## SIEMENS

## Data sheet

## 6AG1131-6BF61-7AA0



SIPLUS ET 200SP DI 8x24 V DC SRC BA based on 6ES7131-6BF61-0AA0 with conformal coating, -40...+70 °C, digital input module, suitable for BU type A0, color code CC02, source input, (NPN, sourcing input) input type 1 (IEC 61131), input delay 0.05..20 ms module diagnostics for: supply voltage

General information	
Product type designation	DI 8x24 VDC SRC BA
Firmware version	
<ul> <li>FW update possible</li> </ul>	No
usable BaseUnits	BU type A0
Color code for module-specific color identification plate	CC02
Product function	
• I&M data	Yes; I&M0 to I&M3
Isochronous mode	No
Operating mode	
• DI	Yes
Counter	No
Oversampling	No
• MSI	No
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Encoder supply	
Short-circuit protection	No
Power loss	
Power loss, typ.	1.5 W
Address area	
Address space per module	
Inputs	1 byte
Hardware configuration	
Automatic encoding	Yes
Selection of BaseUnit for connection variants	
<ul> <li>1-wire connection</li> </ul>	BU type A0
2-wire connection	BU type A0
3-wire connection	BU type A0 with AUX terminals
4-wire connection	BU type A0 + Potential distributor module
Digital inputs	
Number of digital inputs	8
Digital inputs, parameterizable	Yes
Source/sink input	Sourcing
Input characteristic curve in accordance with IEC 61131, type 1	Yes

d 30 to 500 µs, depending on line length) - at "0" to "1", min. - at "0" to "1", max. 20 ms 20 ms 20 ms Cable length • shielded, max. 200 m Cable length • shielded, max. 200 m Cannectable encoders Connectable encoders Connectable encoders Connectable encoders Connectable encoders Connectable encoders Connectable encoders Connectable encoders • 2-wire sensor - permissible quiescent current (2-wire sensor), max. Plagnostic strontation Diagnostic strontation Diagnostic strontation readable • Diagnostic strontation readable • Monitoring the supply voltage • Diagnostic information readable • Monitoring of encoder years • Diagnostic information readable • Monitoring the supply voltage • Monitoring of encoder supply • Wire break • Monitoring the supply voltage (PWR-LED) • Wire break • Monitoring of the supply voltage (PWR-LED) • Channel status display • for channel status display • for channel signostics • between the channels • between the channels and backplane bus • between the channels and backplane pu		
<ul> <li>or signal "0"</li> <li>30 Vio 5 V (reference potential is L+)</li> <li>for signal "1"</li> <li>for signal "1", typ.</li> <li>find caurent</li> <li></li></ul>	Input voltage	
- for signal "1"     - 11 V to -30 V (reference potential is L*)      input current     for standard or funds     for standards or funds     for standards     for standardstand standards     for standards     for standards	<ul> <li>Rated value (DC)</li> </ul>	24 V
Input delay (for rated value of input voltage)         6 mA           Input delay (for rated value of input voltage)         6 mA           - parameterizable         Yes: 0.05 / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms (in each case + delay of 30 to 500 µs, depending on line length)           - at 'O' to 'T', min.         0.5 ms           - at 'T' to 'T', min.         0.05 ms           - at 'T' to 'T', max.         20 ms           Cable length         20 ms           - at 'T' to 'T', max.         20 ms           Cable length         200 m           - at 'T' to 'T', max.         20 ms           Cable length         1000 m           - unshielded, max.         1000 m           - unshielded, max.         1000 m           - permissible quiescent current (2-wire sensor), max.         1.5 mA           - Diagnostic function         Yes           - Attribuics at an other adable         Yes           · Montoring of encoder power supply         Yes           · Montoring of encoder power supply         No           · Or channel diagnostics         No           · Or channel diagnostics         Yes; green PUR LED           · Channel staus diaply         Yes; green PUR LED           · Channel staus diaply voltage (PWR-LED)         Yes; green LED	● for signal "0"	30 V to -5 V (reference potential is L+)
for signal "1", typ     for signal "1", typ     for signal "1", typ     for signal relate of input voltage     at "0" to "1", max. 20 ms     do so so up a. depending on line length     for signal relate of input voltage     sheleded, max. 20 ms     sheleded, max. 20 ms     sheleded, max. 20 ms     cateford max. 20 ms     ca	• for signal "1"	-11 V to -30 V (reference potential is L+)
Input delay, för raled value of input voltage) för stand value of input voltage för stand value of input voltage input delay, för rale, value of rale, va	Input current	
for standard inputs         Yes         0.5/0.1/0.4/0.8/1.8/3.2/12.8/20 ms (in each case + delay of 30 to 500 µs, depending on line length)           - at "0" to "1", max.         20 ms           - at "1" to "0", max.         20 ms           Cable length         0.05 ms           - at "1" to "0", max.         20 ms           Cable length         0.05 ms           - sheleled, max.         200 m           Connectable encoders         200 m           Connectable encoders         76 s           - Write sensor         1.5 mA           - Diagnostic fairmation         Yes           Diagnostic fairmation metadable         Yes           Obignostic fairm         Yes           Diagnostic fairmation         Yes           Diagnostic fairmation readable         Yes           Obignostic fairmation readable         Yes           Obignostic fairmation readable         Yes           - Diagnostic fairmation         Yes           - Diagnostic fairmation readable         Yes           - Monitoring the supply voltage         Yes           - Diagnostic fairmation         Yes; green PWR LED           - Monitoring of the supply voltage (PWR-LED)         Yes; green LED           - Kortonduci dagnostics         No	<ul> <li>for signal "1", typ.</li> </ul>	6 mA
	Input delay (for rated value of input voltage)	
of 30 to 500 µs, depending on line length)     0.05 ms	for standard inputs	
- at "0" to "1", min. 0.05 ms - at "1" to "0", max. 20 ms - at "1" to "0", max. 200 ms - at "1" to "0", max. 200 ms - unshielded, max. 1000 m - unshielded, max. 200 m Encoder Encoder Encoder Encoder - permissible quiescent current (2-wire sensor), max. Interrupts/dilignostics/status information Diagnostics function Yes - permissible quiescent current (2-wire sensor), max. Interrupts/dilignostics/status information Diagnostic sfunction Yes - Diagnostic sfunction Yes - Diagnostic atam Yes Diagnostic atam Yes Diagnostic atam Yes Diagnostic information readable Yes - Monitoring the supply voltage - parameterizable Yes - Monitoring of encoder power supply No - Wire-break - Monitoring of the supply voltage (PWR-LED) - Channel status display Yes; green PWR LED - Channel status display (Yes; green PWR LED - Channel diagnostics - Yes; green LED - Or and status display (Yes; green LED - for channel diagnostics - Yes; green LED - between the channels - between the channels and backplane bus - between the channels - between the channels - between the channels and backplane bus - between the channels - between the channels - between the channels - between the channels and backplane bus - bet	— parameterizable	Yes; 0.05 / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms (in each case + delay
- at 1°1 to 1°1, max. 20 ms - at 1°1 to 1°1, max. 20 ms Cable length • sheledet, max. 200 m • unshielded, max. 200 m Encoder Connectable encoders • 2-wire sensor • Yes • 2-wire sensor • Yes • 2-wire sensor • Yes • 2-wire sensor • Yes • Diagnostic status information • Yes • Diagnostic status information • Yes • Diagnostic stratus information • Yes • Diagnostic information readable • Yes • Diagnostic information readable • Yes • Monitoring the supply voltage • Yes • Monitoring the supply voltage • Yes • Monitoring of encoder power supply • No • Wire break • No • Short-circuit • No • Channel status display • Yes; green PWR LED • Channel status display • Yes; green VWR LED • Dottail asparation • Ves • between the channels and backplane bus • Yes • between the channels and backplane bus • Yes • Other • Oth		of 30 to 500 µs, depending on line length)
- at 111 to T0, min. 20 ms clobe length - at 111 to T0, max. 20 ms clobe length - shielded, max. 20 m constant of the shielded of the shie	— at "0" to "1", min.	0.05 ms
- at "1" to "0", max. 20 ms Cable length  shelded, max. 1000 m unshelded, max. 200 m  Connectable encoders  Connectable encotens  Connectable encoders  Connectable encotens  Co	— at "0" to "1", max.	20 ms
Cable length       1000 m         • shielded, max.       200 m         Encoder       Encoder         Connectable encoders       • 2-wire sensor        permissible quiescent current (2-wire sensor), max.       1.5 mA         Interrupts/diagnostics/status information       Yes         Diagnostic information readable       Yes         • Monitoring of encoder power supply       No         • Short-Circuit       No         • Short-Circuit       No         • Channel status display       Yes; green LED         • for module diagnostics       Yes; green LED         • for module diagnostics       Yes; green/well DIAG LED         Potential separation       Yes         Potential separation       Yes         Potential separation       No         • between the channels and backplane bus       Yes         • between the channels and backplane bus       Yes	— at "1" to "0", min.	0.05 ms
shielded, max, 200 m     unshielded, max, 200 m     connectable encoders     20 vire sensor         permissible quiescent current (2-wire sensor), max, 15 mA	— at "1" to "0", max.	20 ms
unshielded, max.      200 m       Encoder       Connectable encoders	Cable length	
Encoder         Connectable encoders         • 2-wire sensor       Yes	• shielded, max.	1 000 m
Connectable encoders       Yes        ywire sensor       Yes	• unshielded, max.	200 m
Connectable encoders       Yes        ywire sensor       Yes	Encoder	
— permissible quiescent current (2-wire sensor), max.       1.5 mA         Interrupts/diagnostics/status information       Yes         Diagnostic am       Yes         Airms       • Diagnostic alarm         • Diagnostic information readable       Yes         • Monitoring the supply voltage       Yes         — parameterizable       Yes         • Monitoring of encoder power supply       No         • Wire-break       No         • Short-circuit       No         • Short-circuit       No         • Orannel status display       Yes; green PWR LED         • Orannel diagnostics       No         • Orannel diagnostics       No         • Orannel status display       Yes; green/red DIAG LED         Potential separation       Potential separation         Potential separation       Yes         • between the channels and backplane bus       Yes         • between the channels and backplane bus       Yes         • between the channels and the power supply of the electronics       No         Stalation       Solation         Stalatode, approvals, certificates       No         Ambient temperature during operation       40 °C; = Tmin (incl. condensation/frost)         • horizontal installation, min.		Yes
max.           Interrupts/idiagnostics/status information           Diagnostic sinction           Alarms <ul> <li>Diagnostic silor</li> <li>Provide the supply voltage</li> <li>Provide the supply voltage (PWR-LED)</li> <li>Provide the supply voltage (PWR-LED)</li></ul>		
Interrupts/diagnostics/status information         Yes           Alarms <ul> <li>Diagnostic alarm</li> <li>Ves</li> </ul> Diagnostic information readable         Yes                Diagnostic information readable         Yes                Monitoring the supply voltage         Yes                — parameterizable             Yes                Monitoring of encoder power supply             No                Monitoring of encoder power supply             No                Monitoring of the supply voltage (PWR-LED)             Yes; green PWR LED                Monitoring of the supply voltage (PWR-LED)             Yes; green LED                Monitoring of the supply voltage (PWR-LED)             Yes; green/red DIAG LED                Channel status display             Yes; green/red DIAG LED                Potential separation                Potential separation                Detayse and backplane bus              No                between the channels and backplane bus             Yes               No              Solation               Solation             Solatords, approvals, cortificates		1.5 H/A
Diagnostics function         Yes           Alarms         •           • Diagnostic alarm         Yes           • Diagnostic alarm         Yes           • Diagnostic alarm         Yes           • Diagnostic information readable         Yes           • Monitoring the supply voltage         Yes           • parameterizable         Yes           • Monitoring of encoder power supply         No           • Short-circuit         No           • Short-circuit         No           • Channel status display         Yes; green PWR LED           • Channel status display         Yes; green PWR LED           • for channel diagnostics         Yes; green ILED           • for module diagnostics         Yes; green/red DIAG LED           Potential separation         Potential separation channels           • between the channels and backplane bus         Yes           • between the channels and backplane bus         Yes           • between the channels and backplane bus         Yes           • between the channels and the power supply of the         Isolation           Isolation         Suitable for safety functions           Ambient conditions         No           Ambient conditions         No           Antisent conditio		
Alarms       Diagnostic alarm       Yes         Diagnostic information readable       Yes <ul> <li>Diagnostic information readable</li> <li>Yes</li> <li>Monitoring the supply voltage</li> <li>Yes</li> <li>Monitoring of encoder power supply</li> <li>No</li> <li>Short-circuit</li> <li>No</li> <li>Diagnostics indication LED</li> <li>Yes; green PWR LED</li> <li>Yes; green PWR LED</li> <li>Channel status display</li> <li>Yes; green LED</li> <li>Channel status display</li> <li>Yes; green/red DIAG LED</li> <li>Potential separation</li> <li>Potential separation</li> <li>Potential separation</li> <li>Potential separation</li> <li>Solation tested with</li> <li>Solation tested with</li> <li>Solation tested with</li> <li>Solation tested with</li> <li>Tori X DV DC (type test)</li> <li>Standards, approvals, certificates</li> <li>Suitable for safety functions</li> <li>No</li> <li>Ambient conditions</li> <li>Anbient conditions</li> <li>Anbient conditions</li> <li>Anbient it temperature during operation</li> <li>Anbient alistaliation, min.</li> <li>Anbient alistaliation, max.</li> <li>Yo "C; = Tmin (incl. condensation/frost)</li> <li>Anbient alistaliation, max.</li> <li>Yo "C; = Tmax</li> <li>Altitude during operation elementer pressure- alitude</li> <li>Installation alitude above sea level</li> <li>Installation alitude above sea level, max.</li> <li>Ambient ali temperature-barometric pressure- alitude</li> <li>With condensation, tested in accordance with IEC</li> <li>With condensation, tested in accordance with IEC</li> <li>With condensation, tested in accordance with IEC</li> </ul>		Vos
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Diagnoses       Ves            • Diagnostic information readable        Yes             • Monitoring the supply voltage        Yes             • Monitoring of encoder power supply        No             • Monitoring of encoder power supply        No             • Wire-break        No             • Short-cricuit        No             • Monitoring of the supply voltage (PWR-LED)        Yes; green PWR LED             • Channel status display        Yes; green LED             • for channel diagnostics        No             • for module diagnostics        Yes             • between the channels        Ves             • between the channels        Yes             • between the channels and backplane bus        Yes             • between the channels        No             • Solation        Isolation             • Solation        Solation		N/
• Diagnostic information readable       Yes         • Monitoring the supply voltage       Yes         parameterizable       Yes         • Monitoring of encoder power supply       No         • Wire-break       No         • Short-circuit       No         Diagnostics indication LED       Yes; green PWR LED         • Monitoring of the supply voltage (PWR-LED)       Yes; green PWR LED         • Channel status display       Yes; green PWR LED         • for channel diagnostics       No         • for channel diagnostics       No         • for module diagnostics       Yes; green/red DIAG LED         Potential separation       Potential separation         Potential separation channels       No         • between the channels and backplane bus       Yes         • between the channels and the power supply of the electronics       No         Isolation       707 V DC (type test)         Standards, approvals, cortificates       Sutable for safety functions         Ambient temperature during operation       -40 °C; = Tmin (incl. condensation/frost)         • horizontal installation, min.       -40 °C; = Tmin (incl. condensation/frost)         • horizontal installation, max.       70 °C; = Tmax         Altitude during operation relating to sea level       6000 m <td></td> <td>Yes</td>		Yes
<ul> <li>Monitoring the supply voltage</li> <li>parameterizable</li> <li>Yes</li> <li>monitoring of encoder power supply</li> <li>No</li> <li>Wire-break</li> <li>Short-circuit</li> <li>No</li> <li>Short-circuit</li> <li>No</li> <li>Diagnostics indication LED</li> <li>Channel status display</li> <li>Yes; green PWR LED</li> <li>Channel diagnostics</li> <li>No</li> <li>for channel diagnostics</li> <li>Yes; green/red DIAG LED</li> <li>Potential separation</li> <li>Detween the channels</li> <li>between the channels and backplane bus</li> <li>between the channels and backplane bus</li> <li>between the channels and backplane bus</li> <li>between the channels and the power supply of the electronics</li> <li>Isolation</li> <li>Isolation</li> <li>Suitable for safety functions</li> <li>Ambient temperature during operation</li> <li>horizontal installation, min.</li> <li>40 °C; = Tmix</li> <li>Altitude during operation relating to sea level</li> <li>Installation altitude above sea level, max.</li> <li>Ambient air temperature-barometric pressure-airting of Circuit Circuit (rmax - 10 K) at 795 hPa (-1 000 m + 2000 m) // Tmin (Tmax - 20 K) at 658 hPa 559 hPa (+3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 559 hPa (+3 500 m + 3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 559 hPa (+3 500 m + 3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 559 hPa (+3 500 m + 3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 559 hPa (+3 500 m + 3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 559 hPa (+3 500 m + 3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 559 hPa (+3 500 m + 3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 559 hPa (+3 500 m + 3 500 m) // Tmin (Tmax -</li></ul>		
parameterizable     Yes       • Monitoring of encoder power supply     No       • Wire-break     No       • Short-circuit     No       Diagnostics indication LED     Yes; green PWR LED       • Monitoring of the supply voltage (PWR-LED)     Yes; green PWR LED       • Channel status display     Yes; green LED       • for rhannel diagnostics     No       • for module diagnostics     Yes; green/red DIAG LED       Potential separation     No       • between the channels     No       • between the channels and backplane bus     Yes       • between the channels and the power supply of the electronics     No       Isolation     100 V/ DC (type test)       Standards, approvals, certificates     No       Suitable for safety functions     No       Ambient temperature during operation     -40 °C; = Tmax       Anbient a installation, min.     -40 °C; = Tmax       Altitude during operation relating to sea level     5 000 m       • Installation altitude above sea level, max.     5 000 m       • Ambient air temperature-barometric pressure- alitude     Tmin Tmax at 1140 hPa 795 hPa (-1 000 m +2000 m) // Tmin (Tmax -10 K) at 795 hPa 650 hPa (+3 500 m +3 000 m)	-	
<ul> <li>Monitoring of encoder power supply</li> <li>Wire-break</li> <li>Short-circuit</li> <li>No</li> <li>Short-circuit</li> <li>No</li> <li>Short-circuit</li> <li>No</li> <li>Diagnostics indication LED</li> <li>Channel status display</li> <li>Yes; green PWR LED</li> <li>Channel status display</li> <li>Yes; green LED</li> <li>Channel diagnostics</li> <li>No</li> <li>For channel diagnostics</li> <li>Yes; green /red DIAG LED</li> <li>Potential separation</li> <li>Potential separation channels</li> <li>between the channels and backplane bus</li> <li>between the channels and the power supply of the electronics</li> <li>Isolation</li> <li>Solation</li> <li>Solation tested with</li> <li>707 V DC (type test)</li> <li>Standards, approvals, certificates</li> <li>Suitable for safety functions</li> <li>Ambient temperature during operation</li> <li>horizontal installation, min.</li> <li>-40 °C; = Tmin (incl. condensation/frost)</li> <li>r) °C; = Tmax</li> <li>Attitude during operation tested with</li> <li>Solo0 m</li> <li>Tmin Trax at 1140 hPa 795 hPa (-1 000 m +2000 m) // Tmin (Tmax -10 K) at 795 hPa 558 hPa (+2 000 m +3 000 m) // Tmin (Tmax -10 K) at 795 hPa 550 hPa (+3 000 m +3 000 m) // Tmin (Tmax -10 K) at 795 hPa 550 hPa (+3 000 m +3 000 m) // Tmin (Tmax -10 K) at 795 hPa 550 hPa (+2 000 m +3 000 m) // Tmin (Tmax -10 K) at 795 hPa 550 hPa (+2 000 m +3 000 m) // Tmin (Tmax -10 K) at 795 hPa 550 hPa (+2 000 m +3 000 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 000 m +3 000 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 000 m +3 000 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 000 m +3 000 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 000 m +3 000 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 000 m +3 000 m) // Tmin (Tmax -20 K) at</li></ul>		
• Wire-break       No         • Short-circuit       No         Diagnostics indication LED       •         • Monitoring of the supply voltage (PWR-LED)       Yes; green PWR LED         • Channel status display       Yes; green LED         • for channel diagnostics       No         • 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         Isolation       Yes         Isolation tested with       707 V DC (type test)         Standards, approvals, certificates       Suitable for safety functions         Ambient conditions       No         Ambient temperature during operation       -40 °C; = Tmin (incl. condensation/frost)         • horizontal installation, min.       -40 °C; = Tmin (incl. condensation/frost)         • horizontal installation, max.       70 °C; = Tmax         Attitude during operation relating to sea level       -         • Installation atitude above sea level, max.       5 000 m         • Ambient at temperature-barometric pressure- altitude       5 000 m		Yes
• Short-circuit       No         Diagnostics indication LED       • Monitoring of the supply voltage (PWR-LED)       Yes; green PWR LED         • Channel status display       Yes; green LED       • for channel diagnostics         • for channel diagnostics       No         • 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         Isolation       Yes         Isolation       No         Standards, approvals, certificates       No         Suitable for safety functions       No         Ambient temperature during operation       -40 °C; = Tmin (incl. condensation/frost)         • horizontal installation, min.       -40 °C; = Tmin (incl. condensation/frost)         • horizontal installation, max.       70 °C; = Tmax         Altitude during operation relating to sea level       Tmin Tmax at 1140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax -10 K) at 795 hPa (-1 000 m +3 500 m) // Tmin (Tmax -10 K) at 795 hPa 568 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 568 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 568 hPa (+2 000 m +5 000 m)         Relative humidity	<ul> <li>Monitoring of encoder power supply</li> </ul>	No
Diagnostics indication LED         • Monitoring of the supply voltage (PWR-LED)         • Channel status display         • for channel diagnostics         • for module diagnostics         • for module diagnostics         Potential separation         Potential separation         Potential separation channels         • between the channels         • between the channels and backplane bus         • between the channels and backplane bus         • between the channels and the power supply of the electronics         Isolation         Isolation         Isolation         Standards, approvals, certificates         Suitable for safety functions         Ambient temperature during operation         • horizontal installation, min.         - horizontal installation, min.         - horizontal installation, max.         Ambient temperature during operation         • horizontal installation, max.         Attitude during operation relating to sea level         • Installation altitude above sea level         • Installation altitude above sea level, max.         • Ambient air temperature-barometric pressure- altitude         • With condensation, tested in accordance with IEC         100 %; incl. condensation / frost permitted (no commissioning under     <	Wire-break	No
Monitoring of the supply voltage (PWR-LED)     Yes; green PWR LED     Yes; green LED     Yes; green LED     Yes; green LED     Yes; green/red DIAG LED     Potential separation     Potential separation channels     between the channels     between the channels     between the channels Mo     between the channels No     between the channels Mo     between the c	Short-circuit	No
• Channel status display       Yes; green LED         • for channel diagnostics       No         • 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         Isolation       Yes         Isolation       No         Standards, approvals, certificates       Suitable for safety functions         Suitable for safety functions       No         Ambient temperature during operation       -40 °C; = Tmin (incl. condensation/frost)         • horizontal installation, min.       -40 °C; = Tmin (incl. condensation/frost)         • horizontal installation, max.       70 °C ; = Tmax         Altitude during operation relating to sea level       Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax -10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa (+3 500 m +5 000 m)         Relative humidity       • With condensation, tested in accordance with IEC       100 %; incl. condensation / forst permitted (no commissioning under	Diagnostics indication LED	
<ul> <li>for channel diagnostics</li> <li>for module diagnostics</li> <li>for module diagnostics</li> <li>for module diagnostics</li> <li>Yes; green/red DIAG LED</li> </ul> Potential separation           Potential separation channels           • between the channels           • between the channels and backplane bus           • between the channels and backplane bus           • between the channels and the power supply of the electronics           Isolation           Isolation           Isolation           Isolation tested with           707 V DC (type test)           Standards, approvals, certificates           Suitable for safety functions           Ambient conditions           Ambient temperature during operation           • horizontal installation, min.           • horizontal installation, max.           70° C; = Tmin (incl. condensation/frost)           • horizontal installation, max.           70° C; = Tmax           Altitude during operation relating to sea level           • Installation altitude above sea level, max.           • Ambient air temperature-barometric pressure- altitude           • Installation altitude above sea level, max.           • Ambient air temperature-barometric pressure- altitude           • Installation altitude above sea level, max.           • Ambient air temperature-barometric pressure- altitude	<ul> <li>Monitoring of the supply voltage (PWR-LED)</li> </ul>	Yes; green PWR LED
<ul> <li>for module diagnostics</li> <li>Yes; green/red DIAG LED</li> <li>Potential separation</li> <li>Potential separation channels</li> <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> <li>Isolation</li> <li>Isolation</li> <li>Isolation tested with</li> <li>707 V DC (type test)</li> <li>Standards, approvals, certificates</li> <li>Suitable for safety functions</li> <li>Ambient temperature during operation</li> <li>horizontal installation, min.</li> <li>-40 °C; = Tmin (incl. condensation/frost)</li> <li>- horizontal installation, max.</li> <li>70 °C; = Tmax</li> <li>Altitude during operation relating to sea level</li> <li>Installation altitude above sea level, max.</li> <li>Ambient air temperature-barometric pressure-altitude</li> <li>Installation altitude above sea level, max.</li> <li>Ambient air temperature-barometric pressure-altitude</li> <li>With condensation, tested in accordance with IEC</li> <li>With condensation, tested in accordance with IEC</li> </ul>	<ul> <li>Channel status display</li> </ul>	Yes; green LED
Potential separation         Potential separation channels         • between the channels         • between the channels and backplane bus         • between the channels and the power supply of the electronics         Isolation         Isolation         Isolation         Isolation tested with         707 V DC (type test)         Standards, approvals, certificates         Suitable for safety functions         Ambient temperature during operation         • horizontal installation, min.         • horizontal installation, max.         Attitude during operation relating to sea level         • Installation altitude above sea level, max.         • Ambient air temperature-barometric pressure- altitude         • Installation altitude above sea level, max.         • Ambient air temperature-barometric pressure- altitude         • Installation altitude above sea level, max.         • Ambient air temperature-barometric pressure- altitude         • Installation altitude         • Or C): = Tmax         Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (-2 000 m +3 000 m) // Tmin (Tmax - 10 K) at 795 hPa 540 hPa (+3 500 m +5 000 m)         • With condensation, tested in accordance with IEC         100 %; incl. condensation / frost permitted (no commissionin	<ul> <li>for channel diagnostics</li> </ul>	No
Potential separation channels       No         • between the channels and backplane bus       Yes         • between the channels and the power supply of the electronics       No         Isolation       No         Isolation       Standards, approvals, certificates         Suitable for safety functions       No         Ambient conditions       No         Ambient temperature during operation       -40 °C; = Tmin (incl. condensation/frost)         • horizontal installation, min.       -40 °C; = Tmax         Altitude during operation relating to sea level       -40 °C; = Tmax         Istallation altitude above sea level, max.       5 000 m         • Ambient air temperature-barometric pressure-altitude       5 000 m         Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax -10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)         Relative humidity       • With condensation, tested in accordance with IEC       100 %; incl. condensation / fost permitted (no commissioning under	<ul> <li>for module diagnostics</li> </ul>	Yes; green/red DIAG LED
Potential separation channels       No         • between the channels and backplane bus       Yes         • between the channels and the power supply of the electronics       No         Isolation       No         Isolation       Standards, approvals, certificates         Suitable for safety functions       No         Ambient conditions       No         Ambient temperature during operation       -40 °C; = Tmin (incl. condensation/frost)         • horizontal installation, min.       -40 °C; = Tmax         Altitude during operation relating to sea level       -40 °C; = Tmax         Istallation altitude above sea level, max.       5 000 m         • Ambient air temperature-barometric pressure-altitude       5 000 m         Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax -10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)         Relative humidity       • With condensation, tested in accordance with IEC       100 %; incl. condensation / fost permitted (no commissioning under	Potential separation	
• between the channels       No         • between the channels and backplane bus       Yes         • between the channels and the power supply of the electronics       No         Isolation       No         Isolation tested with       707 V DC (type test)         Standards, approvals, certificates       Suitable for safety functions         Suitable for safety functions       No         Ambient conditions       No         Ambient temperature during operation       -40 °C; = Tmin (incl. condensation/frost)         • horizontal installation, min.       -40 °C; = Tmax         Altitude during operation relating to sea level       -40 °C; = Tmax         • Installation altitude above sea level, max.       5 000 m         • Ambient air temperature-barometric pressure-altitude       Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax -10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)         Relative humidity       • With condensation, tested in accordance with IEC		
<ul> <li>between the channels and backplane bus</li> <li>between the channels and the power supply of the electronics</li> <li>Isolation</li> <li>Isolation tested with</li> <li>707 V DC (type test)</li> <li>Standards, approvals, certificates</li> <li>Suitable for safety functions</li> <li>Ambient conditions</li> <li>Ambient temperature during operation         <ul> <li>horizontal installation, min.</li> <li>horizontal installation, max.</li> <li>Arrow C; = Tmin (incl. condensation/frost)</li> <li>horizontal installation, max.</li> <li>70 °C; = Tmax</li> </ul> </li> <li>Altitude during operation relating to sea level         <ul> <li>Installation altitude above sea level, max.</li> <li>Ambient air temperature-barometric pressure- altitude</li> <li>Installation, tested in accordance with IEC</li> </ul> </li> <li>With condensation, tested in accordance with IEC</li> </ul>		No
• between the channels and the power supply of the electronics       No         Isolation       Isolation tested with       707 V DC (type test)         Standards, approvals, certificates       Suitable for safety functions       No         Suitable for safety functions       No       Ambient conditions         Ambient conditions       No       Ambient temperature during operation         • horizontal installation, min.       -40 °C; = Tmin (incl. condensation/frost)         • horizontal installation, max.       70 °C; = Tmax         Altitude during operation relating to sea level       Installation altitude above sea level         • Installation altitude above sea level, max.       5 000 m         • Ambient air temperature-barometric pressure- altitude       Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 568 hPa (+2 000 m +3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)         Relative humidity       With condensation, tested in accordance with IEC		
electronics       Isolation         Isolation tested with       707 V DC (type test)         Standards, approvals, certificates       Suitable for safety functions         Suitable for safety functions       No         Ambient conditions       Ambient temperature during operation         • horizontal installation, min.       -40 °C; = Tmin (incl. condensation/frost)         • horizontal installation, max.       70 °C; = Tmax         Altitude during operation relating to sea level       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) // Tmin (Tmax -10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)         Relative humidity       • With condensation, tested in accordance with IEC       100 %; incl. condensation / frost permitted (no commissioning under		
Isolation         Isolation tested with         Standards, approvals, certificates         Suitable for safety functions         Ambient conditions         Ambient temperature during operation         • horizontal installation, min.         • horizontal installation, max.         70 °C; = Tmin (incl. condensation/frost)         • horizontal installation, max.         Altitude during operation relating to sea level         • Installation altitude above sea level, max.         • Ambient air temperature-barometric pressure- altitude         . Ambient air temperature-barometric pressure- altitude         . (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +2 000 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)         Relative humidity         • With condensation, tested in accordance with IEC	1 11 2	
Isolation tested with       707 V DC (type test)         Standards, approvals, certificates         Suitable for safety functions       No         Ambient conditions       No         Ambient temperature during operation       • horizontal installation, min.         • horizontal installation, max.       -40 °C; = Tmin (incl. condensation/frost)         • horizontal installation, max.       70 °C; = Tmax         Altitude during operation relating to sea level       •         • Installation altitude above sea level, max.       5 000 m         • Ambient air temperature-barometric pressure- altitude       Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)         Relative humidity       • With condensation, tested in accordance with IEC       100 %; incl. condensation / frost permitted (no commissioning under		
Standards, approvals, certificates         Suitable for safety functions       No         Ambient conditions       Ambient conditions         Ambient temperature during operation       • horizontal installation, min.         • horizontal installation, max.       -40 °C; = Tmin (incl. condensation/frost)         • horizontal installation, max.       70 °C; = Tmax         Altitude during operation relating to sea level       •         • Installation altitude above sea level, max.       5 000 m         • Ambient air temperature-barometric pressure- altitude       5 000 m         (Tmax - 10 K) at 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 658 hPa ( 540 hPa (+3 500 m +3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)         Relative humidity       • With condensation, tested in accordance with IEC       100 %; incl. condensation / frost permitted (no commissioning under		707 V DC. (type test)
Suitable for safety functions       No         Ambient conditions       Ambient temperature during operation <ul> <li>horizontal installation, min.</li> <li>horizontal installation, max.</li> <li>horizontal installation, max.</li> <li>horizontal installation relating to sea level</li> <li>Installation altitude above sea level, max.</li> <li>Ambient air temperature-barometric pressure- altitude</li> <li>Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin  (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin  (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)</li></ul>		
Ambient conditions         Ambient temperature during operation         • horizontal installation, min.         • horizontal installation, max.         • horizontal installation, max.         70 °C; = Tmin (incl. condensation/frost)         • horizontal installation, max.         Altitude during operation relating to sea level         • 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) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)         Relative humidity         • With condensation, tested in accordance with IEC		
Ambient temperature during operation         • horizontal installation, min.         • horizontal installation, max.         70 °C; = Tmax         Altitude during operation relating to sea level         • 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) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)         Relative humidity         • With condensation, tested in accordance with IEC		NO
<ul> <li>horizontal installation, min.</li> <li>horizontal installation, max.</li> <li>horizontal installation, max.</li> <li>Altitude during operation relating to sea level</li> <li>Installation altitude above sea level, max.</li> <li>Ambient air temperature-barometric pressure- altitude</li> <li>Relative humidity</li> <li>With condensation, tested in accordance with IEC</li> <li>With condensation, tested in accordance with IEC</li> <li>Anore C; = Tmin (incl. condensation/frost)</li> <li>Tmin (incl. condensation/frost)</li> <li>To °C; = Tmax</li> <li>To °C</li></ul>	Ambient conditions	
<ul> <li>horizontal installation, max.</li> <li>Altitude during operation relating to sea level</li> <li>Installation altitude above sea level, max.</li> <li>Ambient air temperature-barometric pressure- altitude</li> <li>Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin  (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin  (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)</li> <li>Relative humidity</li> <li>With condensation, tested in accordance with IEC</li> <li>100 %; incl. condensation / frost permitted (no commissioning under</li> </ul>	Ambient temperature during operation	
Altitude during operation relating to sea level         • 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) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)         Relative humidity         • With condensation, tested in accordance with IEC	<ul> <li>horizontal installation, min.</li> </ul>	-40 °C; = Tmin (incl. condensation/frost)
<ul> <li>Installation altitude above sea level, max.</li> <li>Ambient air temperature-barometric pressure- altitude</li> <li>Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin  (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin  (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)</li> <li>Relative humidity</li> <li>With condensation, tested in accordance with IEC</li> <li>100 %; incl. condensation / frost permitted (no commissioning under</li> </ul>	horizontal installation, max.	70 °C; = Tmax
<ul> <li>Ambient air temperature-barometric pressure- altitude</li> <li>Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin  (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin  (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)</li> <li>Relative humidity</li> <li>With condensation, tested in accordance with IEC</li> <li>100 %; incl. condensation / frost permitted (no commissioning under</li> </ul>	Altitude during operation relating to sea level	
altitude       (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)         Relative humidity       • With condensation, tested in accordance with IEC         100 %; incl. condensation / frost permitted (no commissioning under	<ul> <li>Installation altitude above sea level, max.</li> </ul>	5 000 m
altitude       (Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)         Relative humidity       • With condensation, tested in accordance with IEC         100 %; incl. condensation / frost permitted (no commissioning under	Ambient air temperature-barometric pressure-	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin
Relative humidity         • With condensation, tested in accordance with IEC         100 %; incl. condensation / frost permitted (no commissioning under		(Tmax - 10 K) at 795 hPa 658 hPa (+2 000 m +3 500 m) // Tmin
	Relative humidity	
		100 %; incl. condensation / frost permitted (no commissioning under
Resistance	Resistance	

Coolants and lubricants	
	Yes; Incl. diesel and oil droplets in the air
and lubricants	
Use in stationary industrial systems	
<ul> <li>— to biologically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
<ul> <li>— to chemically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
<ul> <li>— to mechanically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3S4 incl. sand, dust, *
<ul> <li>Against mechanical environmental conditions acc. to EN 60721-3-3</li> </ul>	Yes; Class 3M8 using the SIPLUS Mounting Kit ET 200SP (6AG1193- 6AA00-0AA0)
Use on ships/at sea	
<ul> <li>— to biologically active substances according to EN 60721-3-6</li> </ul>	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request
<ul> <li>— to chemically active substances according to EN 60721-3-6</li> </ul>	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
<ul> <li>— to mechanically active substances according to EN 60721-3-6</li> </ul>	Yes; Class 6S3 incl. sand, dust; *
<ul> <li>Against mechanical environmental conditions acc. to EN 60721-3-6</li> </ul>	Yes; Class 6M4 using the SIPLUS Mounting Kit ET 200SP (6AG1193- 6AA00-0AA0)
Usage in industrial process technology	
<ul> <li>Against chemically active substances acc. to EN 60654-4</li> </ul>	Yes; Class 3 (excluding trichlorethylene)
<ul> <li>Environmental conditions for process, measuring and control systems acc. to ANSI/ISA- 71.04</li> </ul>	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)
Remark	
<ul> <li>— Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04</li> </ul>	* The supplied plug covers must remain in place over the unused interfaces during operation!
Conformal coating	
<ul> <li>Coatings for printed circuit board assemblies acc. to EN 61086</li> </ul>	Yes; Class 2 for high reliability
<ul> <li>Protection against fouling acc. to EN 60664-3</li> </ul>	Yes; Type 1 protection
<ul> <li>Military testing according to MIL-I-46058C, Amendment 7</li> </ul>	Yes; Discoloration of coating possible during service life
<ul> <li>Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A</li> </ul>	Yes; Conformal coating, Class A
Dimensions	
Width	15 mm
Height	73 mm
Depth	58 mm
Weights	
Weight, approx.	28 g
last modified:	2/6/2022 🖸