

SIPLUS ET 200SP F-DI 4/8X24 V DC RAIL -25 ... +55°C T1 with 70°C for 10 min with conformal coating Based on: based on 6ES7136-6BA00-0CA0 . 15 mm overall width, up to PL E (ISO 13849-1)/ SIL3 (IEC 61508)



General information

Product type designation	F-DI 8x24VDC HF
Product function	
<ul style="list-style-type: none"> I&M data 	Yes; I&M0 to I&M3

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 (rated value)	75 mA; without load
Current consumption, max.	21 mA; From the backplane bus

Encoder supply

Number of outputs	8
Short-circuit protection	Yes; Electronic (response threshold 0.7 A to 1.8 A)
Output current	
<ul style="list-style-type: none"> up to 60 °C, max. 	0.3 A
24 V encoder supply	

- 24 V
 - Short-circuit protection
 - Output current, max.
- Yes; min. L+ (-1.5 V)
Yes
800 mA; Total current of all encoders

Power

Power available from the backplane bus 70 mW

Power loss

Power loss, typ. 4 W

Address area

Address space per module

- Inputs 6 byte
- Outputs 4 byte

Hardware configuration

Automatic encoding Yes

- Electronic coding element type F Yes

Digital inputs

Number of digital inputs 8

Source/sink input Yes; P-reading

Input characteristic curve in accordance with IEC 61131, type 1 Yes

Input voltage

- Type of input voltage DC
- Rated value (DC) 24 V
- for signal "0" -30 to +5V
- for signal "1" +15 to +30V

Input current

- for signal "1", typ. 3.7 mA

Input delay (for rated value of input voltage)

for standard inputs

- parameterizable Yes
- at "0" to "1", min. 0.4 ms
- at "0" to "1", max. 20 ms
- at "1" to "0", min. 0.4 ms
- at "1" to "0", max. 20 ms

for counter/technological functions

- parameterizable No

Cable length

- shielded, max. 1 000 m
- unshielded, max. 500 m

Interrupts/diagnostics/status information

Diagnostics function Yes, "Alarms/diagnostic messages" section in the manual

Alarms	
• Diagnostic alarm	Yes
• Hardware interrupt	No
Diagnostics indication LED	
• RUN LED	Yes; Green LED
• ERROR LED	Yes; Red LED
• Monitoring of the supply voltage (PWR-LED)	Yes; green PWR LED
• Channel status display	Yes; Green LED
• for channel diagnostics	Yes; Red LED
• for module diagnostics	Yes; green/red DIAG LED
Potential separation	
Potential separation channels	
• between the channels	No
• between the channels and backplane bus	Yes
• between the channels and the power supply of the electronics	No
Permissible potential difference	
between different circuits	75 V DC/60 V AC
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 T1, 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
Highest safety class achievable in safety mode	
• SIL in accordance with EN 50126, 50128, 50129	SIL 2; a higher safety integrity level is possible if tested and approved for the specific application under consideration of all local regulations.
Ambient conditions	
Ambient temperature during operation	

• horizontal installation, min.	-25 °C; = Tmin
• horizontal installation, max.	60 °C; = Tmax; +70 °C for 10 min (T1 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!
Dimensions	
Width	15 mm
Weights	
Weight, approx.	49 g
Other	
Note:	For use in railway applications, also observe the product information "SIPLUS extreme RAIL" A5E37661960A Online Support article 109736776
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