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Data sheet 6ES7138-6EB00-0BA0



Figure similar

SIMATIC ET 200SP, TM PTO 2x24 V, interface module for stepper drives, 2 channels pulse train output, PTO: 24 V, 2 DI, 1 DQ 24 V DC per channel, suitable for BU type A0

General information	
Product type designation	TM PTO 2x24V
usable BaseUnits	BU type A0
Color code for module-specific color identification plate	CC00
Product function	
● I&M data	Yes; I&M0 to I&M3
● Isochronous mode	Yes
Engineering with	
● STEP 7 TIA Portal configurable/integrated from version	STEP 7 V17 with HSP or higher
● PROFIBUS from GSD version/GSD revision	One GSD file each, Revision 3 and 5 and higher
● PROFINET from GSD version/GSD revision	GSDML V2.35
Supply voltage	
Rated value (DC)	24 V
Load voltage L+	
● 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
Input current	
Current consumption, max.	50 mA; without load
Power loss	
Power loss, typ.	1.5 W
Address area	
Address space per module	
● Inputs	32 byte
● Outputs	16 byte
Hardware configuration	
Automatic encoding	Yes
● Mechanical coding element	Yes
Digital inputs	
Number of digital inputs	6; 3 per channel
Digital inputs, parameterizable	Yes
Input characteristic curve in accordance with IEC 61131, type 3	Yes
Digital input functions, parameterizable	
● Synchronization	Yes
● Probe	Yes
● Drive ready	Yes
Input voltage	
● Rated value (DC)	24 V

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● for signal "0"	-5 ... +5 V
● for signal "1"	+11 to +30V
● permissible voltage at input, min.	-30 V; -5 V continuous, -30 V brief reverse polarity protection
● permissible voltage at input, max.	30 V
Input current	
● for signal "1", typ.	2.5 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	Yes; none / 0.05 / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms
— at "0" to "1", min.	6 µs; for parameterization "none"
— at "1" to "0", min.	6 µs; for parameterization "none"
Cable length	
● shielded, max.	1 000 m
● unshielded, max.	600 m
Digital outputs	
Number of digital outputs	6; 3 per channel
Current-sinking	Yes; For 24 V PTO outputs
Current-sourcing	Yes
Digital outputs, parameterizable	Yes
Short-circuit protection	Yes; electronic/thermal
● Response threshold, typ.	1 A
Controlling a digital input	Yes
Digital output functions, parameterizable	
● PTO (pulse train output) signal interface	Yes
— 24 V asymmetrical	Yes
● PTO (pulse train output) signal type	
— Pulse and direction	Yes
— Count up, count down	Yes
— Incremental encoder (A, B phase shift)	Yes
— Incremental encoder (A, B phase shift, quadruple)	Yes
Switching capacity of the outputs	
● with resistive load, max.	0.1 A; 0.5 A for CHn.ED
● on lamp load, max.	1 W; 5 W for CHn.ED
Load resistance range	
● lower limit	240 Ω; 48 ohms for CHn.ED
● upper limit	12 kΩ
Output voltage	
● for signal "1", min.	23.2 V; L+ (-1.3 V), L+ (-0.8 V) for CHn.ED
Output current	
● for signal "1" rated value	0.1 A; 0.5 A for CHn.ED
● for signal "1" permissible range, max.	0.12 A; 0.6 A for CHn.ED
● for signal "1" minimum load current	2 mA
● for signal "0" residual current, max.	0.5 mA
Switching frequency	
● with resistive load, max.	10 kHz
● with inductive load, max.	0.5 Hz; According to IEC 60947-5-1, DC-13
● on lamp load, max.	10 Hz
● For signal interface 24 V asymmetrical	200 kHz; For 24 V PTO outputs
Total current of the outputs	
● Current per module, max.	1.4 A
Cable length	
● shielded, max.	600 m; Up to 10 kHz, 50 m at 200 kHz
Interrupts/diagnostics/status information	
Alarms	
● Diagnostic alarm	Yes
Diagnoses	
● Monitoring the supply voltage	Yes
● Short-circuit	Yes
Diagnostics indication LED	
● Monitoring of the supply voltage (PWR-LED)	Yes; green PWR LED
● Channel status display	Yes; green LED

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● for module diagnostics	Yes; green/red DIAG LED
Potential separation	
Potential separation channels	
● between the channels and backplane bus	Yes
Isolation	
Isolation tested with	707 V DC (type test)
Ambient conditions	
Ambient temperature during operation	
● horizontal installation, min.	-30 °C
● horizontal installation, max.	60 °C; Observe derating
● vertical installation, min.	-30 °C
● vertical installation, max.	50 °C; Observe derating
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
Decentralized operation	
to SIMATIC S7-300	Yes; Via control and feedback interface
to SIMATIC S7-400	Yes; Via control and feedback interface
to SIMATIC S7-1200	Yes
to SIMATIC S7-1500	Yes
to standard PROFIBUS master	Yes; Via control and feedback interface
to standard PROFINET controller	Yes; Via control and feedback interface
Dimensions	
Width	15 mm
Height	73 mm
Depth	58 mm
Weights	
Weight, approx.	45 g

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