



SIPLUS ET 200SP DI 4x120/230VAC TX rail based on 6ES7131-6FD01-0BB1 with conformal coating, -40...+70 °C, OT4 with ST1/2 (+85 °C for 10 minutes), digital input module, suitable for BU type B1, color code CC41, module diagnostics input type 3 (IEC 61131),

General information	
Product type designation	DI 4x120...230VAC ST
Firmware version	
• FW update possible	No
based on	<a href="#">6ES7131-6FD01-0BB1</a>
usable BaseUnits	BU type B1
Color code for module-specific color-coded label	CC41
Product function	
• I&M data	Yes; I&M0 to I&M3
• Isochronous mode	No
• suitable for operation on PROFINET R1 IMs	Yes
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	see entry ID: 109746275
Operating mode	
• DI	Yes
• Counter	No
• Oversampling	No
• MSI	No
Supply voltage	
Rated value (AC)	230 V
permissible range, upper limit (AC)	264 V
Reverse polarity protection	No
Input current	
Current consumption (rated value)	10 mA
Encoder supply	
Number of outputs	4
Short-circuit protection	No; when using BU type B1, a fuse with 10 A tripping current must be provided
Output current	
• up to 60 °C, max.	10 A
Power loss	
Power loss, typ.	1 W; Active power, load voltage 230 V, all inputs connected with 230 V, 50 Hz
Address area	
Address space per module	
• Address space per module, max.	1 byte; + 1 byte for QI information
Hardware configuration	
Automatic encoding	Yes
• Mechanical coding element	Yes
• Type of mechanical coding element	type C
Selection of BaseUnit for connection variants	

<ul style="list-style-type: none"> <li>• 1-wire connection</li> <li>• 2-wire connection</li> <li>• 3-wire connection</li> <li>• 4-wire connection</li> </ul>	BU type B1 BU type B1 BU type B1 BU type B1 + potential distributor module
<b>Digital inputs</b>	
Number of digital inputs	4
Digital inputs, parameterizable	Yes
Sourcing/sinking input	P-reading
Input characteristic curve in accordance with IEC 61131, type 3	Yes
<b>Input voltage</b>	
<ul style="list-style-type: none"> <li>• Rated value (AC)</li> <li>• for signal "0"</li> <li>• for signal "1"</li> </ul>	230 V 0V AC to 40V AC 74 V AC to 264 V AC
<b>Input current</b>	
<ul style="list-style-type: none"> <li>• for signal "1", typ.</li> </ul>	10.8 mA
<b>Input delay (for rated value of input voltage)</b>	
for standard inputs	
— parameterizable	No
— at "0" to "1", min.	1.5 ms
— at "0" to "1", max.	4 ms
— at "1" to "0", min.	10 ms
— at "1" to "0", max.	10 ms
<b>Cable length</b>	
<ul style="list-style-type: none"> <li>• shielded, max.</li> <li>• unshielded, max.</li> </ul>	1 000 m 600 m
<b>Encoder</b>	
Connectable encoders	
<ul style="list-style-type: none"> <li>• 2-wire sensor</li> </ul>	Yes
<b>Interrupts/diagnostics/status information</b>	
<b>Alarms</b>	
<ul style="list-style-type: none"> <li>• Diagnostic alarm</li> <li>• Maintenance interrupt</li> <li>• Hardware interrupt</li> </ul>	No No No
<b>Diagnoses</b>	
<ul style="list-style-type: none"> <li>• Monitoring the supply voltage</li> <li>• Wire break</li> <li>• Short-circuit</li> </ul>	No No No
<b>Diagnostics indication LED</b>	
<ul style="list-style-type: none"> <li>• Monitoring of the supply voltage (PWR-LED)</li> <li>• Channel status display</li> <li>• for channel diagnostics</li> <li>• for module diagnostics</li> </ul>	Yes; green PWR LED Yes; green LED No Yes; green/red DIAG LED
<b>Potential separation</b>	
Potential separation channels	
<ul style="list-style-type: none"> <li>• between the channels</li> <li>• between the channels and backplane bus</li> <li>• between the channels and the power supply of the electronics</li> </ul>	No Yes No
<b>Isolation</b>	
Isolation tested with	2 545 V DC (type test) and according to EN 50155 (routine test)
<b>Standards, approvals, certificates</b>	
Suitable for safety functions	No
<b>Railway application</b>	
<ul style="list-style-type: none"> <li>• EN 50121-3-2</li> <li>• EN 50121-4</li> <li>• EN 50121-5</li> <li>• EN 50124-1</li> </ul>	Yes; EMC for rail vehicles Yes; EMC for signal and telecommunications systems Yes; EMC for fixed installations and railway power supply equipment (shielded cables required) Yes; Railway applications - overvoltage category OV3; pollution degree PD2; UNm = 230 V AC

- EN 50125-1
- EN 50125-2
- EN 50125-3

Yes; Rail vehicles - see ambient conditions  
 Yes; Stationary electrical equipment - see ambient conditions  
 Yes; Signal and telecommunications systems - see ambient conditions; vibrations and shocks: Application point outside of tracks (1 m to 3 m away from track)  
 Yes; Rail vehicles - temperature class OT4, ST1/ST2, horizontal mounting position  
 Yes; Rail vehicles - vibrations and shocks: Category 1 Class A/B  
 Yes; For proof of conformity, see Service & Support

- EN 50155
- EN 61373
- Fire protection acc. to EN 45545-2

#### Ambient conditions

<b>Ambient temperature during operation</b>	
<ul style="list-style-type: none"> <li>• horizontal installation, min.</li> <li>• horizontal installation, max.</li> <li>• vertical installation, min.</li> <li>• vertical installation, max.</li> </ul>	<p>-40 °C; = Tmin (incl. condensation/frost)          70 °C; = Tmax; +85 °C for 10 min (OT4, ST1/ST2 acc. to EN 50155)          -40 °C; = Tmin          50 °C; = Tmax</p>
<b>Altitude during operation relating to sea level</b>	
<ul style="list-style-type: none"> <li>• Installation altitude above sea level, max.</li> <li>• Ambient air temperature-barometric pressure-altitude</li> </ul>	<p>2 000 m          Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m)</p>
<b>Relative humidity</b>	
<ul style="list-style-type: none"> <li>• With condensation, tested in accordance with IEC 60068-2-38, max.</li> </ul>	<p>100 %; RH incl. condensation / frost (no commissioning in bedewed state), horizontal installation</p>
<b>Resistance</b>	
<b>Coolants and lubricants</b>	
<ul style="list-style-type: none"> <li>— Resistant to commercially available coolants and lubricants</li> </ul>	<p>Yes; Incl. diesel and oil droplets in the air</p>
<b>Use in stationary industrial systems</b>	
<ul style="list-style-type: none"> <li>— to biologically active substances according to EN 60721-3-3</li> <li>— to chemically active substances according to EN 60721-3-3</li> <li>— to mechanically active substances according to EN 60721-3-3</li> <li>— Against mechanical environmental conditions acc. to EN 60721-3-3</li> </ul>	<p>Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request          Yes; Class 3C4 (RH &lt; 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *          Yes; Class 3S4 incl. sand, dust, *          Yes; Class 3M8 using the SIPLUS Mounting Kit ET 200SP (6AG1193-6AA00-0AA0)</p>
<b>Use on land craft, rail vehicles and special-purpose vehicles</b>	
<ul style="list-style-type: none"> <li>— to biologically active substances according to EN 60721-3-5</li> <li>— to chemically active substances according to EN 60721-3-5</li> <li>— to mechanically active substances according to EN 60721-3-5</li> <li>— Against mechanical environmental conditions acc. to EN 60721-3-5</li> <li>— against mechanical environmental conditions in agriculture acc. to ISO 15003</li> </ul>	<p>Yes; Class 5B2 mold, fungus and dry rot spores (with the exception of fauna); Class 5B3 on request          Yes; Class 5C3 (RH &lt; 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *          Yes; Class 5S3 incl. sand, dust; *          Yes; Class 5M2 using the SIPLUS Mounting Kit ET 200SP (6AG1193-6AA00-0AA0)          Yes; level 1 (Location LE) using the SIPLUS Mounting Kit ET 200SP (6AG1193-6AA00-0AA0)</p>
<b>Usage in industrial process technology</b>	
<ul style="list-style-type: none"> <li>— Against chemically active substances acc. to EN 60654-4</li> <li>— Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04</li> </ul>	<p>Yes; Class 3 (excluding trichlorethylene)          Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)</p>
<b>Remark</b>	
<ul style="list-style-type: none"> <li>— Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04</li> </ul>	<p>* The supplied plug covers must remain in place over the unused interfaces during operation!</p>
<b>Conformal coating</b>	
<ul style="list-style-type: none"> <li>• Coatings for printed circuit board assemblies acc. to EN 61086</li> <li>• Protection against fouling acc. to EN 60664-3</li> <li>• Electronic equipment on rolling stock acc. to EN 50155</li> <li>• Military testing according to MIL-I-46058C, Amendment 7</li> <li>• Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A</li> </ul>	<p>Yes; Class 2 for high reliability          Yes; Type 1 protection          Yes; Class PC2 protective coating acc. to EN 50155:2017          Yes; Discoloration of coating possible during service life          Yes; Conformal coating, Class A</p>
<b>Dimensions</b>	



Width	20 mm
Height	73 mm
Depth	58 mm
<b>Weights</b>	
Weight, approx.	36 g
<b>Other</b>	
Note:	for use in railway applications, also observe the product information "SIPLUS extreme RAIL" A5E37661960A, Online Support article 109736776
<b>Classifications</b>	




	Version	Classification
eClass	14	27-24-26-04
eClass	12	27-24-26-04
eClass	9.1	27-24-26-04
eClass	9	27-24-26-04
eClass	8	27-24-26-04
eClass	7.1	27-24-26-04
eClass	6	27-24-26-04
ETIM	10	EC001599
ETIM	9	EC001599
ETIM	8	EC001599
ETIM	7	EC001599
IDEA	4	3566
UNSPSC	15	32-15-17-05

**Approvals / Certificates**

**General Product Approval**

[Manufacturer Declaration](#)


[China RoHS](#)



General Product Approval	EMV	Railway
  <a href="#">China RoHS</a>		<a href="#">Confirmation</a>

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