

SIPLUS S7-1500 DI 16x24 V DC HF TX RAIL -40 ... +70 °C TX with 85 °C for 10 minutes with conformal coating Based on: 6ES7521-1BH00-0AB0 . 16 channels in groups of 16 Input delay 0,05 ... 20ms; Input type 3 (IEC 61131); diagnostics, Hardware interrupts



Figure similar

General information	
Product type designation	DI 16x24VDC HF
Product function	
• I&M data	Yes; I&M0 to I&M3
Operating mode	
• DI	Yes
• Counter	Yes
• MSI	Yes
Supply voltage	
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	
Current consumption, max.	20 mA; with 24 V DC supply
Power	

Power available from the backplane bus	1.1 W
Power loss	
Power loss, typ.	2.6 W
Digital inputs	
Number of digital inputs	16
Digital inputs, parameterizable	Yes
Source/sink input	P-reading
Input characteristic curve in accordance with IEC 61131, type 3	Yes
Digital input functions, parameterizable	
• Gate start/stop	Yes
• Freely usable digital input	Yes
• Counter	
— Number, max.	2
— Counting frequency, max.	1 kHz
— Counting width	32 bit
— Counting direction up/down	Up
Input voltage	
• Type of input voltage	DC
• Rated value (DC)	24 V
• for signal "0"	-30 to +5V
• for signal "1"	+11 to +30V
Input current	
• for signal "1", typ.	2.5 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	Yes; 0.05 / 0.1 / 0.4 / 1.6 / 3.2 / 12.8 / 20 ms
— at "0" to "1", min.	0.05 ms
— at "0" to "1", max.	20 ms
— at "1" to "0", min.	0.05 ms
— at "1" to "0", max.	20 ms
for interrupt inputs	
— parameterizable	Yes
for counter/technological functions	
— parameterizable	Yes
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
---	--------

Isochronous mode

Isochronous operation (application synchronized up to terminal)	Yes
Filtering and processing time (TCI), min.	80 µs; At 50 µs filter time
Bus cycle time (TDP), min.	250 µs

Interrupts/diagnostics/status information

Diagnostics function	Yes
----------------------	-----

Alarms

- | | |
|----------------------|-----|
| • Diagnostic alarm | Yes |
| • Hardware interrupt | Yes |

Diagnostic messages

- | | |
|---------------------------------|--------------------|
| • Monitoring the supply voltage | Yes |
| • Wire-break | Yes; to I < 350 µA |
| • Short-circuit | No |
| • Fuse blown | No |

Diagnostics indication LED

- | | |
|--|----------------|
| • RUN LED | Yes; Green LED |
| • ERROR LED | Yes; Red LED |
| • Monitoring of the supply voltage (PWR-LED) | Yes; Green LED |
| • Channel status display | Yes; Green LED |
| • for channel diagnostics | Yes; Red LED |
| • for module diagnostics | Yes; Red LED |

Potential separation

Potential separation channels

- | | |
|--|-----|
| • between the channels | No |
| • between the channels, in groups of | 16 |
| • between the channels and backplane bus | Yes |
| • between the channels and the power supply of the electronics | No |

Isolation

Isolation tested with	707 V DC (type test) and according to EN 50155 (routine test)
-----------------------	---

Standards, approvals, certificates

Railway application

- | | |
|----------------|---|
| • EN 50121-3-2 | Yes; EMC for rail vehicles |
| • EN 50121-4 | Yes; EMC for signal and telecommunications systems |
| • EN 50124-1 | Yes; Railway applications - overvoltage category OV2; pollution degree PD2; rated surge voltage UNi = 0.5 kV; UNm = 24 V DC |
| • EN 50125-1 | Yes; Rail vehicles - see ambient conditions |
| • EN 50125-2 | Yes; Stationary electrical equipment - see ambient conditions |

- EN 50125-3 Yes; Signal and telecommunications systems - see ambient conditions; vibrations and shocks: Application point outside of tracks (1 m to 3 m away from track)
- EN 50155 Yes; Rail vehicles - temperature class Tx, horizontal mounting position, salt spray Class ST2
- EN 61373 Yes; Rail vehicles - vibrations and shocks: Category 1 Class A/B
- Fire protection acc. to EN 45545-2 Yes; Rail vehicles - verification on request

Ambient conditions

Ambient temperature during operation	
• horizontal installation, min.	-40 °C; = Tmin
• horizontal installation, max.	70 °C; = Tmax; +85 °C for 10 min (Tx acc. to EN 50155)
Altitude during operation relating to sea level	
• Installation altitude above sea level, max.	2 000 m
• Ambient air temperature-barometric pressure-altitude	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m)
Relative humidity	
• With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Resistance	
Coolants and lubricants	
— Resistant to commercially available coolants and lubricants	Yes
Use in stationary industrial systems	
— to biologically active substances according to EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
— to chemically active substances according to EN 60721-3-3	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
— to mechanically active substances according to EN 60721-3-3	Yes; Class 3S4 incl. sand, dust, *
Use on land craft, rail vehicles and special-purpose vehicles	
— to biologically active substances according to EN 60721-3-5	Yes; Class 5B2 mold, fungus and dry rot spores (with the exception of fauna); Class 5B3 on request
— to chemically active substances according to EN 60721-3-5	Yes; Class 5C3 (RH < 75 %) incl. salt spray acc. to EN 50155 (ST2); *
— to mechanically active substances according to EN 60721-3-5	Yes; Class 5S3 incl. sand, dust; *
from supply voltage 1L+	
— Note regarding classification of environmental conditions acc. to EN 60721	* The supplied plug covers must remain in place over the unused interfaces during operation!

Decentralized operation

Prioritized startup	Yes
---------------------	-----

Dimensions

Width	35 mm
-------	-------

Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	240 g
Other	
Note:	For use in railway applications, also observe the product information "SIPLUS extreme RAIL" A5E37661960A Online Support article 109736776
last modified:	05/16/2018