SIEMENS

Data sheet 6ES7523-1BL00-0AA0



SIMATIC S7-1500 digital input/output module, DI16x 24VDC BA, 16 channels in groups of 16, input delay typ. 3.2 ms input type 3 (IEC 61131), DQ16XDC 24V/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 SIL2 according to EN IEC 62061:2021 and Category 2 / PL c according to EN ISO 13849-1:2015. delivery including front connector push-in,

General information	
Product type designation	DI 16x24VDC / DQ16x24VDC/0.5A 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	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	
● DI	Yes
● Counter	No
● DQ	Yes
● DQ with energy-saving function	No
● PWM	No
● Cam control (switching at comparison values)	No
● Oversampling	No
● MSI	Yes
● 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
Input current	
Current consumption, max.	30 mA
Output voltage	
Rated value (DC)	24 V
Power	
Power consumption from the backplane bus	1.1 W

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Power loss	
Power loss, typ.	3.45 W
Address area	
Address space per module	
● Inputs	2 byte; typical, maximum 30 bytes, see manual for details
● Outputs	2 byte
Digital inputs	
Number of digital inputs	16
Digital inputs, parameterizable	No
Sourcing/sinking input	P-reading
Input characteristic curve in accordance with IEC 61131, type 3	Yes
Pulse extension	No
Edge evaluation	No
Signal change flutter	No
Flutter observation window	No
Number of simultaneously controllable inputs	
● Number of simultaneously controllable inputs	16; see additional description in the manual
Digital input functions, parameterizable	
● Gate start/stop	No
● Freely usable digital input	No
● Counter	No
● Digital input with oversampling	No
Input voltage	
● Rated value (DC)	24 V
● for signal "0"	-30 to +5 V
● for signal "1"	+11 to +30V
Input current	
● for signal "1", typ.	2.7 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— 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
for interrupt inputs	
— Parameterizable	No
for technological functions	
— Parameterizable	No
Cable length	
● shielded, max.	1 000 m
● unshielded, max.	600 m
Digital outputs	
Type of digital output	Transistor
Number of digital outputs	16
Current-sinking	No
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
Digital output functions, parameterizable	
● Switching tripped by comparison values	No
● Freely usable digital output	No
● PWM output	No
● Digital output with oversampling	No
Switching capacity of the outputs	
● with resistive load, max.	0.5 A

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● 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 current	
● for signal "1" rated value	0.5 A
● for signal "1" permissible range, max.	0.5 A
● 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	
● for logic links	Yes
● for uprating	No
● for redundant control of a load	Yes
Switching frequency	
● with resistive load, max.	100 Hz
● with inductive load, max.	0.5 Hz
● on lamp load, max.	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	
● shielded, max.	1 000 m
● unshielded, max.	600 m
Encoder	
Connectable encoders	
● 2-wire sensor	Yes
— permissible quiescent current (2-wire sensor), max.	1.5 mA
Interrupts/diagnostics/status information	
Diagnostics function	No
Substitute values connectable	No
Alarms	
● Diagnostic alarm	No
● Maintenance interrupt	No
● Hardware 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; green LED
● Channel status display	Yes; green LED
● for channel diagnostics	No
● for module diagnostics	No
Potential separation	
Potential separation channels	
● between the channels	No
● between the channels, in groups of	8
● between the channels and backplane bus	Yes
Isolation	
Isolation tested with	707 V DC (type test)

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Standards, approvals, certificates	
Siemens Eco Profile (SEP)	Siemens EcoTech
Suitable for safety-related tripping of standard modules	Yes; From FS03
Ecological footprint	
● environmental product declaration	Yes
Global warming potential	
— global warming potential, (total) [CO2 eq]	18.9 kg
— global warming potential, (during production) [CO2 eq]	12.1 kg
— global warming potential, (during operation) [CO2 eq]	7.66 kg
— global warming potential, (after end of life cycle) [CO2 eq]	-1.02 kg
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
● remark on safety-oriented shutdown	https://support.industry.siemens.com/cs/de/en/view/39198632
Security	
signed firmware update	Yes; Firmware V3.0.0 or higher
securely removing data	No
data integrity	Yes; Firmware V3.0.0 or higher
Ambient conditions	
Ambient temperature during operation	
● horizontal installation, min.	-30 °C; from FS04
● horizontal installation, max.	60 °C
● vertical installation, min.	-30 °C; from FS04
● 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
Absolute humidity	
● dew point, min.	-60 °C; suitable for dry room applications
Dimensions	
Width	25 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	280 g
Other	
Note:	Supplied incl. 40-pole push-in front connectors

Classifications

	Version	Classification
eClass	16	27-24-22-04
eClass	14	27-24-22-04
eClass	12	27-24-22-04
eClass	9.1	27-24-22-04
eClass	9	27-24-22-04
eClass	8	27-24-22-04
eClass	7.1	27-24-22-04
eClass	6	27-24-22-04
ETIM	10	EC001419
ETIM	9	EC001419
ETIM	8	EC001419
ETIM	7	EC001419
IDEA	4	3566
UNSPSC	15	32-15-17-05

Approvals / Certificates

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General Product Approval

Miscellaneous

General Product Approval

China RoHS

Manufacturer Declaration

For use in hazardous locations

FM

FM

For use in hazardous locations

CCC-Ex

Type Examination Certificate

Miscellaneous

CCC-Ex

Maritime application

NK / Nippon Kaiji Kyokai

Maritime application

CCS (China Classification Society)

KR (Korean Register of Shipping)

Environment

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