1" permissible range, max.0.5 A• for signal "0" residual current, max.0.5 mAOutput delay with resistive load0.5 mA• "0" to "1", max.100 µs• "0" to "1", max.500 µsParallel switching of two outputsYes• for logic linksNo• for upratingNo• for redundant control of a loadYes	Output voltage			
• for signal "1" rated value0.5 A• for signal "1" permissible range, max.0.5 A• for signal "0" residual current, max.0.5 mAOutput delay with resistive load100 μs• "0" to "1", max.100 μs• "1" to "0", max.500 μsParallel switching of two outputsYes• for logic linksNo• for upratingNo• for redundant control of a loadYes	● for signal "1", min.	L+ (-0.8 V)		
oo• for signal "1" permissible range, max.0.5 A• for signal "0" residual current, max.0.5 mAOutput delay with resistive load100 μs• "0" to "1", max.100 μs• 1" to "0", max.500 μsParallel switching of two outputsYes• for logic linksNo• for upratingNo• for redundant control of a loadYes	Output current			
• for signal "0" residual current, max.0.5 mAOutput delay with resistive load100 μs• "0" to "1", max.100 μs• "1" to "0", max.500 μsParallel switching of two outputsYes• for logic linksYes• for upratingNo• for redundant control of a loadYes	<ul> <li>for signal "1" rated value</li> </ul>	0.5 A		
Output delay with resistive load       • "0" to "1", max.       • "0" to "0", max.       500 µs       Parallel switching of two outputs       • for logic links     Yes       • for uprating     No       • for redundant control of a load     Yes	<ul> <li>for signal "1" permissible range, max.</li> </ul>	0.5 A		
• "0" to "1", max.100 μs• "1" to "0", max.500 μsParallel switching of two outputsYes• for logic linksNo• for upratingYes• for redundant control of a loadYes	<ul> <li>for signal "0" residual current, max.</li> </ul>	0.5 mA		
• "1" to "0", max.500 μsParallel switching of two outputsYes• for logic linksNo• for upratingNo• for redundant control of a loadYes	Output delay with resistive load			
Parallel switching of two outputs       • for logic links     Yes       • for uprating     No       • for redundant control of a load     Yes	• "0" to "1", max.	100 µs		
• for logic linksYes• for upratingNo• for redundant control of a loadYes	• "1" to "0", max.	500 µs		
for uprating     for redundant control of a load     Yes	Parallel switching of two outputs			
• for redundant control of a load Yes	• for logic links	Yes		
	• for uprating	No		
Switching frequency	<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	
• on lamp load, max.	10 Hz	
Total current of the outputs		
<ul> <li>Current per channel, max.</li> </ul>	0.5 A; see additional description in the manual	
<ul> <li>Current per group, max.</li> </ul>	4 A; see additional description in the manual	
• Current per module, max.	16 A; see additional description in the manual	
Cable length		
• shielded, max.	1 000 m	
• unshielded, max.	600 m	
Isochronous mode		
Isochronous operation (application synchronized up to terminal)	Yes	
Execution and activation time (TCO), min.	70 µs	
Bus cycle time (TDP), min.	250 µs	
Interrupts/diagnostics/status information		
Diagnostics function	Yes	
Substitute values connectable	Yes	
Alarms		
Diagnostic alarm	Yes	
Diagnostic messages		
<ul> <li>Monitoring the supply voltage</li> </ul>	Yes	
• Wire-break	Yes	
Short-circuit	Yes	
Group error	Yes	
Diagnostics indication LED		
• RUN LED	Yes; Green LED	
• ERROR LED	Yes; Red LED	
<ul> <li>Monitoring of the supply voltage (PWR-LED)</li> </ul>	Yes; Green LED	
<ul> <li>Channel status display</li> </ul>	Yes; Green LED	
<ul> <li>for channel diagnostics</li> </ul>	Yes; Red LED	
<ul> <li>for module diagnostics</li> </ul>	Yes; Red LED	
Potential separation		
Potential separation channels		
• between the channels	No	
• between the channels, in groups of	8	
<ul> <li>between the channels and backplane bus</li> </ul>	Yes	
Isolation		
Isolation tested with	707 V DC (type test)	
Decentralized operation		

Prioritized startup	Yes	
Dimensions		
Width	35 mm	
Height	147 mm	
Depth	129 mm	
Weights		
Weight, approx.	280 g	

last modified:

01/29/2018