6ES7522-1BP00-0AA0

Data sheet



SIMATIC S7-1500, digital output module, DQ 64xDC 24V/0,3A BA, 64 channels in groups of 16, 2 A per group at 60 °C, sinking output, 35 mm wide, the module supports the safety-oriented shutdown of load groups up to SIL2 according to EN IEC 62061:2021 and Category 3 / PL d according to EN ISO 13849-1:2015. cables and terminal blocks to be ordered separately as accessories

General information	
Product type designation	DQ 64x24VDC/0.3A BA
HW functional status	From FS01
Firmware version	V1.0.0
FW update possible	Yes
Product function	
I&M data	Yes; I&M0 to I&M3
 Isochronous mode 	No
Prioritized startup	No
Engineering with	
 STEP 7 TIA Portal configurable/integrated from version 	V16 with HSP 0319 / V17
 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 	V2.35 / -
Operating mode	
• DQ	Yes
 DQ with energy-saving function 	No
• PWM	No
 Cam control (switching at comparison values) 	No
Oversampling	No
• MSO	Yes
 Integrated operating cycle counter 	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
external protection for power supply lines (recommendation)	24 V DC/6 A miniature circuit breaker with type B tripping characteristic
Input current	
Current consumption, max.	90 mA; without load
output voltage / header	
Rated value (DC)	24 V
Power	
Power available from the backplane bus	0.6 W
Power loss	
Power loss, typ.	3.5 W
Digital outputs	
Type of digital output	Transistor
Number of digital outputs	64
Current-sinking	No

Digital outputs, parameterizative No	Ourse at a sure in a	V
Short-road protection Yes	Current-sourcing Digital outputs parameterizable	Yes
Limitation of Inductive shutchow notingle to Ves		
Controlling a digital injust Yes Switching a gapacity of the outputs 0.3 A • on hame load, max. 5 W Load resistance range • Output Profit 0.0 Ω • upper limit 10 No Output Voltage • For signal ***, min. L + (-0.8 V) • For signal ***, min. L + (-0.8 V) Output courset. • For signal ***, min. L + (-0.8 V) • For signal ***, min. L + (-0.8 V) Output courset. • For signal ***, min. L + (-0.8 V) • For signal ***, min. L + (-0.8 V) Output class year in sessible load. A • For signal *** *** *** *** *** *** *** *** *** *		
Switching casealty of the colubus • with resistive load, max. 5 V • load resistance range • load resistance range • load resistance range • load resistance range • for signal "1", min. ↓ + (-0.8 V) • for signal "1" rated value 0.3 A • for signal "1" permissible range, max. 0.3 A • for signal "1" permissible range, max. 0.5 mA • for signal "1" rated value 0.5 mA • for signal "1" permissible range, max. 0.5 mA • for signal "1" permissible range, max. 0.5 mA • for signal "1" permissible range, max. 0.5 mA • for signal "1" permissible range, max. 0.5 mA • for signal "1" permissible range, max. 0.5 mA • for signal "1" permissible range, max. 0.5 mA • "1" to 1" max \$00 µs • "1" to 1" max \$00 µs • "1" to 1" max \$00 µs • for logic links Yes		
• with resistive load, max		Yes
		0.0 A
Load resistance range		
Couper limit		5 W
• upper limit 10 kΩ Output Votages • or signal "1", min. L+ (-0.8 V) • for signal "1" permissible range, max. 0.3 A • for signal "1" permissible range, max. 0.3 A • of signal "1" permissible range, max. 0.5 mA • O'to 1", max. 100 µs • "0" to 1", max. 600 µs • For uparting No • for uparting of two outputs • versecond of the second		00.0
Output veotage • for signal "1" min. L+ (-0.8 V) Output current • for signal "1" rated value 0.3 A • for signal "1" pemissible range, max. 0.5 mA • for signal "0" residual current, max. 0.5 mA Output clealy with resistive load • "0" to "1", max. 100 μs • "1" to "0", max. 500 μs 2 For logic links Yes • for redundant control of a load Yes Swatching frequency • with resistive load, max. • with resistive load, max. 10 Hz • with resistive load, max. 10 Hz • current per channel, max. 0.5 Hz, According to IEC 60947-5-1, DC-13 • current per per channel, max. 2.4 • Current per per quo, max. 2.A • Current per group, max. 8.A • Current per strainelion 9.0		
• for signal *1*, min. L+ (-0.8 V)		10 ΚΩ
Output current of or signal "1" permissible range, max. 0.3 A • for signal "1" permissible range, max. 0.5 mA Output delay with resistive load • "1" to "0", max. 100 μs • "1" to "0", max. 500 μs = "1" to "0", max. 500 μs = Faraltel switching of two outputs Ves • for logic links Yes • for uprating No • for redundant control of a load Yes • for redundant control of a load Yes • with resistive load, max. 0.5 Hz; According to IEC 60947-5-1, DC-13 • with inductive load, max. 0.5 Hz; According to IEC 60947-5-1, DC-13 • or lamp load, max. 0.5 Hz; According to IEC 60947-5-1, DC-13 • current per channel, max. 0.3 A • Current per module, max. 2.A • Current per module, max. 3.A • Current per module, max. 3.A • Purp to 60°C, max. 3.A • Vertical installation — up to 40°C, max. • shielded, max. 600 m • or up to 40°C, max. 600 m • Shotelded, max. 600 m	· · ·	1(00)
for signal "1" rated value 0.3 A		L+ (-0.8 V)
	·	0.0 A
• for signal "0" residual current, max. Output delay with resistive load • "0" to "1", max. • 1" to "0", max. 500 µs Parallel switching of two outputs • for logic links • for logic links • for logic links • for resultant control of a load Yes Switching frequency • with resistive load, max. • with inductive load, max. • with inductive load, max. • on lamp load, max. • on lamp load, max. • Current per channel, max. • Current per channel, max. • Current per channel, max. • Current per broaule, max. • Current per broaule, max. • Current per module, max. • Current per module, max. • Sa A • Current per module, max. • University load, max. •		
Output delay with resistive load • "0" to 1", max. • "1" to 7", max. • "1" to 7", max. • for logic links • for uprating • for logic links • for uprating • for redundant control of a load • Yes Switching frequency • with resistive load, max. • with inductive load, max. • with inductive load, max. • on lamp load, max. • O.5 Hz; According to IEC 60947-5-1, DC-13 • on lamp load, max. • O.5 Hz; According to IEC 60947-5-1, DC-13 • O.5 Hz; Acco		
• "0" to "1", max. 500 μs • "1" to "0", max. 500 μs Parallel switching of two outputs • for logic links 7 yes 7		U.5 mA
e "1" to "0", max. 500 µs Parallel switching of two outputs • for logic links • for uprating • for redundant control of a load • yes Switching frequency • with resistive load, max. 100 Hz • with inductive load, max. 0.5 Hz, According to IEC 60947-5-1, DC-13 • on lamp load, max. 101 Hz Total current of the outputs • Current per group, max. 2.A • Current per group, max. 2.A • Current per group, max. 8.A Total current of the outputs (per module) horizontal installation — up to 60 °C, max. 8.A **Cable length • shielded, max. 1000 m • un shielded, max. 6000 m • un shielded, max. 6000 m • unshielded, max. 6000 m • unshielded, max. 1000 m • unshielded, max. 6000 m • Unspostics function **Diagnostics function **Diagnostics function **Diagnostics function **Diagnostics alarm • Maintenance interrupt **Diagnostic alarm • Maintenance interrupt **Ohingtonight e supply voltage • Microbricuit • Short-circuit • No **Diagnostics indication LED • ERROR LED • Pas, vie, vie, vie, vie, vie, vie, vie, vie	•	400
Parallel switching of two outputs if for logic links		
• for logic links • for uprating • for uprating • for redundant control of a load Switching frequency • with resistive load, max. • on lamp load, max. • Current per channel, max. • Current per group, max. • Current per group, max. • Current per group, max. • Current per module, max. • Current of the outputs (per module) horizontal installation — up to 60 °C, max. • 8 A Cable length • shielded, max. • shielded, max. • shielded, max. • shielded, max. • olion matter installation — up to 40 °C, max. • 8 A Cable length • shielded, max. • food on Substitute values connectable No No Substitute values connectable No Alamns • Diagnostics function Monitoring the supply voltage • No Wire-break • Short-circuit • No Signer sind cation LED • FROR LED • RENOR LED • RENOR LED • Monitoring of the supply voltage (PWR-LED) • Monitoring of the supply voltage (PWR-LED) • Channel slatus display • For enable diagnostics • No Monitoring of the supply voltage (PWR-LED) • Channel slatus display • For enable diagnostics • No For module diagnostics • No For module diagnostics • No For incoule diagnostics • No For module diagnostics • No For module diagnostics • No For module diagnostics • No		500 µs
• for uprating • for redundant control of a load • for redundant control of a load • Yes Switching frequency • with resistive load, max. • on lamp load, max. • Ourrent of the outputs • Current per channel, max. • Current per module, max. • Sa • Current per module, max. • BA • Sa • Current per module, max. • BA • Sa • Current per module, max. • BA • Sa •	·	N/
• for redundant control of a load Switching frequency • with resistive load, max. • on lamp load, max. • on lamp load, max. • On lamp load, max. • Courrent per channel, max. • Current per proup, max. • Current per group, max. • Current per module, max. • Current per module, max. • Current per module, max. • Current per of the outputs (per module) **Total current of the outputs (per module) **Total current of the outputs (per module) **Doi: Courrent per module, max. • Current per module, max. • Current per group, max. • Cable for the outputs (per module) **Total current of the outputs (per module) **Doi: Courrent per module, max. • A A **Cable length **Sa A **Cable length **Shielded, max. • I 1000 m • shielded, max. • on the module, max. • On the module of max. • Sa A **Cable length **Shielded, max. • On the module of max. • Diagnostics function No **Maintenance interrupt No Diagnostics indication LED **ERROR LED **Maint LED **Maint LED **Maint LED **Maint LED **ERROR LED **Maint LED **M	-	
Switching frequency • with resistive load, max. • of hamp load, max. • of hamp load, max. • of hamp load, max. • O.5 Hz; According to IEC 60947-5-1, DC-13 • of hamp load, max. • Ourrent per channel, max. • Current per group, max. • Current per group max. • Current per module, max. 7 Oal current of the outputs (per module) Horizontal installation — up to 60 °C, max. • 8 A Cable length • shielded, max. • of one max. module diagnostics.		
with resistive load, max. with inductive load, max. on lamp load, max. on lamp load, max. on lamp load, max. on lamp load, max. ourrent per channel, max. ourrent per group, max. ourrent per group, max. ourrent per module, max. ourrent per module, max. ourrent per module, max. ourrent per module, max. ourrent per module, max. ourrent per module, max. ourrent per module, max. ourrent of the outputs (per module) horizontal installation		Yes
with inductive load, max. on lamp load, max. 10 Hz Total current of the outputs Current per channel, max. Current per group, max. Current per group, max. Current per module, max. S A Cable length up to 60 °C, max. S A Cable length Shielded, max. Sunshielded,		
on lamp load, max. Total current of the outputs Current per channel, max.		
Total current of the outputs • Current per channel, max. • Current per group, max. • Current per module, max. • Current per module, max. * Current per module, max. * Total current of the outputs (per module) * Horizontal installation - up to 60 °C, max. - up to 60 °C, max. • 8 A * Cable length • Shielded, max. • unshielded, max. • unshielded, max. • unshielded, max. • unshielded, max. • soon • unshielded, max. • on the current of the outputs information **No** * Substitute values connectable * No * Alarms • Diagnostics alarm • Maintenance interrupt • Monitoring the supply voltage • Wire-break • Short-circuit • Short-circuit • Group error • RUN LED • RENCR LED • MAINT LED • MAINT LED • MAINT LED • Monitoring of the supply voltage (PWR-LED) • Kes; via SIMATIC TOP connect connection module • Channel status display • for channel diagnostics • for module diagnostics No • for module diagnostics No No No No * SIMATIC TOP connect connection module • for module diagnostics • No No * Corment aliagnostics • No * No * Corment aliagnostics • No * No * Corment aliagnostics • No * Or module diagnostics • No * No * Or module diagnostics • No * No * Or module diagnostics • No * Or module diagnostics • No * No * Or module diagnostics • No * No * No * No * No * No * Simplified the supply voltage (PWR-LED) • Yes; via SIMATIC TOP connect connection module • for module diagnostics • No * N		
Current per channel, max. Current per group, max. Current per group, max. Current per module, max. Current per module, max. A A Total current of the outputs (per module) horizontal installation — up to 60 °C, max. A A vertical installation — up to 40 °C, max. A A Sa A Cable length A Sa A Cable length A Sielded, max. A Si	·	10 Hz
• Current per group, max. • Current per module, max. 7otal current of the outputs (per module) horizontal installation —up to 60 °C, max. 8 A vertical installation —up to 40 °C, max. 8 A Cable length • shielded, max. • one max. • Diagnostics/status information No • No • Maintenance interrupt • Maintenance interrupt • Monitoring the supply voltage • Wire-break • Short-circuit • No • Monitoring the supply voltage • Wire-break • Short-circuit • No • Monitoring the supply voltage (PWR-LED) • FRROR LED • ERROR LED • MAINT LED • Monitoring of the supply voltage (PWR-LED) • Yes; green LED • Channel status display • for channel diagnostics • for module diagnostics		
Current per module, max. Fotal current of the outputs (per module) horizontal installation — up to 60 °C, max. 8 A vertical installation — up to 40 °C, max. 8 A Cable length • shielded, max. • unshielded, max. • No Substitute values connectable No No Substitute values connectable No • Maintenance interrupt No Diagnoses • Monitoring the supply voltage • No • Wire-break • Short-circuit • No • Short-circuit • Croup error No Diagnostics indication LED • RUN LED • ERROR LED • MAINT LED • MAINT LED • MAINT LED • MAINT LED • Monitoring of the supply voltage (PWR-LED) • Monitoring of the supply voltage (PWR-LED) • Yes; red LED • MAINT LED • Channel status display • For channel diagnostics • No • for module diagnostics • No	•	
Total current of the outputs (per module) horizontal installation		
horizontal installation — up to 60 °C, max. 8 A vertical installation — up to 40 °C, max. 8 A Cable length • shielded, max. 1000 m • unshielded, max. 600 m **terrupts/diagnostics/status information** Diagnostics function No Substitute values connectable No Alarms • Diagnostic alarm • Maintenance interrupt No Diagnoses • Monitoring the supply voltage No • Wire-break No • Short-circuit • Group error No Diagnostics indication LED • RUN LED • RUN LED • RUN LED • MAINT LED • MAINT LED • Monitoring of the supply voltage (PWR-LED) • Monitoring of the supply voltage (PWR-LED) • Channel status display • for channel diagnostics No • for module diagnostics No		8 A
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vertical installation — up to 40 °C, max. 8 A Cable length • shielded, max. • unshielded, max. • Diagnostics function Substitute values connectable No Alarms • Diagnostic alarm • Diagnostic alarm • Mo • Maintenance interrupt No Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit • Short-circuit • Group error No Diagnostics indication LED • RUN LED • RUN LED • ERROR LED • MAINT LED • Monitoring of the supply voltage (PWR-LED) • Monitoring of the supply voltage (PWR-LED) • Monitoring of the supply voltage (PWR-LED) • Channel status display • for channel diagnostics • for module diagnostics		
— up to 40 °C, max. 8 A Cable length • shielded, max. 1000 m • unshielded, max. 600 m **No Substitute values connectable **Diagnostics function **Diagnostic alarm • Mo • Maintenance interrupt **ONO **Diagnoses • Monitoring the supply voltage • Monitoring the supply voltage **Short-circuit • Short-circuit • Group error **Diagnostics indication LED **ERROR LED • ERROR LED • MAINT LED • Monitoring of the supply voltage (PWR-LED) • Monitoring of the supply voltage (PWR-LED) • Channel status display • for channel diagnostics • for module diagnostics • for module diagnostics • for module diagnostics	·	8 A
Cable length shielded, max. unshielded, max. 600 m terrupts/diagnostics/status information Diagnostics function Substitute values connectable No Alarms Diagnostic alarm Maintenance interrupt No Monitoring the supply voltage No Short-circuit Group error No Diagnostics indication LED ERROR LED MAINT LED MAINT LED Monitoring of the supply voltage (PWR-LED) Channel status display For channel diagnostics No No For connect connection module No		
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Diagnostics function No Substitute values connectable No Alarms		600 m
Substitute values connectable No Alarms ● Diagnostic alarm No ● Maintenance interrupt No Diagnoses ● Monitoring the supply voltage No ● Wire-break No ● Short-circuit No ● Group error No Diagnostics indication LED ● RUN LED Yes; green LED ● ERROR LED Yes; red LED ● MAINT LED No ● Monitoring of the supply voltage (PWR-LED) Yes; via SIMATIC TOP connect connection module ● Channel status display Yes; via SIMATIC TOP connect connection module ● for channel diagnostics No ● for module diagnostics No	nterrupts/diagnostics/status information	
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 Diagnostic alarm Maintenance interrupt No Diagnoses Monitoring the supply voltage Wire-break Short-circuit Group error No Diagnostics indication LED **RUN LED ERROR LED MAINT LED MO Monitoring of the supply voltage (PWR-LED) Yes; via SIMATIC TOP connect connection module Channel status display for channel diagnostics No No for module diagnostics No 	Substitute values connectable	No
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Monitoring the supply voltage Wire-break Short-circuit Group error No Diagnostics indication LED RUN LED FRROR LED FRROR LED MAINT LED Monitoring of the supply voltage (PWR-LED) Channel status display For channel diagnostics For module diagnostics No		No
 Wire-break Short-circuit Group error No Diagnostics indication LED RUN LED ERROR LED MAINT LED Monitoring of the supply voltage (PWR-LED) Channel status display for channel diagnostics for module diagnostics No Ves; via SIMATIC TOP connect connection module Yes; via SIMATIC TOP connect connection module No No No For channel diagnostics No No No No No No No No No No No No No No No No No 	Diagnoses	
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Piagnostics indication LED RUN LED Yes; green LED ERROR LED Yes; red LED No MAINT LED No Monitoring of the supply voltage (PWR-LED) Channel status display for channel diagnostics for module diagnostics No	Short-circuit	No
 RUN LED ERROR LED MAINT LED Monitoring of the supply voltage (PWR-LED) Channel status display for channel diagnostics for module diagnostics No Yes; red LED No Yes; via SIMATIC TOP connect connection module Yes; via SIMATIC TOP connect connection module No No No	Group error	No
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 Monitoring of the supply voltage (PWR-LED) Channel status display for channel diagnostics for module diagnostics No 	• ERROR LED	Yes; red LED
 Channel status display for channel diagnostics for module diagnostics No 	MAINT LED	No
 for channel diagnostics for module diagnostics No 	 Monitoring of the supply voltage (PWR-LED) 	Yes; via SIMATIC TOP connect connection module
• for module diagnostics No	Channel status display	Yes; via SIMATIC TOP connect connection module
	• for channel diagnostics	No
	for module diagnostics	No
otential separation	otential separation	
Potential separation channels	Potential separation channels	

 between the channels 	No	
 between the channels, in groups of 	16; 32 when using SIMATIC TOP connect connection module	
 between the channels and backplane bus 	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 FS01	
Highest safety class achievable for safety-related tripping of standa	rd modules	
 Performance level according to ISO 13849-1 	PL d	
 Category according to ISO 13849-1 	Cat. 3	
 SIL acc. to IEC 62061 	SIL 2	
Ambient conditions		
Ambient temperature during operation		
 horizontal installation, min. 	-30 °C	
 horizontal installation, max. 	60 °C	
 vertical installation, min. 	-30 °C	
vertical installation, max.	40 °C	
Altitude during operation relating to sea level		
 Installation altitude above sea level, max. 	5 000 m	
Dimensions		
Width	35 mm	
Height	147 mm	
Depth	129 mm	
Weights		
Weight, approx.	270 g	
Other		
Note:	Please order cable and connection modules separately	

last modified:

8/16/2023