SIEMENS

Data sheet

6ES7522-1BH01-0AB0



SIMATIC S7-1500, digital output module DQ16x24 V DC/0.5A HF; 16 channels in groups of 8; 4 A per group; single-channel diagnostics; substitute value: switching cycle counter for connected actuators. 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. front connector (screw terminals or push-in) to be ordered separately

Figure similar

Ceneral information Product type designation HW functional status From FS02 V1.1.0 • FW update possible Product function • FW update possible Product function • I&M data • Isochronous mode • Prioritized startup Fingment with • STEP 7 TIA Portal configurable/integrated from version • STEP 7 TIA Portal configurable/integrated from version • PROFIBUS from GSD version/GSD revision • PROFIBUS from GSD version/GSD revision Operating mode • DQ • DQ with energy-saving function • PWM • Cam control (switching at comparison values) • Oversampling • MSO • Integrated operating cycle counter Press Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, lower limit (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, lower limit (DC) permissible rang		
HW functional status From FS02 Firmware version From FS02 Firmware version From FS02 Firmware version From FS02 Firmware version From FS02 From FS	General information	
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I IkM data I IkM data I Isochronous mode I		Yes
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version • STEP 7 configurable/integrated from version • PROFIBUS from GSD version/GSD revision • PROFIBUS from GSD version/GSD revision • PROFINET from GSD version/GSD revision • PROFINET from GSD version/GSD revision • PROFINET from GSD version/GSD revision • PQ • DQ with energy-saving function • PWM • Cam control (switching at comparison values) • Oversampling • MSO • Integrated operating cycle counter Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) Reverse polarity protection Input current Current consumption, max. 30 mA output voltage / header Rated value (DC) Power Power available from the backplane bus 1.1 W Power loss Power loss Power loss Power loss, typ. 2 W Digital outputs Transistor		
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PROFINET from GSD version/GSD revision Operating mode DQ Yes DQ with energy-saving function PWM Cam control (switching at comparison values) Oversampling MSO Integrated operating cycle counter Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Input current Current consumption, max. Output voltage / header Rated value (DC) Power Power available from the backplane bus 1.1 W Power loss Power loss, typ. Digital outputs Transistor	 STEP 7 configurable/integrated from version 	V5.5 SP3 / -
Operating mode • DQ • DQ with energy-saving function • PWM • Cam control (switching at comparison values) • Oversampling • MSO • Integrated operating cycle counter Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) Reverse polarity protection Input current Current consumption, max. Output voltage / header Rated value (DC) Power Power available from the backplane bus 1.1 W Power loss Power loss, typ. 2 W Digital outputs Transistor		
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DQ with energy-saving function PWM Cam control (switching at comparison values) Oversampling MSO Integrated operating cycle counter Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Yes; through internal protection with 7 A per group Input current Current consumption, max. Output voltage / header Rated value (DC) Power Power available from the backplane bus 1.1 W Power loss Power loss, typ. 2 W Digital outputs Transistor	Operating mode	
PWM Cam control (switching at comparison values) Oversampling No MSO Integrated operating cycle counter Supply voltage Rated value (DC) Permissible range, lower limit (DC) Permissible range, upper limit (DC) Reverse polarity protection Yes; through internal protection with 7 A per group Input current Current consumption, max. Output voltage / header Rated value (DC) Power Power available from the backplane bus 1.1 W Power loss Power loss, typ. Digital outputs Transistor	• DQ	Yes
Cam control (switching at comparison values) Oversampling MSO MSO Integrated operating cycle counter Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Yes; through internal protection with 7 A per group Input current Current consumption, max. 30 mA output voltage / header Rated value (DC) Power Power available from the backplane bus 1.1 W Power loss Power loss, typ. 2 W Digital outputs Transistor	 DQ with energy-saving function 	No
Oversampling MSO MSO Integrated operating cycle counter Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Input current Current consumption, max. Output voltage / header Rated value (DC) Power Power available from the backplane bus Power loss Power loss, typ. Digital outputs Transistor	• PWM	No
MSO Integrated operating cycle counter Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) Reverse polarity protection Input current Current consumption, max. Output voltage / header Rated value (DC) Power Power available from the backplane bus 1.1 W Power loss Power loss, typ. 2 W Digital outputs Transistor	` "	No
● Integrated operating cycle counter 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 / header Rated value (DC) 24 V Power Power available from the backplane bus 1.1 W Power loss Power loss, typ. 2 W Digital outputs Type of digital output Transistor	· -	
Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Input current Current consumption, max. Current consumption, max. 30 mA output voltage / header Rated value (DC) Power Power available from the backplane bus 1.1 W Power loss Power loss, typ. 2 W Digital outputs Type of digital output Transistor		
Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) Reverse polarity protection Input current Current consumption, max. Output voltage / header Rated value (DC) Power Power available from the backplane bus 1.1 W Power loss Power loss, typ. 2 W Digital outputs Type of digital output Transistor	Integrated operating cycle counter	Yes
permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Yes; through internal protection with 7 A per group Input current Current consumption, max. 30 mA output voltage / header Rated value (DC) Power Power available from the backplane bus 1.1 W Power loss Power loss, typ. Digital outputs Type of digital output Transistor	Supply voltage	
permissible range, upper limit (DC) Reverse polarity protection Input current Current consumption, max. Output voltage / header Rated value (DC) Power Power available from the backplane bus Power loss, typ. Digital outputs Type of digital output 28.8 V Yes; through internal protection with 7 A per group 100 Max Yes; through internal protection with 7 A per group 100 Max Yes; through internal protection with 7 A per group 110 Max Yes; through internal protection with 7 A per group 111 Max Yes; through internal protection with 7 A per group 110 Max Yes; through internal protection with 7 A per group 111 Max Yes; through internal protection with 7 A per group 111 Max Yes; through internal protection with 7 A per group 111 Max Yes; through internal protection with 7 A per group 122 Max Yes; through internal protection with 7 A per group 123 Max Yes; through internal protection with 7 A per group 124 Max Yes; through internal protection with 7 A per group 124 Max Yes; through internal protection with 7 A per group 124 Max Yes; through internal protection with 7 A per group 124 Max Yes; through internal protection with 7 A per group 124 Max Yes; through internal protection with 7 A per group 124 Max Yes; through internal protection with 7 A per group 124 Max Yes; through internal protection with 7 A per group 124 Max Yes; through internal protection with 7 A per group 124 Max Yes	Rated value (DC)	24 V
Reverse polarity protection Input current Current consumption, max. Output voltage / header Rated value (DC) Power Power available from the backplane bus Power loss, typ. Digital outputs Type of digital output Yes; through internal protection with 7 A per group Yes; through internal protection with 7 A per group 1.1 W 9 W 1.1 W Power loss Transistor	permissible range, lower limit (DC)	19.2 V
Input current Current consumption, max. 30 mA output voltage / header Rated value (DC) 24 V Power Power available from the backplane bus 1.1 W Power loss Power loss, typ. 2 W Digital outputs Type of digital output Transistor	permissible range, upper limit (DC)	28.8 V
Current consumption, max. Output voltage / header Rated value (DC) Power Power available from the backplane bus 1.1 W Power loss Power loss, typ. Digital outputs Type of digital output Transistor	Reverse polarity protection	Yes; through internal protection with 7 A per group
output voltage / header Rated value (DC) 24 V Power Power available from the backplane bus 1.1 W Power loss Power loss, typ. 2 W Digital outputs Type of digital output Transistor	Input current	
Rated value (DC) 24 V Power Power available from the backplane bus 1.1 W Power loss Power loss, typ. 2 W Digital outputs Type of digital output Transistor	Current consumption, max.	30 mA
Power available from the backplane bus 1.1 W Power loss Power loss, typ. 2 W Digital outputs Type of digital output Transistor	output voltage / header	
Power available from the backplane bus 1.1 W Power loss Power loss, typ. 2 W Digital outputs Type of digital output Transistor	Rated value (DC)	24 V
Power loss Power loss, typ. 2 W Digital outputs Type of digital output Transistor	Power	
Power loss, typ. 2 W Digital outputs Type of digital output Transistor	Power available from the backplane bus	1.1 W
Digital outputs Type of digital output Transistor	Power loss	
Type of digital output Transistor	Power loss, typ.	2 W
	Digital outputs	
Number of digital outputs 16	Type of digital output	Transistor
	Number of digital outputs	16

Current-sourcing	Yes
Digital outputs, parameterizable	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	
 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	1. (001)
• for signal "1", min.	L+ (-0.8 V)
Output current	0.5 A
• for signal "1" rated value	0.5 A
• for signal "1" permissible range, max.	0.5 A
for signal "0" residual current, max. Output delay with registive lead.	0.5 mA
Output delay with resistive load • "0" to "1", max.	100 με
	100 µs
• "1" to "0", max. Parallel switching of two outputs	500 μs
· · · · · · · · · · · · · · · · · · ·	Yes
for logic linksfor uprating	res No
for redundant control of a load	Yes
	res
Switching frequency • with resistive load, max.	100 Hz
with resistive load, max. with inductive load, max.	0.5 Hz; According to IEC 60947-5-1, DC-13
on lamp load, max.	10 Hz
Total current of the outputs	10112
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	o / i, coo adamonar accomption in the mandar
• shielded, max.	1 000 m
unshielded, max.	600 m
Isochronous mode	
	70 40
Evacution and activation time (TCO) min	
Execution and activation time (TCO), min.	70 μs
Bus cycle time (TDP), min.	70 μs 250 μs
Bus cycle time (TDP), min. Interrupts/diagnostics/status information	250 μs
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function	250 μs Yes
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable	250 μs
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms	250 μs Yes Yes
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms • Diagnostic alarm	Yes Yes Yes
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms • Diagnostic alarm • Maintenance interrupt	250 μs Yes Yes
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms • Diagnostic alarm • Maintenance interrupt Diagnoses	Yes Yes Yes Yes Yes
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms • Diagnostic alarm • Maintenance interrupt Diagnoses • Monitoring the supply voltage	Yes Yes Yes Yes Yes Yes
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms • Diagnostic alarm • Maintenance interrupt Diagnoses • Monitoring the supply voltage • Wire-break	Yes Yes Yes Yes Yes Yes Yes Yes
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms • Diagnostic alarm • Maintenance interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit	Yes
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms • Diagnostic alarm • Maintenance interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit • Group error	Yes Yes Yes Yes Yes Yes Yes Yes
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms • Diagnostic alarm • Maintenance interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit • Group error Diagnostics indication LED	Yes
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms • Diagnostic alarm • Maintenance interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit • Group error Diagnostics indication LED • RUN LED	Yes
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms • Diagnostic alarm • Maintenance interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit • Group error Diagnostics indication LED • RUN LED • ERROR LED	Yes
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms • Diagnostic alarm • Maintenance interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit • Group error Diagnostics indication LED • RUN LED • ERROR LED • MAINT LED	Yes
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms • Diagnostic alarm • Maintenance interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit • Group error Diagnostics indication LED • RUN LED • ERROR LED • MAINT LED • Monitoring of the supply voltage (PWR-LED)	Yes
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms • Diagnostic alarm • Maintenance interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit • Group error Diagnostics indication LED • RUN LED • ERROR LED • MAINT LED • Monitoring of the supply voltage (PWR-LED) • Channel status display	Yes
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms • Diagnostic alarm • Maintenance interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit • Group error Diagnostics indication LED • RUN LED • ERROR LED • MAINT LED • Monitoring of the supply voltage (PWR-LED) • Channel status display • for channel diagnostics	Yes
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms • Diagnostic alarm • Maintenance interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit • Group error 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	Yes
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms Diagnostic alarm Maintenance interrupt Diagnoses Monitoring the supply voltage Wire-break Short-circuit Group error 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 Potential separation	Yes
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms • Diagnostic alarm • Maintenance interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit • Group error 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 Potential separation Potential separation	Yes
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms • Diagnostic alarm • Maintenance interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit • Group error 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 Potential separation Potential separation channels • between the channels	Yes
Bus cycle time (TDP), min. Interrupts/diagnostics/status information Diagnostics function Substitute values connectable Alarms • Diagnostic alarm • Maintenance interrupt Diagnoses • Monitoring the supply voltage • Wire-break • Short-circuit • Group error 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 Potential separation Potential separation	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 standard 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; From FS03	
 horizontal installation, max. 	60 °C	
 vertical installation, min. 	-30 °C; From FS03	
 vertical installation, max. 	40 °C	
Altitude during operation relating to sea level		
 Installation altitude above sea level, max. 	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual	
Dimensions		
Width	35 mm	
Height	147 mm	
Depth	129 mm	
Weights		
Weight, approx.	230 g	
last modified:	3/3/2022 🗗	