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Data sheet 6ES7421-7BH01-0AB0



SIMATIC S7-400, digital input SM 421, isolated 16 DI; 24 V DC with 0.05 ms input delay alarm, diagnostics

Supply voltage	
Load voltage L+	
● Rated value (DC)	24 V
● permissible range, lower limit (DC)	20.4 V
● permissible range, upper limit (DC)	28.8 V
● Reverse polarity protection	Yes
Input current	
from supply voltage L+, max.	120 mA
from backplane bus 5 V DC, max.	130 mA
Encoder supply	
Number of outputs	2
Type of output voltage	L+ (-2.5 V)
Short-circuit protection	Yes; Electronic
additional (redundant) feed	Yes; possible
Output current	
● Rated value	120 mA
● permissible range, lower limit	0 mA
● permissible range, upper limit	150 mA
Power loss	
Power loss, typ.	5 W
Digital inputs	
Number of digital inputs	16
Input characteristic according to IEC 61131	Type 2
Number of simultaneously controllable inputs	
● Number of simultaneously controllable inputs	16
Input voltage	
● Type of input voltage	DC
● Rated value (DC)	24 V
● for signal "0"	-30 V DC to +5 V DC
● for signal "1"	11 V DC to 30 V DC
Input current	
● for signal "0", min.	6 mA; < 6 mA
● for signal "1", typ.	6 mA; 6 to 8 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	Yes
— at "0" to "1", min.	3 µs; 0.05 / 0.1 / 0.5 / 3 ms
Encoder connection	
● Fixed current limitation for wire-break monitoring, min.	10 kΩ

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● Fixed current limitation for wire-break monitoring, max.	18 kΩ
Cable length	
● shielded, max.	1 000 m; 1 000 m: 3 ms, 70 m: 0.5 ms, 30 m: 0.1 ms, 30 m: 0.05 ms
● unshielded, max.	600 m; 600 m: 3 ms; 50 m: 0,5 ms; 20 m: 0,1 ms; 20 m: 0,05 ms
Encoder	
Connectable encoders	
● 2-wire sensor	Yes
— permissible quiescent current (2-wire sensor), max.	3 mA
Interrupts/diagnostics/status information	
Diagnostics function	Yes; Parameterizable
Alarms	
● Diagnostic alarm	Yes; Parameterizable
● Hardware interrupt	Yes; Parameterizable
Diagnoses	
● Diagnostic information readable	Yes
● Monitoring the supply voltage	Yes
● Wire-break	Yes; I < 1 mA
Diagnostics indication LED	
● Rated load voltage PWR (green)	Yes; Per group
● internal fault INTF (red)	Yes
● external fault EXTF (red)	Yes
● Status indicator digital input (green)	Yes
● Channel fault indicator F (red)	No
Potential separation	
Potential separation digital inputs	
● between the channels	Yes
● between the channels, in groups of	8
● between the channels and backplane bus	Yes
Isolation	
Isolation tested with	500 V DC
Dimensions	
Width	25 mm
Height	290 mm
Depth	210 mm
Weights	
Weight, approx.	600 g

Classifications

	Version	Classification
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

General Product Approval

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EG-Konf.	Miscellaneous	UKCA	China RoHS	UL	KC

General Product Approval	EMV		For use in hazardous locations		
RCM	RCM	RCM	IECEx	ATEX	FM

For use in hazardous locations				Maritime application	
CCC	IECEx	Type Examination Certificate	ATEX	ABS	BUREAU VERITAS

Maritime application					
DNV	LRS	NK / Nippon Kaiji Kyokai	PRS	RINA	RMRS

Maritime application
CCS (China Classification Society)

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