SIEMENS

Data sheet

6AG2223-1PL32-1XB0



SIPLUS S7-1200 SM 1223 16DI/16DQ RLY T1 rail based on 6ES7223-1PL32-0XB0 with conformal coating, -25...+60 °C, OT1 with ST1/2 (+70 °C für 10 minutes), digital input/output 16 DI/16DQ, 16 DI 24 V DC, sink/source, 16 DQ relay 2 A

Figure similar

General information	
Product type designation	SM 1223, DI 16x24 V DC, DQ 16x relay
based on	6ES7223-1PL32-0XB0
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Input current	20.0 V
from backplane bus 5 V DC, max.	180 mA
Digital inputs	
 from load voltage L+ (without load), max. 	4 mA/input 11 mA/relay
output voltage / header	
supply voltage of the transmitters / header	
• present	Yes
Power loss	
Power loss, typ.	10 W
Digital inputs	
Number of digital inputs	16
• in groups of	2
Input characteristic curve in accordance with IEC 61131, type 1	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 40 °C, max.	16
horizontal installation	
— up to 40 °C, max.	16
— up to 50 °C, max.	16
vertical installation	
— up to 40 °C, max.	16
Input voltage	
Type of input voltage	DC
Rated value (DC)	24 V
• for signal "0"	5 V DC at 1 mA
• for signal "1"	15 V DC at 2.5 mA
Input current	
 for signal "0", max. (permissible quiescent current) 	1 mA
 for signal "1", min. 	2.5 mA
 for signal "1", typ. 	4 mA
Input delay (for rated value of input voltage)	
for standard inputs	

For instruct plops Provide instruction	— parameterizable	Yes; 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four
Content evaname Sold m • eshelded, max. Sold m Objetal extracts Sold m Number of digital coputs 10 • in groups of 4 Shott circuit protection No, to be provided externally Switcing capacity of the extpands 2 A • on iamp load, max. Sold With DC, 200 W with AC Output solding on - • Action value (AC) SV AC to 250 V AC Output solding on - • or signal 1* rated value 2 A Output delay with resistive load 10 ms • To to signal 1* rated value 2 A Output delay with resistive load 10 ms • To to signal 1* rated value 2 A Output delay with resistive load 2 A • Output sold sinsold 3 A (Current per mass)	for interrupt inputs	
• unshided, rax.900 mUprial exceptsWinter of diplat outputs18• in groups of4Stot-circul protectionNo. to be provided externallyStot-circul protection• with resistive load, rax.0. With DC, 200 With DC, 200 With ACOutput value (AC)• Raded value (AC)• Raded value (AC)• Raded value (AC)• Final value (AC)• Or asign (Tri raded value)• Final value (AC)• Or signal (Tri raded value)• Or signal (Tri raded value)	— parameterizable	Yes
supplies 300 m Diplies 300 m Stantistic of diplis duputs 16 • in groups of 4 Stantistic operation No. to be provided externally Stantistic operation 2 A • on item blad, max. 30 W with DC, 200 W with AC Output origing	Cable length	
Injection 16 Number of digital rotation 14 Short-sicult protection No. to be provided externally Short-sicult protection No. to be provided externally Short-sicult protection No. to be provided externally Short-sicult protection 20 • on any fock, max. 20 W with DC, 200 W with AC Output values - • Fared value (AC) 5 V AC to 30 V DC • Fared value (AC) 5 V AC to 250 V AC Output counce 2 A • for signal ** rated value 2 A • Or signal ** rated value 2 A • Output cols value 2 A • Number of relay outputs 16 • Rated supply values of relay outputs	• shielded, max.	500 m
Number of diplaid captols 16 • in groups of 4 Stont-circu protection No. to be provided externally Switching expanding expanding expanding external stores 2 A • on Iamp lead, max. 30 W with DC, 200 W with AC Output withe bodd, max. 30 W with DC, 200 W with AC Output withe Bodd - • Fraded value (AC) 5 V AC to 30 V DC • Or an agent 1" mated value 2 A • for agent 1" permissible range, max. 2 A • Or a dight 1" mated value 2 A • for agent 1" rated value 2 A • Or a dight 1" mated value 2 A • Or a dight 1" mated value 2 A • Or a dight 1" mated value 2 A • Or a dight (age group) 10 ms • Tradiacurrent of the outputs 16 • Raid a supply valtage of relay call L+ (DC) 24 V • Number of relay call L+ (DC) 24 V • Number of relay call L+ (DC) 24 V • Number of relay call L+ (DC) 24 V • Number of relay call L+ (DC) 24 V • Number of relay call L+ (DC)	• unshielded, max.	300 m
• in groups of 4 Short-circuit protection No: to be provided externally • with resistive load, max. 2 A • on lamp load, max. 30 W with DC, 200 W with AC Outset veltage • • Relet value (AC) 5 V DC to 30 V DC • Relet value (AC) 5 V DC to 30 V DC • Relet value (AC) 5 V DC to 30 V DC • Or signal "I" rated value 2 A • Or of signal "I" rated value 2 A • Or of signal "I" rated value 2 A • Or of signal "I" rated value 2 A • Or of signal "I" rated value 2 A • Or of signal "I" rated value 2 A • Or of signal "I" rated value 2 A • Or of signal "I" rated value 2 A • Or of signal "I" rated value 2 A • Or of signal "I" rated value 2 A • Output circuits for many cotputs 10 ms • "I'to 1", max. 10 ms • Pup 5 D °C, max. 8 A' Current per mass Relaty sotphy with a for any cotputs 18 • Number of relaty cotputs 18 • Number of relaty cotputs 2 A • Number of relaty cotputs 2 A • Output sotif relation max. 2 A • Number of operating cotputs, max. 30 W with DC, 20	Digital outputs	
Short-drug protection No: to be provided externally Switching capacity of the outputs 2 • with resistive load, max. 30 W with DC, 200 W with AC Output settings 5 V DC to 30 V DC • Rated value (DC) 5 V DC to 30 V DC • Rated value (DC) 5 V AC to 250 V AC Output settings 2 A • for signal "1' permissible load 2 A Output deley with resistive load 0 ms • '0" to '1", max. 10 ms • '1" to '1", max. 10 ms • To 10 or, max. 10 ms • Part of value of the outputs (per group) broccord installation • Number of relay outputs 16 • Rated samply voltage of rolay col L + (DC) 24 V • Number of operating cycles, max. mechanically 10 million, at rated load voltage 100 000 Switching graphicly donad, max. 2.A • on any load, max. 2.A	Number of digital outputs	16
Switching capacity of the outputs 2 A • of lamp load, max. 30 W with DC, 200 W with AC Output voltage - • Relet value (AC) 5 V DC to 30 V DC • Relet value (AC) 5 V DC to 30 V DC • Or signal "1" rated value 2 A • Output current 2 A • Output current 2 A • Output classitie range, max. 2 A • Output classitie range, max. 10 ms • "1" to "", max. 10 ms • "1" to "", max. 10 ms • "1" to "", max. 10 ms • output classitie group 8 A: Current per mass Relay outputs 16 • Relat outpoly contakes 2 A • outpol classities, max. 30 W with DC, 200 W with AC • Number of rolay outputs 16 • Related supply contage of rolay outputs 16 • Number of rolay outputs 16 • Number of rolay outputs 2 A • Output end load, max. 30 W with DC, 200 W with AC • - with resistive load, max. 30 W with DC, 200 W with AC • output end load,	• in groups of	4
• with resistive load, max.2 A• on lamp load, max.30 W with DC, 200 W with AC• Ordigut witing de5 V DC to 30 V DC• Rated value (DC)5 V AC to 230 V AC• Ordigut value (AC)5 V DC to 30 V DC• for signal '1' permissible range, max.2 A• for signal '1' permissible range, max.2 A• for signal '1' permissible range, max.10 ms• '0' to '1', max.10 ms• '0' to '1', max.10 ms• '1' to '0', max.10 ms• '1' to '0', max.10 ms• Total current of the adduts (ger group)• mut po 30 °C, mas.8 A; Current per massRelay subputs16• Rated suply values of relay out + (DC)'24 V• Number of relay outputs16• Rated supputs16• Number of age range products• with inductive load, max.2 A• on inam load, max.20 W with AC• on inam load, max.2 A• on inam load, max.3 0 W with AC• on inam load, max.2 A• on inam load, max.3 0 W with AC• on inam load, max.2 A• on inam load, max.2 A• on inam load, max.3 0 W with AC• on inam load, max.3 0 W with AC• on inam load, max.2 A• D	Short-circuit protection	No; to be provided externally
on lamp load, max.30 W with DC, 200 W with ACOutput voltage5 V DC to 30 V DCRated value (AC)5 V AC to 250 V ACOutput during (AC)5 V AC to 250 V ACOutput during (AC)2 Afor signal '1' rated value2 Afor signal '1' rated value2 Afor signal '1' rated value2 A'0' to '1', max.10 ms-'1' to '1', max.10 ms'1' to '1', max.10 msTotal current of the outputs (per group)10 msTotal current of the outputs (per group)10 msNumber of relay culputs16Relay culputs16Relay culputs10 msNumber of relay culputs16Relay culputs10 msNumber of relay culputs16Relay culputs30 W with DC, 200 W with AC- with inductive load, max.2 A- with map load, max.30 W with DC, 200 W with AC- with relative load, max.150 m- with relative load, max.150 mInterrupts/diagnosticis/status informationYesAurosYesDiagnostic sinctionYesAurosYesDiagnostic sinctionYesPotential separation diputsYesPotential separation diputsYesPotential separation diputsYesPotential separation diputsYesPotential separation diputs1500 V AC for 1 minutePotential separation diputs1500 V AC for 1 minutePotential separation diputs1500 V AC fo	Switching capacity of the outputs	
Output voltage F Vasted value (AC) F Rated value (AC) 5 VAC to 250 VAC Output output 2 A F or signal ''1 central value 2 A Output delay with resistive load - - ''0' to ''1' max. 10 ms - ''1' to ''1' max. 24 V Number of relay cult + (DC.) 24 V - ''1' to ''1' max. 20 Mont DC. 200 W with AC	 with resistive load, max. 	2 A
 Rated value (RC) S V RC to 30 V RC Output cancer S V RC to 30 V RC Output cancer S V RC to 30 V RC S V RC to 30 V RC S V RC to 30 V RC S V RC to 30 V RC S V RC to 30 V RC S V RC to 30 V RC S V RC to 30 V RC S V RC to 30 V RC to 40 V V RC S V RC to 30 V RC to 40 V V RC S V RC to 30 V RC to 40 V V RC S V RC to 30 V RC to 40 V V	 on lamp load, max. 	30 W with DC, 200 W with AC
• Rated value (AC) 5 V AC to 250 V AC Output detarement 2 A • for signal "1" permissible range, max. 2 A Output detarement 2 A • for signal "1" permissible range, max. 10 ms • '0' to '1', max. 10 ms • '0' to '1', max. 10 ms • '1' to '0', max. 10 ms • Total current of the outputs (or group) Total current of the outputs (or group) - who so '0', max. 8 A Current per mass Relay outputs 16 • Rated suble (AC) 24 V • Number of relay outputs 16 • Rated suble (Max. 2A • - on lamp load, max. 2 A - on lamp load, max. 160 m • unshielded, max. 160 m • on lamp load, max. 160 m • on lamp load, max. 160 m • Diagnostic slorem Yes Diagnostic slorem Yes Diagnostic slorem	Output voltage	
Output current 2 A • for signal "1" rated value 2 A • Output delay with resistive load - • '' to '', max. 10 ms • '' to '', max. 10 ms • '' to '', max. 10 ms - '' to '', max. 8 A, Current per mass Relay outputs 16 • Number of relay outputs 24 V • Number of relay outputs 30 W with DC, 200 W with AC with inductive load, max. 20 W models with inductive load, max. 30 W with DC, 200 W with AC with resistive load, max. 30 W mit DC, 200 W with AC - with resistive load, max. 10 So ''' - on inamp load, max. 30 W mit DC, 200 W with AC - with resistive load, max. 10 So '''	Rated value (DC)	5 V DC to 30 V DC
• for signal *1* rated value 2 A • for signal *1* permissible range, max. 2 A • Output desky thressitive load • • of to *1*, max. 10 ms • '1* to *0*, max. 10 ms • Total current of the outputs (per group) • horizontial installation • - up to 50 *C, max. 8 A: Current per mass Relay outputs 16 • Rated supply valtage of relay coll L + (DC) 24 V • Number of orelay outputs 16 • Rated supply valtage of relay coll L + (DC) 24 V • Number of orelay outputs 16 • Rated supply valtage of relay coll L + (DC) 24 V • Number of operating cycles, max. mechanically 10 million, at rated load voltage 100 000 Switching capacity of contracts 2 A - on lamp load, max. 2 A - on lamp load, max. 2 A - on lamp load, max. 30 W with AC - with resistive load, max. 160 m • unshelded, max. 160 m • Diagnostic sfunction Yes Di	Rated value (AC)	5 V AC to 250 V AC
• for signal ** permissible range, max. 2 A Output delay, with resistive load 10 ms • ``(*) * (*) *, max. 10 ms • Total current of the outputs (per group) 10 ms horizontal installation	Output current	
Output delay with resistive load 10 ms • ° ° ° ° ° °, max. 10 ms • ° ° ° ° °, max. 10 ms Total current of the outputs (per group) horizontal installation	 for signal "1" rated value 	2 A
• O' to *1', max. 10 ms • '' to '', max. 10 ms • Otal current of the audputs (per group) • up to 50 °C, max. 8 A; Current per mass • Relay outputs 16 • Number of relay outputs 16 • Rated supply voltage of relay coll L+ (DC) 24 V • Number of operating cycles, max. mechanically 10 million, at rated load voltage 100 000 Switching capacity of contacts - - with inductive load, max. 2 A - on imp load, max. 30 W with DC, 200 W with AC - with relative load, max. 2 A Cable length - • inielided, max. 150 m Interrupts/dilagnostics/status information Yes Diagnostics/status information Yes Diagnostics function Yes Diagnostics indication LED - • Or status of the inputs Yes Diagnostics indication LED Yes • Or status of the inputs Yes • Ior maintenance Yes Potential separation digital inputs Yes • between the channels in groups of 2 • between the channels in groups of 4 • between the channels in groups of 4 • between the channels in groups of 4	• for signal "1" permissible range, max.	2 A
• *** to *0*, max. 10 ms Total current of the outputs (ser group)	Output delay with resistive load	
Total current of the outputs (per group) hortzontal installation	• "0" to "1", max.	10 ms
horizontal installation	• "1" to "0", max.	10 ms
up to 50 °C, max. 8 A; Current per mass Relacy outputs 16 • Number of relay outputs 16 • Rated supply voltage of relay coil L+ (DC) 24 V • Number of operating cycles, max. mechanically 10 million, at rated load voltage 100 000 Switching capacity of contrateds - on Iamp load, max. 2 A on Iamp load, max. 30 W with DC, 200 W with AC with inductive load, max. 2 A on Iamp load, max. 500 m with inductive load, max. 500 m with insistive load, max. 500 m with insistive load, max. 500 m with resistive load, max. 500 m with insistive load, max. 500 m Nontright support Yes Diagnostic struction Yes Or status of the inputs Yes or status of the inputs Yes or status of the inputs	Total current of the outputs (per group)	
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• Number of relay outputs 16 • Rated supply voltage of relay coll L+ (DC) 24 V • Number of operating cycles, max. mechanically 10 million, at rated load voltage 100 000 Switching capacity of contacts - - with inductive load, max. 2 A - on lamp load, max. 30 W with DC, 200 W with AC - with resistive load, max. 2 A - unshelded, max. 150 m Interrupts/diagnostics/status information Yes Alarms Yes Diagnostic alarm Yes Diagnostic sinciation LED Yes - for status of the outputs Yes - betwen	— up to 50 °C, max.	8 A; Current per mass
• Rated supply voltage of relay coil L+ (DC) 24 V • Number of operating cycles, max. mechanically 10 million, at rated load voltage 100 000 Switching capacity of contacts 2 A - with inductive load, max. 2 A - on lamp load, max. 30 W with DC, 200 W with AC - with resistive load, max. 2 A Cable length 500 m • unshielded, max. 500 m • longnostic function Yes Diagnostic function Yes Diagnostic alarm Yes • Diagnostic alarm Yes Diagnostic alarm Yes Diagnostic function Yes Diagnostic alarm Yes Diagnostic indicaton LED - • for maintenance Yes • for maintenance Yes Potential separation digital inputs - • between the channels, in groups of <td>Relay outputs</td> <td></td>	Relay outputs	
• Number of operating cycles, max. mechanically 10 million, at rated load voltage 100 000 Switching capacity of contacts - - with inductive load, max. 2 A - on lamp load, max. 30 W with DC, 200 W with AC - with resistive load, max. 2 A Cable length 500 m • unshielded, max. 500 m • unshielded, max. 150 m Interrupts/diagnostics/status information Yes Alarms Yes Diagnostic function Yes Diagnostics indication LED Yes • for status of the inputs Yes • for status of the inputs Yes • for status of the outputs Yes • for status of the inputs Yes • for status of the outputs Yes • for maintenance Yes Potential separation 2 Potential separation digital inputs 4 • between the channels, in groups of 2 • between the channels and backplane bus 1500 V AC for 1 minute Permissible potential difference 500 V AC for 1 minute between the channels and backplane bus 1500 V AC for 1 min	 Number of relay outputs 	16
Switching capacity of contacts 2 A	 Rated supply voltage of relay coil L+ (DC) 	24 V
with inductive load, max. 2 A on lamp load, max. 30 W with DC, 200 W with AC with resistive load, max. 2 A Cable length	 Number of operating cycles, max. 	mechanically 10 million, at rated load voltage 100 000
- on lamp load, max. 30 W with DC, 200 W with AC - with resistive load, max. 2 A Cable length 500 m • shielded, max. 500 m • unshielded, max. 150 m Interrupts/diagnostics/status information Aarms Alarms Yes Diagnostics function Yes Alarms Yes Diagnostic alarm Yes Diagnostic indication LED Yes • for status of the inputs Yes • for status of the inputs Yes • for status of the outputs Yes • for status of the outputs Yes • for status of the channels, in groups of 2 Potential separation digital inputs Eelays • between the channels, in groups of 4	Switching capacity of contacts	
with resistive load, max. 2 A Cable length 500 m • shielded, max. 500 m • unshielded, max. 150 m Interrupts/diagnostics/status information 150 m Alarms Yes Diagnostics function Yes Alarms Yes Olignostic alarm Yes Diagnostics indication LED Yes • Monitoring the supply voltage Yes Diagnostics indication LED Yes • for status of the inputs Yes • for status of the outputs Yes • for status of the outputs Yes • for maintenance Yes Potential separation digital inputs • between the channels, in groups of 2 • between the channels, in groups of 4 • between the channels and backplane bus 1 500 V AC for 1 minute Pormissible potential difference between the channels and backplane bus 1 500 V AC for 1 minute Permissible potential difference between the channels and backplane bus 1 500 V AC for 1 minute Permissible potential difference between the channels and backplane bus 1 500 V AC for 1 minute Perene different circuits 750 V AC for 1 minute </td <td>- with inductive load, max.</td> <td>2 A</td>	- with inductive load, max.	2 A
Cable length 500 m • shielded, max. 500 m • unshielded, max. 150 m Interrupts/diagnostics/status information 150 m Alarms Yes Diagnostics function Yes Alarms Yes Obignostic alarm Yes Diagnostic alarm Yes Obignoses - • Monitoring the supply voltage Yes Diagnostics indication LED - • for status of the inputs Yes • for status of the outputs Yes • for maintenance Yes Potential separation digital inputs - • between the channels, in groups of 2 Potential separation digital outputs - • between the channels, in groups of 4 • between the channels, in groups of 4 • between the channels and backplane bus 1 500 V AC for 1 minute Pormissible potential difference - between different circuits	— on lamp load, max.	30 W with DC, 200 W with AC
• shielded, max. 500 m • unshielded, max. 150 m Interrupts/diagnostics/status information 150 m Alarms Yes Diagnostic function Yes Alarms Yes Obignostic function Yes Alarms Yes • Diagnostic alarm Yes Diagnoses Yes • Monitoring the supply voltage Yes Diagnostic indication LED Yes • for status of the inputs Yes • for status of the outputs Yes • for status of the outputs Yes • for maintenance Yes Potential separation Yes Potential separation digital inputs 2 • between the channels, in groups of 2 • between the channels, in groups of 4 • between the channels and backplane bus 1 500 V AC for 1 minute Permissible potential difference Isolation tested with 2 245 V DC (type test) and according to EN 50155 (routine test) Degree and class of protection	— with resistive load, max.	2 A
• unshielded, max. 150 m Interrupts/diagnostics/status information ////////////////////////////////////	Cable length	
Interrupts/diagnostics/status information Alarms Yes Diagnostics function Yes Alarms Yes Alarms Yes Alarms Yes Diagnostic alarm Yes Diagnoses Yes Objects indication LED Yes • for status of the inputs Yes • for status of the outputs Yes • for status of the outputs Yes • for status of the outputs Yes • for maintenance Yes Potential separation Yes Potential separation digital inputs • between the channels, in groups of 2 Potential separation digital outputs • between the channels, in groups of 4 • between difference Image: Contential difference between different circuits 750 V AC for 1 minute Isolation tested with 2 545 V DC (t	 shielded, max. 	500 m
Alarms Yes Diagnostics function Yes Alarms • Diagnostic alarm • Diagnostic alarm Yes Diagnoses • Monitoring the supply voltage • Monitoring the supply voltage Yes Diagnostics indication LED • • for status of the inputs Yes • for status of the outputs Yes • for maintenance Yes Potential separation Yes Potential separation digital inputs • • between the channels, in groups of 2 Potential separation digital outputs • • between the channels Relays • between the channels in groups of 4 • between the channels and backplane bus 1 500 V AC for 1 minute Permissible potential difference • between different circuits 750 V AC for 1 minute Isolation 2 545 V DC (type test) and according to EN 50155 (routine test) Degree and class of protection •	 unshielded, max. 	150 m
Diagnostics function Yes Alarms Yes Diagnostic alarm Yes Diagnostic alarm Yes Monitoring the supply voltage Yes Monitoring the supply voltage Yes for status of the inputs Yes for status of the inputs Yes for status of the outputs Yes for maintenance Yes Potential separation Potential separation digital inputs between the channels, in groups of 2 Potential separation digital outputs between the channels Relays between the channels in groups of 4 between the channels and backplane bus 1500 V AC for 1 minute Potential difference between different circuits 750 V AC for 1 minute Isolation tested with 2 545 V DC (type test) and according to EN 50155 (routine test) Degree and class of protection Diagnostice and backplane Diagnostice and backplane Diagnostice and backplane Diagnostice and class of protection Diagnostice and class of protection	Interrupts/diagnostics/status information	
Alarms Diagnostic alarm Yes Diagnoses Monitoring the supply voltage Yes Diagnostics indication LED for status of the inputs Yes for status of the outputs Yes for status of the outputs Yes for maintenance Yes for maintenance Yes for attais separation gital inputs between the channels, in groups of 2 between the channels and backplane bus 1500 V AC for 1 minute permissible potential difference between different circuits 750 V AC for 1 minute Isol	Alarms	Yes
• Diagnostic alarm Yes Diagnoses • Monitoring the supply voltage • Monitoring the supply voltage Yes Diagnostics indication LED • for status of the inputs Yes • for status of the outputs Yes • for status of the outputs Yes • for maintenance Yes Potential separation Yes Potential separation digital inputs • between the channels, in groups of 2 • between the channels, in groups of 4 • between the channels, in groups of 4 • between the channels, in groups of 4 • between the channels, in groups of • between the channels, in groups of • between the channels and backplane bus • between different circuits Pormissible potential difference between different circuits	Diagnostics function	Yes
Diagnoses • Monitoring the supply voltage Yes Diagnostics indication LED • • for status of the inputs Yes • for status of the outputs Yes • for status of the outputs Yes • for maintenance Yes Potential separation Yes Potential separation digital inputs 2 • between the channels, in groups of 2 Potential separation digital outputs - • between the channels, in groups of 4 • between the channels in groups of 4 • between the channels and backplane bus 1 500 V AC for 1 minute Permissible potential difference - between different circuits 750 V AC for 1 minute Isolation 2 545 V DC (type test) and according to EN 50155 (routine test) Degree and class of protection -	Alarms	
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Diagnostics indication LED • for status of the inputs Yes • for status of the outputs Yes • for maintenance Yes Potential separation Yes Potential separation digital inputs • • between the channels, in groups of 2 Potential separation digital outputs • • between the channels, in groups of 4 • between the channels, in groups of 4 • between the channels, in groups of 4 • between the channels in groups of 4 • between the channels in groups of 500 V AC for 1 minute Permissible potential difference 500 V AC for 1 minute Isolation 2 545 V DC (type test) and according to EN 50155 (routine test) Degree and class of protection 2	Diagnoses	
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between the channels and backplane bus Permissible potential difference between different circuits 750 V AC for 1 minute Isolation Isolation Isolation tested with 2 545 V DC (type test) and according to EN 50155 (routine test) Degree and class of protection	between the channels	Relays
Permissible potential difference between different circuits 750 V AC for 1 minute Isolation Isolation tested with 2 545 V DC (type test) and according to EN 50155 (routine test) Degree and class of protection	 between the channels, in groups of 	4
between different circuits 750 V AC for 1 minute Isolation Isolation tested with Degree and class of protection 2 545 V DC (type test) and according to EN 50155 (routine test)	 between the channels and backplane bus 	1 500 V AC for 1 minute
Isolation Isolation tested with Degree and class of protection	Permissible potential difference	
Isolation tested with 2 545 V DC (type test) and according to EN 50155 (routine test) Degree and class of protection	between different circuits	750 V AC for 1 minute
Degree and class of protection	Isolation	
Degree and class of protection	Isolation tested with	2 545 V DC (type test) and according to EN 50155 (routine test)
	Degree and class of protection	
	IP degree of protection	IP20

Standards, approvals, certificates	
Ecological footprint	
environmental product declaration	Yes
Global warming potential	
— global warming potential, (total) [CO2 eq]	123 kg
 — global warming potential, (during production) [CO2 eq] 	12.1 kg
— global warming potential, (during operation) [CO2 eq]	111 kg
— global warming potential, (after end of life cycle) [CO2 eq]	-0.434 kg
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 OT1, ST1/ST2, horizontal mounting position
• EN 61373	Yes; Rail vehicles - vibrations and shocks: Category 1 Class A/B
• Fire protection acc. to EN 45545-2	Yes; For proof of conformity, see Service & Support
Ambient conditions	
Free fall	
 Fall height, max. 	0.3 m; five times, in product package
Ambient temperature during operation	
• min.	-25 °C; = Tmin (incl. condensation/frost)
• max.	60 °C; = Tmax; +70 °C for 10 min (OT1, ST1/ST2 acc. to EN 50155); number of simultaneously switched on outputs: 8 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 16 at 55 °C horizontal or 45 °C vertical
 vertical installation, min. 	-25 °C; = Tmin
 vertical installation, max. 	50 °C; = Tmax
Ambient temperature during storage/transportation	
• min.	-40 °C
max. Altitude during exerction relating to applicately lower	70 °C
Altitude during operation relating to sea level	2 000 m
 Installation altitude above sea level, max. Ambient air temperature-barometric pressure-altitude 	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m)
Relative humidity	111111 1111ax at 1 140 11Fa 735 11Fa (-1 000 111 +2 000 111)
With condensation, tested in accordance with IEC 60068-	100 %; RH incl. condensation / frost (no commissioning in bedewed state), horizontal installation
2-38, max. Resistance	nonzontarinistanation
Coolants and lubricants	
	Yes; Incl. diesel and oil droplets in the air
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 60068-2-52 (severity degree 3); *
 — to mechanically active substances according to EN 60721-3-5 	Yes; Class 5S3 incl. sand, dust; *
Usage in industrial process technology	
 Against chemically active substances acc. to EN 60654-4 	Yes; Class 3 (excluding trichlorethylene)
— Environmental conditions for process, measuring	Yes; Level GX group A/B (excluding trichlorethylene; harmful gas

and control systems acc. to ANSI/ISA-71.04	concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)
Remark	
 — Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 	* The supplied plug covers must remain in place over the unused interfaces during operation!
Conformal coating	
 Coatings for printed circuit board assemblies acc. to EN 61086 	Yes; Class 2 for high reliability
 Protection against fouling acc. to EN 60664-3 	Yes; Type 1 protection
 Electronic equipment on rolling stock acc. to EN 50155 	Yes; Class PC2 protective coating acc. to EN 50155:2017
 Military testing according to MIL-I-46058C, Amendment 7 	Yes; Discoloration of coating possible during service life
 Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC- CC-830A 	Yes; Conformal coating, Class A
connection method	
required front connector	Yes
Mechanics/material	
Enclosure material (front)	
Plastic	Yes
Dimensions	
Width	70 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	350 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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