SIEMENS

Data sheet

6ES7321-7TH00-0AB0



SIMATIC S7/PCS7 Digital input SM 321, 16 DI; 24 V DC, 1 x 40-pole, diagnostics-capable, for contacts (wired/ not wired), NAMUR encoder, 3/4-wire Bero, with chatter monitoring; Pulse extension, open-circuit detection Interface module IM 153-2 HF or IM 153-4 HF possible

Figure similar

riguresinina	
Supply voltage	
Load voltage L+	
 Rated value (DC) 	24 V
 Reverse polarity protection 	Yes
Input current	
from load voltage L+ (without load), max.	100 mA
from backplane bus 5 V DC, max.	100 mA
Encoder supply	
Number of outputs	4
Type of output voltage	1Vs1/2Vs1: 18 V, 1Vs2/2Vs2: 8.2 V
Short-circuit protection	Yes; Electronic
additional (redundant) feed	No
Output current	
Rated value	190 mA; at 18V: 190mA, at 8.2V: 60mA
permissible range, upper limit	Up to 60 degree: at 18V: 0 to 110mA, at 8.2V: 0 to 60mA; Up to 40 degree: at 18V: 0 to 190mA, at 8.2V: 0 to 60mA
Power loss	
Power loss, typ.	11 W
Digital inputs	
Number of digital inputs	16
Input characteristic curve in accordance with IEC 61131, type 1	No
Input characteristic curve in accordance with IEC 61131, type 2	Yes
Number of simultaneously controllable inputs	
horizontal installation	
— up to 60 °C, max.	16
vertical installation	
— up to 40 °C, max.	16
Input voltage	
 Type of input voltage 	DC
Rated value (DC)	8.2 V; 8.2V/18V
Input current	
• for signal "0", min.	0.35 mA
for signal "0", max. (permissible quiescent current)	1.2 mA
	10 mA; for NAMUR: 2.1 to 7 mA, for 10k ohm/47k ohm contact: typical 10mA, for 4 wire BEROs: typical 10 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— at "0" to "1", min.	2.5 ms
— at "0" to "1", max.	3.5 ms
— at "1" to "0", min.	2.5 ms

Cable length • shielded, max. • unshielded, max. Not permitted Interrupts/diagnostics/status information Alarms Pes Diagnostics function • biagnostic slarm • Diagnostic alarm • Diagnostic alarm • Diagnostic information readable • Wire-break Diagnostic information readable • Wire-break Possopostics indication LED • Group error SF (red) • Status indicator digital input (green) • Encoder supply Vs (green) Potential separation digital inputs • between the channels, in groups of • between the channels and backplane bus Isolation Isolation tested with Ambient conditions Ambient conditions Ambient conditions Ambient connector in min. • max. 60 °C connection method required front connector 1x 40-pin Dimensions Width 40 mm Height 125 mm Depth 120 mm	— at "1" to "0", max.	3.5 ms	
Interrupts/diagnostics/status information Alarms Yes Diagnostics function Yes Alarms Diagnostic alarm Yes Hardware interrupt Yes Diagnostic information readable Yes Wire-break Yes Diagnostic information readable Yes Wire-break Yes Diagnostic information readable Yes Status indication LED Group error SF (red) Yes Status indicator digital input (green) Yes Encoder supply Vs (green) Yes Potential separation Potential separation in groups of 8 between the channels Yes between the channels, in groups of 8 between the channels and backplane bus Yes Isolation tested with 600 V DC Ambient conditions Ambient conditions Ambient conditions Ambient connector 1x 40-pin Dimensions Width 40 mm Height 125 mm			
Interrupts/diagnostics/status information Alarms Yes Diagnostic function Yes Alarms Diagnostic alarm Yes Hardware interrupt Yes Diagnoses Diagnoses Diagnostic information readable Yes Wire-break Yes Diagnostic indication LED Group error SF (red) Yes Status indicator digital input (green) Yes Encoder supply Vs (green) Yes Detween the channels Abetween He channels Yes Detween the channels Abetween He channe	• shielded, max.	400 m; max. 200m with 8.2 V sensor, max. 400m with 18 V sensor	
Alarms Piagnostics function Alarms Diagnostic alarm Diagnostic alarm Diagnostic alarm Hardware interrupt Possible Alarms Possible Alar	• unshielded, max.	Not permitted	
Diagnostics function Yes Alarms • Diagnostic alarm • Diagnostic alarm • Hardware interrupt Diagnoses • Diagnoses • Diagnostic information readable • Wire-break Diagnostics indication LED • Group error SF (red) • Status indicator digital input (green) • Encoder supply Vs (green) Potential separation Potential separation Potential separation Potential separation between the channels in groups of • between the channels and backplane bus 1 between the channels and backplane bus 1 solation Isolation tested with • 600 V DC Ambient conditions Ambient temperature during operation • min. • min. • max. • 60 °C connection method required front connector Dimensions Width 40 mm Height Height	Interrupts/diagnostics/status information		
Alarms Diagnostic alarm Hardware interrupt Pes Hardware interrupt Pes Diagnostic information readable Wire-break Pes Diagnostic information readable Wire-break Pes Diagnostic information readable Wes Diagnostics indication LED Group error SF (red) Status indicator digital input (green) Status indicator digital input (green) Fencoder supply Vs (green) Potential separation Potential separation Potential separation digital inputs between the channels between the channels in groups of between the channels and backplane bus Yes Isolation Isolation Isolation tested with GOO V DC Ambient conditions Ambient temperature during operation min. min. O °C connection method required front connector Dimensions Width 40 mm Height Height	Alarms	Yes	
Diagnoses Hardware interrupt Yes Diagnoses Diagnoses Diagnostic information readable Wire-break Yes Diagnostics indication LED Group error SF (red) Status indicator digital input (green) Encoder supply Vs (green) Potential separation Potential separation digital inputs between the channels between the channels Yes between the channels Yes between the channels Yes between the channels Holden Book Pres Status indicator digital input (green) Yes Potential separation Potential separation Potential separation Separation Obtain the separation Holden Book Pres Book Wes	Diagnostics function	Yes	
Hardware interrupt Piagnoses Diagnostic information readable Wire-break Ves Diagnostics indication LED Group error SF (red) Status indicator digital input (green) Encoder supply Vs (green) Potential separation Potential separation digital inputs between the channels between the channels between the channels of 8 between	Alarms		
Diagnoses Diagnostic information readable Wire-break Yes Diagnostics indication LED Group error SF (red) Status indicator digital input (green) Encoder supply Vs (green) Potential separation Potential separation digital inputs between the channels between the channels Yes between the channels, in groups of 8 between the channels yes between the channels and backplane bus Isolation Isolation tested with Mobient conditions Ambient conditions Ambient temperature during operation min. max. O °C max. Go °C connection method required front connector 1x 40-pin Dimensions Width 40 mm Height 125 mm	Diagnostic alarm	Yes	
Diagnostic information readable Wire-break Ves Diagnostics indication LED Group error SF (red) Status indicator digital input (green) Encoder supply Vs (green) Potential separation Potential separation digital inputs between the channels between the channels between the channels and backplane bus Ves Isolation Isolation tested with Mobient conditions Ambient temperature during operation max. O °C connection method required front connector Dimensions Width A0 mm Height Height Ves Yes Ves O C Ves Ves Ves Ves O °C O °C O °C O °C O °C O °C O O °C O °	Hardware interrupt	Yes	
Wire-break Piagnostics indication LED Group error SF (red) Status indicator digital input (green) Encoder supply Vs (green) Potential separation Potential separation digital inputs between the channels between the channels, in groups of between the channels and backplane bus Ves Solation Isolation tested with 600 V DC Ambient conditions Ambient temperature during operation mn. 0 °C max. 600 °C connection method required front connector Dimensions Width 40 mm Height 125 mm	Diagnoses		
Diagnostics indication LED Group error SF (red) Status indicator digital input (green) Encoder supply Vs (green) Potential separation Potential separation digital inputs between the channels between the channels, in groups of between the channels and backplane bus Isolation Isolation tested with Ambient conditions Ambient temperature during operation max. o °C connection method required front connector 1x 40-pin Dimensions Width Height 125 mm	 Diagnostic information readable 	Yes	
Group error SF (red) Status indicator digital input (green) Encoder supply Vs (green) Potential separation Potential separation digital inputs between the channels between the channels between the channels and backplane bus Isolation Isolation Solation tested with Ambient temperature during operation min. max. 60 °C connection method required front connector Dimensions Width Height Yes Yes 60 °C Yes Yes 8 60 °C Yes Yes 125 mm	Wire-break	Yes	
Status indicator digital input (green) Encoder supply Vs (green) Potential separation Potential separation digital inputs between the channels between the channels, in groups of between the channels and backplane bus Solation	Diagnostics indication LED		
Encoder supply Vs (green) Potential separation Potential separation digital inputs • between the channels • between the channels, in groups of • between the channels and backplane bus Isolation Isolation Isolation tested with 600 V DC Ambient conditions Ambient temperature during operation • min. • min. • max. 60°C connection method required front connector Dimensions Width 40 mm Height 125 mm	 Group error SF (red) 	Yes	
Potential separation Potential separation digital inputs • between the channels • between the channels, in groups of • between the channels and backplane bus Isolation Isolation Isolation tested with Ambient conditions Ambient temperature during operation • min. • min. • max. 60 °C connection method required front connector Dimensions Width Height 40 mm Height	 Status indicator digital input (green) 	Yes	
Potential separation digital inputs	Encoder supply Vs (green)	Yes	
 between the channels between the channels, in groups of between the channels and backplane bus Isolation Isolation tested with 600 V DC Ambient conditions Ambient temperature during operation min. o °C max. 60 °C connection method required front connector Dimensions Width Height 125 mm 	Potential separation		
 between the channels, in groups of between the channels and backplane bus Isolation Isolation tested with 600 V DC Ambient conditions Ambient temperature during operation min. max. 60 °C connection method required front connector 1x 40-pin Dimensions Width Height 125 mm 	Potential separation digital inputs		
between the channels and backplane bus Isolation Isolation tested with 600 ∨ DC Ambient conditions Ambient temperature during operation • min. • max. • 60 °C connection method required front connector Dimensions Width Height Yes Yes 100 ∨ DC 400 ∨ DC 4	 between the channels 	Yes	
Isolation tested with 600 V DC Ambient conditions Ambient temperature during operation • min. • max. 60 °C connection method required front connector Dimensions Width 40 mm Height 125 mm	 between the channels, in groups of 	8	
Isolation tested with 600 V DC Ambient conditions Ambient temperature during operation • min. • max. 60 °C connection method required front connector Dimensions Width Height 40 mm Height	 between the channels and backplane bus 	Yes	
Ambient conditions Ambient temperature during operation • min. • max. • max. • 60 °C connection method required front connector Dimensions Width 40 mm Height 125 mm	Isolation		
Ambient temperature during operation	Isolation tested with	600 V DC	
 min. o °C max. 60 °C connection method required front connector 1x 40-pin Dimensions Width 40 mm Height 125 mm 	Ambient conditions		
	Ambient temperature during operation		
connection method required front connector Dimensions Width 40 mm Height 125 mm	• min.	0 °C	
required front connector 1x 40-pin Dimensions 40 mm Height 125 mm	• max.	60 °C	
Dimensions Width 40 mm Height 125 mm	connection method		
Width 40 mm Height 125 mm	required front connector	1x 40-pin	
Height 125 mm	Dimensions		
	Width	40 mm	
Depth 120 mm	Height	125 mm	
	Depth	120 mm	

last modified:

8/15/2023