SIEMENS

Data sheet



SIMATIC S7-300, Interface module IM174, for connection of analog drives and stepper drives on isochronous PROFIBUS to Motion Control systems 4 channels (4 encoder inputs, 4 AO), configurable with STEP 7 V5.4 SP4

Supply voltage	
Rated value (DC)	

permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Input current	
Current consumption, may	500 mA

Yes

Current consumption, max.	JUU IIIA
from backplane bus 5 V DC, max.	100 mA

Encoder supply

5 V encoder supply

• 5 V	Yes
Output current, max.	1.2 A
Cable length, max.	25 m

24 V encoder supply

• 24 V	Yes
Output current, max.	1.4 A
Cable length, max.	100 m

Absolute encoder (SSI) encoder supply

 Absolute encoder (SSI) 	Yes
Short circuit protection	Voc

Short-circuit protection

ower 1055	
Power loss, typ.	12 W

Digital inputs

Number of digital inputs	10

Input voltage

• for signal "0"	-3 to +5V
• for signal "1"	+11 to +30\

Input current

for signal "0", max. (permissible quiescent current)	2 mA
• for signal "1" typ	8 mΔ

Input delay (for rated value of input voltage)

for standard inputs

— at "0" to "1"	min	15 119
— ai ii in i	min	15 119

Cable length

•	
 shielded, max. 	100 m

Digital outputs

Number of digital outputs 8

Switching capacity of the outputs	Short-circuit protection	Yes
with resistive load, max. on lamp load max. Output votage Rated value (DC) of re signal "1", min. of re signal "1" permissible range for 0 to 55 "C, min. of re signal "1" permissible range for 0 to 55 "C, min. of re signal "0" residual current, max. of re signal "0" residual current, max. of re signal "0" residual current, max. of "0" to "1", min. of residual current, max. of "0" to "1", min. of "0" to "1", min. of "0" to "1", min. of signal "0" residual current, max. of "0" to "1", min. of "0"		
		1 A
A Caled value (DC)	•	
Related value (DC)		
• for signal *1*, min. • for signal *1*, min. • for signal *1* permissible range for 0 to 55 °C, min. • for signal *1* permissible range for 0 to 55 °C, max. • for signal *1* permissible range for		24 V: L+
of ro signal "1", max. Output current		
Output current • for signal "1" permissible range for 0 to 55 °C, min. • for signal "1" permissible range for 0 to 55 °C, max. • for signal "0" residual current, max. Output delay with resistive load • "0" to "1", max. Switching frequency • with resistive load, max. • with inductive load, max. • with inductive load, max. • with inductive load, max. • Number of peraing cycles, max. • Number of operating cycles, max. • Number of operating cycles, max. • Switching deapactly of contacts • with resistive load, max. 600 m Analog outputs • Shielded, max. Analog outputs • Output ranges, voltage • 10 V to +10 V Analog value generation for the outputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. Encoder Number of connectable encoders, max. Connectable encoders • Incremental encoder (symmetrical) • Absolute encoder (SSI) • Permissible quiescent current (2-wire sensor), max. Encoder signals, incremental encoder (symmetrical) • Trace mark signal • Input voltage	_	
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 Input signal Data signal Clock signal Telegram length, parameterizable Clock frequency, max. Binary code Gray code Cable length, shielded, max. Interrupts/diagnostics/status information DATA, notDATA CL, notCL 13, 21, 24 bit 1.5 MHz; 187.5 KHz 1.5 MHz (parameterizable) Yes 250 m; 250 m at 187.5 kHz, 10 m at 1.5 MHz 		55 III, 55 III at IIIax. 500 kmz, 10 III at IIIax. 1 Wmz
 Data signal Clock signal Telegram length, parameterizable Clock frequency, max. Binary code Gray code Cable length, shielded, max. DATA, notDATA CL, notCL 13, 21, 24 bit 1.5 MHz; 187.5 KHz 1.5 MHz (parameterizable) Yes Gray code Yes Cable length, shielded, max. 250 m; 250 m at 187.5 kHz, 10 m at 1.5 MHz Interrupts/diagnostics/status information		5 V difference signal (place DS 422)
 Clock signal Telegram length, parameterizable Clock frequency, max. Binary code Gray code Cable length, shielded, max. CL, notCL 13, 21, 24 bit 15 MHz; 187.5 KHz 1.5 MHz (parameterizable) Yes Gray code Yes Cable length, shielded, max. Interrupts/diagnostics/status information CL, notCL 13, 21, 24 bit Yes Yes Yes Yes 250 m; 250 m at 187.5 kHz, 10 m at 1.5 MHz 	·	
 Telegram length, parameterizable Clock frequency, max. Binary code Gray code Cable length, shielded, max. Interrupts/diagnostics/status information 1.5 MHz; 187.5 KHz 1.5 MHz (parameterizable) Yes 250 m; 250 m at 187.5 kHz, 10 m at 1.5 MHz 	_	
 Clock frequency, max. Binary code Gray code Cable length, shielded, max. Interrupts/diagnostics/status information 1.5 MHz; 187.5 KHz 1.5 MHz (parameterizable) Yes 250 m; 250 m at 187.5 kHz, 10 m at 1.5 MHz 	_	
 Binary code Gray code Cable length, shielded, max. Unterrupts/diagnostics/status information Yes 250 m; 250 m at 187.5 kHz, 10 m at 1.5 MHz		
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• Cable length, shielded, max. 250 m; 250 m at 187.5 kHz, 10 m at 1.5 MHz Interrupts/diagnostics/status information		
Interrupts/diagnostics/status information		
		250 m; 250 m at 187.5 kHz, 10 m at 1.5 MHz
A1	Interrupts/diagnostics/status information	
Alarms		
Diagnostic alarm Yes	Alarms	
Drive interface		Yes

Number of drive interfaces	4
Analog drive	
Setpoint signal	
 Short-circuit proof 	Yes; max. 45 mA, min. 3.3 kOhm load impedance
 Rated voltage range 	-10.5 V to +10.5 V
 Output current 	-3 to +3 mA
Output controller enable	
Number of relay contacts	4
— Switching voltage, max.	30 V
Switching current, max.	1 A
 Switching capacity, max. 	30 V·A
 Number of switching cycles, min. 	50 000; at 30 V DC, 1 A
 Cable length, shielded, max. 	35 m
Stepper drive	
Differential output voltage, min.	2 V; R = 100 Ohm
Differential output voltage for signal "0", max.	1 V; For I = -20 mA
Differential output voltage for signal "1", min.	3.7 V ; 3.7 V at I = -20 mA; 4.5 V at I = -100 μ A,
Load resistance, min.	55 Ω
Output current, max.	60 mA
Pulse frequency	750 kHz
Cable length, shielded, max.	50 m; in hybrid operation with analog axes 35 m, in asymmetrical transmission 10 m
Potential separation	
Potential separation digital inputs	
Potential separation digital inputs	Yes; to encoders, analog outputs, DP interface; no to other DI/DOs
Potential separation digital outputs	
Potential separation digital outputs	Yes; to encoders, analog outputs, DP interface; no to other DI/DOs
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	55 °C
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Connection method	
required front connector	40-pin
Dimensions	
Width	160 mm
Height	125 mm
Depth	118 mm
Veights	TTO HARI
Weight, approx.	1 kg
rroigin, approx.	
last modified:	2/26/2021 🗗