

## 8.1 Technical details

Technical details	
Application range	<b>Failsafe</b>
Maximum achievable category in accordance with <b>EN 954-1</b> base type, T-type	<b>4</b> base type, T-type
Maximum achievable SIL value	<b>SIL3</b>
Module's device code	<b>0E00h</b>
Number of FS input bits	<b>2</b>
Number of FS output bits	<b>1</b>
Support in system environment A	<b>yes</b> base type, T-type <b>no</b> R-type
from FS firmware version for other head modules	<b>4</b> base type, T-type
from FS firmware version PSSu H F PN	<b>1</b> base type
Support in system environment B	<b>yes</b>
from head module FS firmware version	<b>1.0.0</b> base type <b>1.5.0</b> R-type
Electrical data	
Internal supply voltage (module supply)	
Supply voltage range of module supply	<b>4.8 - 5.4 V</b>
Module's current consumption	<b>30 mA</b>
Module's power consumption	<b>0.15 W</b>
Periphery's supply voltage (periphery supply)	
Voltage range	<b>16.8 - 30.0 V</b>
Module's current consumption with no load	<b>28 mA</b>
Module's power consumption with no load	<b>0.67 W</b>
Max. power dissipation of the module	<b>1.50 W</b>
Inputs	
Number	<b>1</b>
Input voltage	<b>24 V DC</b>
Input current	<b>2.6 - 7.8 mA</b>
Min. threshold voltage when signal changes from "1" to "0"	<b>9.0 V</b>
Max. threshold voltage when signal changes from "0" to "1"	<b>10.0 V</b>
Potential isolation between input and voltage for the internal module bus	<b>yes</b>
Number of test pulse outputs	<b>1</b>
Number of outputs that can be configured as test pulses	<b>1</b>
Max. output current at "1" signal	<b>0.25 A</b>
Short circuit-proof	<b>yes</b>
Max. cable runs between test pulse output and input	<b>200 m</b>
Standard for voltage interruptions	<b>DIN V EN V 1954, EN61131-2, EN61496-1</b>
Outputs	
Number of dual-pole semiconductor outputs	<b>1</b>
Short circuit-proof	<b>yes</b>
Potential isolation between semiconductor output and voltage for the internal module bus	<b>yes</b>
Typ. output current at "1" signal and rated voltage of semiconductor output	<b>2.0 A</b>

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<b>Outputs</b>	
Permitted current range	<b>0.00 - 2.50 A</b>
Max. pulsed current for $t < 100$ ms	<b>12 A</b>
Residual current at "0" signal	<b>0.02 mA</b>
Max. duration of off time during self test	<b>800 <math>\mu</math>s</b>
Permitted loads	<b>inductive, capacitive, resistive</b>
<b>Times</b>	
Max. processing time for input when signal changes from "1" to "0"	<b>1.000 ms</b>
Max. processing time for input when signal changes from "0" to "1"	<b>1.000 ms</b>
Min. processing time for input when signal changes from "1" to "0"	<b>0.50 ms</b>
Min. processing time for input when signal changes from "0" to "1"	<b>0.50 ms</b>
Max. processing time for semiconductor output when signal changes from "1" to "0"	<b>0.020 ms</b>
Max. processing time for semiconductor output when signal changes from "0" to "1"	<b>0.020 ms</b>
<b>Environmental data</b>	
Climatic suitability	<b>EN 50125-1, EN 50125-3, EN 60068-2-14, EN 60068-2-1, EN 60068-2-2, EN 60068-2-30, EN 60068-2-78</b>
Ambient temperature in accordance with <b>EN 60068-2-14</b> base type, T-type	<b>-40 - 70 °C T-type</b> <b>0 - 60 °C base type</b>
Storage temperature in accordance with <b>EN 60068-2-1/-2</b>	<b>-25 - 70 °C base type</b> <b>-40 - 70 °C T-type</b>
Climatic suitability in accordance with <b>EN 60068-2-30, EN 60068-2-78</b>	<b>93 % r. h. at 40 °C base type, T-type</b>
Condensation	<b>yes T-type</b> <b>no base type</b>
EMC	<b>EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-6-2, EN 61000-6-4</b>
Vibration to <b>EN 60068-2-6</b> base type, T-type	
Frequency	<b>10 - 150 Hz base type, T-type</b>
Max. acceleration	<b>1g base type, T-type</b>
Broadband noise in accordance with <b>EN 60068-2-64</b>	
T-type	
Frequency	<b>5 - 500 Hz T-type</b>
Max. acceleration	<b>1.9grms T-type</b>
Shock stress	
<b>EN 60068-2-27</b> base type, T-type	<b>15g base type, T-type</b> <b>11 ms base type, T-type</b>
<b>EN 60068-2-29</b> base type, T-type	<b>10g base type, T-type</b> <b>16 ms base type, T-type</b>
Protection type in accordance with <b>EN 60529</b> base type, T-type	
Mounting (e.g. cabinet)	<b>IP54 base type, T-type</b>
Housing	<b>IP20 base type, T-type</b>
Terminals	<b>IP20 base type, T-type</b>
Airgap creepage in accordance with <b>EN 60664-1</b> base type, T-type	
Overvoltage category	<b>II base type, T-type</b>
Pollution degree	<b>2 base type, T-type</b>

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<b>Environmental data for railway applications</b>	
Installation location in accordance with <b>EN 50125-3</b> R-type	<b>Track area (1m – 3m) R-type</b>
Installation location in accordance with <b>EN 61373</b> R-type	<b>Category 1, Class A + B R-type</b>
Climatic suitability	<b>50125-1, 50125-3, 50155</b>
Max. operating height above sea level	<b>2,000 m R-type</b>
Ambient temperature in accordance with <b>EN 50155</b> R-type	<b>-40 ... +70 °C R-type</b>
Ambient temperature in accordance with <b>EN 50125-1</b> R-type, <b>EN 50125-3</b> R-type	<b>-40 ... +70 °C R-type</b>
Shock stress <b>EN 50125-3</b> R-type	<b>2 g R-type</b> <b>11 ms R-type</b>
Vibration to <b>50125-3</b> R-type	<b>0.23 g R-type</b> <b>5 ... 2,000 Hz R-type</b>
Shock stress <b>EN 61373</b> R-type	<b>5 g R-type</b> <b>30 ms R-type</b>
Broadband noise in accordance with <b>EN 61373</b> R-type	
Max. acceleration	<b>0.79 g RMS R-type</b>
Frequency	<b>5 ... 150 Hz R-type</b>
Protection type in accordance with <b>EN 60529</b> R-type	
Mounting (e.g. cabinet)	<b>IP51 R-type</b>
Housing	<b>IP20 R-type</b>
Terminals	<b>IP20 R-type</b>
Airgap creepage in accordance with <b>EN 50124-1</b> R-type	
Overvoltage category	<b>OV2 R-type</b>
Pollution degree	<b>PD1 R-type</b>
Supply interruptions in accordance with <b>EN 50155</b> R-type	<b>S2, C1, C2 R-type</b>
<b>Mechanical data</b>	
Housing material	
Front	<b>PC</b>
Bottom	<b>PC</b>
Coding	<b>PA</b>
Dimensions	
Height	<b>76.0 mm</b>
Width	<b>12.6 mm</b>
Depth	<b>60.2 mm</b>
Weight	<b>44 g base type</b> <b>46 g R-type, T-type</b>
Mechanical coding	
Type	<b>G</b>
Colour	<b>yellow</b>

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### Safety characteristic data

Unit	Operating mode	EN ISO 13849-1: 2006 PL	EN 954-1 Category	EN IEC 62061 SIL CL	PFH [1/h]	EN ISO 13849-1: 2006 T <sub>M</sub> [year]
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#### Input

digital inputs	single-channel	PL d (Cat. 2)	Cat. 2	SIL CL 2	9.10E-09	20
digital inputs	dual-channel	PL e (Cat. 3)	Cat. 3	SIL CL 3	3.10E-09	20
digital inputs	light beam device	PL e (Cat. 4)	Cat. 4	SIL CL 3	2.91E-09	20

#### Output

SC outputs (2-pin)	dual-channel	PL e (Cat. 4)	Cat. 4	SIL CL 3	1.37E-09	20
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All the units used within a safety function must be considered when calculating the safety characteristic data.

The standards current on **2009-10** apply.

## 8.2 Order reference

Order reference	
<b>Description</b>	<b>Order no.</b>
PSSu E F DI OZ 2 (Electronic module, base type)	312 220
PSSu E F DI OZ 2-T (Electronic module, T-type)	314 220
PSSu E F DI OZ 2-R (Electronic module, R-type)	315 220
<b>Base modules</b>	<b>Order no.</b>
PSSu BP 1/8S (Base module without C-rail with screw terminals)	312 600
PSSu BP 1/8S-T (Base module without C-rail with screw terminals, T-type)	314 600
PSSu BP 1/8C (Base module without C-rail with cage clamp terminals)	312 601
PSSu BP 1/8C-T (Base module without C-rail with cage clamp terminals, T-type)	314 601
PSSu BP-C 1/8S (Base module with C-rail and screw terminals)	312 610
PSSu BP-C 1/8S-T (Base module with C-rail and screw terminals, T-type)	314 610
PSSu BP-C 1/8C (Base module with C-rail and cage clamp terminals)	312 611
PSSu BP-C 1/8C-T (Base module with C-rail and cage clamp terminals, T-type)	314 611
PSSu BP 1/12S (Base module without C-rail with screw terminals)	312 618
PSSu BP 1/12S-T (Base module without C-rail with screw terminals, T-type)	314 618
PSSu BP 1/12C (Base module without C-rail with cage clamp terminals)	312 619
PSSu BP 1/12C-T (Base module without C-rail with cage clamp terminals, T-type)	314 619
PSSu BP-C1 1/12S (Base module with C-rail and screw terminals)	312 622
PSSu BP-C1 1/12S-T (Base module with C-rail and screw terminals, T-type)	314 622
PSSu BP-C1 1/12C (Base module with C-rail and cage clamp terminals)	312 623
PSSu BP-C1 1/12C-T (Base module with C-rail and cage clamp terminals, T-type)	314 623