SIEMENS

Data sheet

6AG1232-4HA30-4XB0

SIPLUS S7-1200 SB1232 1AO for medial exposure with conformal coating based on 6ES7232-4HA30-0XB0 . ANALOG OUTPUT 1 AO, +/-10 V DC (12 bit resol.) or 0-20mA (11 bit resol.)



General information	
Product type designation	SB 1232, AQ 1x12 bit
Input current	
from backplane bus 5 V DC, typ.	15 mA
Output voltage	
Power supply to the transmitters	
 Supply current, max. 	25 mA
Power loss	
Power loss, typ.	1.5 W
Analog inputs	
Number of analog inputs	0
Analog outputs	
Number of analog outputs	1
Cycle time (all channels) max.	Voltage: 300 µS (R), 750 µS (1 uF) Current: 600 ms (1 mH); 2 ms (10 mH)
Output ranges, voltage	
• -10 V to +10 V	Yes

• 0 to 20 mA Yes Load impedance (in rated range of output) . • with voltage outputs, min. 1 000 Ω • with voltage outputs, max. 600 Ω Cable length . • shielded, max. 10 m; shielded, twisted pair Analog value generation for the outputs Conversion principle Ornversion principle Differential Integration and conversion time/resolution per channel . • Resolution with overrange (bit including sign), max. 12 bit <i>Temperature error</i> (relative to output range), (+/-) 25 °C ±0.5%, to 55 °C ±13% Interrupts/diagnostics/status information Yes Diagnostics indication LED Ves • for status of the outputs Yes Ambient temperature during operation . • min. -20 °C; = Tmin (incl. condensation/frost) • min. -20 °C; = Tmax Ambient temperature during storage/transportation . • min. -20 °C; = Tmax Ambient temperature during storage/transportation . • min. -20 °C; = Tmax Ambient temperature during to sea level . • installation altitude above sea level, max. . • Arubient air temperature during to sea level . • installation altitude above sea level, max. <th>Output ranges, current</th> <th></th>	Output ranges, current	
• with voltage outputs, min. 1 000 Ω • with current outputs, max. 600 Ω Cable length 10 m; shielded, twisted pair • shielded, max. 10 m; shielded, twisted pair Analog value generation for the outputs Conversion principle Outputsion principle Differential Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. Prores/accuracies 12 bit Temperature error (relative to output range), (r/-) 25 °C ±0.5%, to 55 °C ±1% Interrupts/diagnostics/status information Ves Diagnostics indication LED Ves • for status of the outputs Yes Ambient conditions Free fall • free fall height, max. 0.3 m; five times, in product package Ambient temperature during operation -40 °C • min. -40 °C • max. 70 °C Antheint temperature barometric pressure- altitude 5000 m • Installation altitude above sea level, max. 5000 m • Installation altitude above sea level, max. 5000 m • Installation relating to sea level, max. 5000 m • Installation in tested in acc		Yes
• with voltage outputs, min. 1 000 Ω • with current outputs, max. 600 Ω Cable length 10 m; shielded, twisted pair • shielded, max. 10 m; shielded, twisted pair Analog value generation for the outputs Conversion time/resolution per channel • Resolution with overrange (bit including sign), max. 12 bit Perors/accuracies 25 °C ±0.5%, to 55 °C ±1% Temperature error (relative to output range), (r/-) 25 °C ±0.5%, to 55 °C ±1% Interrupts/diagnostics/status information Yes Diagnostics indication LED Yes • for status of the outputs Yes Ambient conditions Yes Free fall 0.3 m; five times, in product package Ambient temperature during operation -40 °C • min. -40 °C • max. 70 °C Anbient temperature barometric pressure- altitude Tmin	Load impedance (in rated range of output)	
• with current outputs, max. 600 Ω Cable length • shielded, max. • shielded, max. 10 m; shielded, twisted pair Analog value generation for the outputs Differential Conversion principle Differential Integration and conversion time/resolution per channel • • Resolution with overrange (bit including sign), max. 12 bit Errors/accuracies 25 °C ±0.5%, to 55 °C ±1% Temperature error (relative to output range), (+/-) 25 °C ±0.5%, to 55 °C ±1% Diagnostics indication LED Yes Diagnostics indication LED Yes • Feal height, max. 0.3 m; five times, in product package Ambient conditions * Free fall - • Fail height, max. 0.3 m; five times, in product package Ambient temperature during operation - • min. -20 °C; = Tmax Ambient temperature during storage/transportation - • min. -40 °C • max. 700 m Altitude during operation relating to sea level 5000 m • Installation altitude above sea level, max. 5000 m • Installation altitude above		1 000 Ω
Cable length 10 m; shielded, twisted pair Analog value generation for the outputs Differential Conversion principle Differential Integration and conversion time/resolution per channel 12 bit • Resolution with overrange (bit including sign), max. 12 bit Errors/accuracies 12 bit Interrupts/diagnostics/status information 25 °C ±0.5%, to 55 °C ±1% Alarms Ves Diagnostics function Yes Diagnostics indication LED • For status of the outputs • for status of the outputs Yes Diagnostics function 10 m; five times, in product package Ambient temperature during operation -0° °C; = Tmax • max. 0.3 m; five times, in product package Ambient temperature during storage/transportation -0° °C; = Tmax • min. -40 °C • max. 70 °C Attitude during operation relating to sea level 5000 m • Installation altitude above sea level, max. 5000 m • Installation altitude above sea level, max. 5000 m • Information, tested in accordance with IEC 60068-2-38, max. 5000 m, "Tmin (Tmax -20 K) at 658 hPa 554 hPa (42 000 m +3 500 m) //	č	600 Ω
• shielded, max. 10 m; shielded, twisted pair Analog value generation for the outputs Conversion principle Differential Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. 12 bit 12 bit max. 25 °C ±0.5%, to 55 °C ±1% Errors/accuracies Ves Temperature error (relative to output range), (+/-) 25 °C ±0.5%, to 55 °C ±1% Diagnostics function Yes Diagnostics indication LED • For status of the outputs • for status of the outputs Yes Ambient conditions - Free fall - 20 °C; = Tmin (incl. condensation/frost) • min. -20 °C; = Tmax Ambient temperature during operation - • min. -20 °C; = Tmax Ambient temperature during storage/transportation - • max. 70 °C Altitude during operation relating to sea level - • Installation altitude above sea level, max. 5 000 m • Ambient it temperature-barometric pressure- altitude 5 000 m • Installation altitude above sea level, max. 5 000 m • Ambient air temperat		
Analog value generation for the outputs Conversion principle Differential Integration and conversion time/resolution per channel 12 bit Resolution with overrange (bit including sign), max. 12 bit Errors/accuracies 25 °C ±0.5%, to 55 °C ±1% Temperature error (relative to output range), (+/-) 25 °C ±0.5%, to 55 °C ±1% Interrupts/diagnostics/status information Alarms Ves Ves Diagnostics function Yes Diagnostics indication LED • for status of the outputs • for status of the outputs Yes Ambient temperature during operation • Fail height, max. • Fail height, max. 0.3 m; five times, in product package Ambient temperature during operation • or C; = Tmax • min. -20 °C; = Tmax Ambient temperature during storage/transportation • or C • max. 70 °C Altitude during operation relating to sea level • foron max. • Installation altitude above sea level, max. 5 000 m • Ambient air temperature-barometric pressure-altitude 5 000 m		10 m; shielded, twisted pair
Conversion principle Differential Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. Priors/accuracies 12 bit Errors/accuracies 25 °C ±0.5%, to 55 °C ±1% Interrupts/diagnostics/status information Alarms Alarms Yes Diagnostics function Yes Diagnostics function Yes Or for status of the outputs Yes Ambient conditions Yes Free fall - • Fall height, max. 0.3 m; five times, in product package Ambient temperature during operation -20 °C; = Tmax Ambient temperature during storage/transportation -40 °C • max. 70 °C Ambient air temperature-barometric pressure- altitude Tmin Tmax at 1140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa (-2 000 m +3 500 m) // Tmin (Tmax - 10 K) at 795 hPa (-2 000 m +3 000 m) // Tmin (Tmax - 20 K) at 658 hPa 564 hPa (+3 000 m +5 000 m) Relative humidity With condensation, tested in accordance with IEC 60088-2-38, max. 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Resistance Coolants and lubricants Yes; Incl. diesel and oil droplets in the air coolants		
Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. 12 bit Errors/accuracies 12 bit Temperature error (relative to output range), (+/-) 25 °C ± 0.5%, to 55 °C ± 1% Interrupts/diagnostics/status information 25 °C ± 0.5%, to 55 °C ± 1% Alarms Yes Diagnostics function Yes Diagnostics function Yes Ambient conditions Yes Free fall 0.3 m; five times, in product package Ambient temperature during operation -20 °C; = Tmin (incl. condensation/frost) • max. 0.3 m; five times, in product package Ambient temperature during storage/transportation -20 °C; = Tmin (incl. condensation/frost) • max. 60 °C; = Tmax Ambient temperature during storage/transportation -0 °C • max. 70 °C Altitude during operation relating to sea level 5000 m • Installation altitude above sea level, max. 5000 m • Ambient air temperature-barometric pressure-altitude 5000 m • Mithent air temperature barometric pressure-altitude 5000 m, (Tmin (Tmax -20 K) at 568 hPa (-500 m +3 000 m) // Tmin (Tmax -20 K) at 568 hPa (-500 m +3 000 m) // Tmin		
• Resolution with overrange (bit including sign), max. 12 bit Errors/accuracies		Differential
International processing of the Notating digit, it is a set of the internation of the internatio		
Errors/accuracies Temperature error (relative to output range), (+/-) 25 °C ±0.5%, to 55 °C ±1% Interrupts/diagnostics/status information Yes Diagnostics function Yes Diagnostics function LED Yes • for status of the outputs Yes Ambient conditions Free fall • Fail height, max. 0.3 m; five times, in product package Ambient temperature during operation -20 °C; = Tmin (incl. condensation/frost) • min. -20 °C; = Tmin (incl. condensation/frost) • max. 60 °C; = Tmax Ambient temperature during storage/transportation - • max. 70 °C Altitude during operation relating to sea level - • Installation altitude above sea level, max. 5 000 m • Installation altitude above sea level, max. 5 000 m • Installation altitude above sea level, max. 5 000 m • With condensation, tested in accordance with ICC 60068-2-38, max. 500 m;// Tmin (Tmax - 10 K) at 795 hPa 540 hPa (+3 500 m +5 000 m) // Tmin (Tmax - 20 K) at 658 hPa 540 on m +5 000 m) // Tmin (Tmax - 20 K) at 658 hPa 540 on m +5 000 m) // Tmin (Tmax - 20 K) at 658 hPa 540 on m +5 000 m) // Tmin (Tmax - 20		12 bit
Temperature error (relative to output range), (+/-) 25 °C ±0.5%, to 55 °C ±1% Interrupts/cliagnostics/status information Alarms Diagnostics function Yes Diagnostics indication LED Yes • for status of the outputs Yes Ambient conditions Free fall • Fall height, max. 0.3 m; five times, in product package Ambient temperature during operation -20 °C; = Tmin (incl. condensation/frost) min. -20 °C; = Tmax Ambient temperature during storage/transportation • min. max. 40 °C max. 70 °C Altitude during operation relating to sea level • Installation altitude above sea level, max. • Installation altitude above sea level, max. 5 000 m min	max.	
Interrupts/diagnostics/status information Alarms Yes Diagnostics function Yes Diagnostics indication LED • for status of the outputs Yes Ambient conditions Yes Free fall • fall height, max. 0.3 m; five times, in product package Ambient temperature during operation • min. -20 °C; = Tmin (incl. condensation/frost) • max. 60 °C; = Tmax Ambient temperature during storage/transportation • 40 °C • max. 70 °C Altitude during operation relating to sea level • • Installation altitude above sea level, max. 5 000 m Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin Tmax at 1 140 hPa 795 hPa (-200 m +3 500 m) // Tmin (Tmax -20 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 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Resistance Coolants and lubricants — Resistant to commercially available coolants and lubricants Yes; Incl. diesel and oil droplets in the air	Errors/accuracies	
Alarms Yes Diagnostics function Yes Diagnostics indication LED • for status of the outputs • for status of the outputs Yes Ambient conditions Free fall • Fall height, max. 0.3 m; five times, in product package Ambient temperature during operation • nin. • max. 60 °C; = Tmin (incl. condensation/frost) • max. 60 °C; = Tmax Ambient temperature during storage/transportation • min. • max. 70 °C 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 540 hPa (+3 500 m +5 000 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 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 60068-2-38, max. 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Resistance Coolants and lubricants Yes; Incl. diesel and oil droplets in the air	Temperature error (relative to output range), (+/-)	25 °C ±0.5%, to 55 °C ±1%
Diagnostics function Yes Diagnostics indication LED • for status of the outputs Yes Ambient conditions Free fall • fall height, max. 0.3 m; five times, in product package Ambient temperature during operation • fall height, max. 0.3 m; five times, in product package Ambient temperature during operation • fall height, max. 60 °C; = Tmax Ambient temperature during storage/transportation • fall feight, max. 60 °C; = Tmax Ambient temperature during storage/transportation • fall feight, max. 70 °C Attitude during operation relating to sea level • fall height, max. 5 000 m • Installation altitude above sea level, max. • for this,, Tax at 1 140 hPa, 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax -10 K) at 795 hPa 558 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 60068-2-38, max. 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Resistance • Coolants and lubricants • Yes; Incl. diesel and oil droplets in the air	Interrupts/diagnostics/status information	
Diagnostics indication LED • for status of the outputs Yes Ambient conditions Free fall • Fall height, max. 0.3 m; five times, in product package Ambient temperature during operation -20 °C; = Tmin (incl. condensation/frost) • max. 60 °C; = Tmax Ambient temperature during storage/transportation -40 °C • min. -40 °C • max. 70 °C Attitude during operation relating to sea level -40 °C • Installation altitude above sea level, max. 5 000 m • Installation altitude above sea level, max. 5 000 m • Ambient air temperature-barometric pressure- altitude 1 min Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa (-1 000 m +2 000 m) // Tmin (Tmax - 10 K) at 795 hPa 658 hPa 540 hPa (+3 500 m +5 000 m) Relative humidity 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Resistance Coolants and lubricants — Resistant to commercially available coolants and lubricants Yes; Incl. diesel and oil droplets in the air	Alarms	Yes
• for status of the outputs Yes Ambient conditions Free fall • Fall height, max. 0.3 m; five times, in product package Ambient temperature during operation -20 °C; = Tmin (incl. condensation/frost) • min. -20 °C; = Tmin (incl. condensation/frost) • max. 60 °C; = Tmax Ambient temperature during storage/transportation -40 °C • max. 70 °C Altitude during operation relating to sea level -40 °C • 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 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Resistance Coolants and lubricants - Resistant to commercially available colants and lubricants Yes; Incl. diesel and oil droplets in the air	Diagnostics function	Yes
Ambient conditions Free fall • Fall height, max. 0.3 m; five times, in product package Ambient temperature during operation • min. -20 °C; = Tmin (incl. condensation/frost) • max. 60 °C; = Tmax Ambient temperature during storage/transportation • min. -40 °C • max. 70 °C 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 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 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Resistance Coolants and lubricants - Resistant to commercially available coolants and lubricants Yes; Incl. diesel and oil droplets in the air	Diagnostics indication LED	
Free fall 0.3 m; five times, in product package Ambient temperature during operation • min. • min. -20 °C; = Tmin (incl. condensation/frost) • max. 60 °C; = Tmax Ambient temperature during storage/transportation • min. • min. -40 °C • max. 70 °C 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 - 10 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) Relative humidity 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Resistance Coolants and lubricants — Resistant to commercially available coolants and lubricants Yes; Incl. diesel and oil droplets in the air	 for status of the outputs 	Yes
• Fall height, max. 0.3 m; five times, in product package Ambient temperature during operation -20 °C; = Tmin (incl. condensation/frost) • max. 60 °C; = Tmax Ambient temperature during storage/transportation -40 °C • min. -40 °C • max. 70 °C Altitude during operation relating to sea level -10 °C • 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 (-500 m +3 500 m) // Tmin (Tmax - 20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) Relative humidity 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Resistance Coolants and lubricants — Resistant to commercially available coolants and lubricants Yes; Incl. diesel and oil droplets in the air	Ambient conditions	
Ambient temperature during operation • min. -20 °C; = Tmin (incl. condensation/frost) • max. 60 °C; = Tmax Ambient temperature during storage/transportation -40 °C • min. -40 °C • max. 70 °C Altitude during operation relating to sea level -40 °C • Installation altitude above sea level, max. 5 000 m • Ambient air temperature-barometric pressure- altitude 5 000 m • Ambient air temperature-barometric pressure- altitude 5 000 m • Relative humidity 5 000 m • With condensation, tested in accordance with IEC 60068-2-38, max. 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Resistance Coolants and lubricants 'Yes; Incl. diesel and oil droplets in the air	Free fall	
• min. -20 °C; = Tmin (incl. condensation/frost) • max. 60 °C; = Tmax Ambient temperature during storage/transportation -40 °C • min. -40 °C • max. 70 °C Altitude during operation relating to sea level 5000 m • 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 - 10 K) at 795 hPa 554 hPa (+2 000 m +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m) Relative humidity 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) Resistance Coolants and lubricants - Resistant to commercially available coolants and lubricants Yes; Incl. diesel and oil droplets in the air	 Fall height, max. 	0.3 m; five times, in product package
• max.60 °C; = TmaxAmbient temperature during storage/transportation-40 °C• min40 °C• max.70 °CAltitude during operation relating to sea level	Ambient temperature during operation	
Ambient temperature during storage/transportation• min40 °C• max.70 °CAltitude during operation relating to sea level• Installation altitude above sea level, max.5 000 m• Ambient air temperature-barometric pressure- altitude5 000 m• Ambient air temperature-barometric pressure- altitudeTmin 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 - 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 +3 000 m)Relative humidity100 %; RH incl. condensation/frost (no commissioning under condensation conditions)Resistance100 %; RH incl. condensation/frost (no commissioning under condensation conditions)Coolants and lubricantsYes; Incl. diesel and oil droplets in the air	• min.	-20 °C; = Tmin (incl. condensation/frost)
• min40 °C• max.70 °CAltitude during operation relating to sea level• Installation altitude above sea level, max.5 000 m• Ambient air temperature-barometric pressure- altitude5 000 m• Ambient air temperature-barometric pressure- altitudeTmin 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 +3 500 m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +3 000 m)Relative humidity100 %; RH incl. condensation/frost (no commissioning under condensation conditions)Resistance100 %; RH incl. condensation/frost (no commissioning under condensation conditions)Coolants and lubricantsYes; Incl. diesel and oil droplets in the air	• max.	60 °C; = Tmax
Immax.70 °CAltitude during operation relating to sea levelImmax.• Installation altitude above sea level, max.5 000 m• Ambient air temperature-barometric pressure- altitudeTmin 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 - 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 +3 000 m)Relative humidityImmax• With condensation, tested in accordance with IEC 60068-2-38, max.100 %; RH incl. condensation/frost (no commissioning under condensation conditions)ResistanceCoolants and lubricantsYes; Incl. diesel and oil droplets in the air	Ambient temperature during storage/transportation	
Altitude Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressurealtitude S 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 60068-2-38, max. Coolants and lubricants Resistant to commercially available coolants and lubricants Yes; Incl. diesel and oil droplets in the air 	• min.	-40 °C
 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 60068-2-38, max. Coolants and lubricants — Resistant to commercially available coolants and lubricants Yes; Incl. diesel and oil droplets in the air 	• max.	70 °C
 Ambient air temperature-barometric pressure- altitude 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 60068-2-38, max. Resistance Coolants and lubricants — Resistant to commercially available coolants and lubricants Yes; Incl. diesel and oil droplets in the air 	Altitude during operation relating to sea level	
altitudeTmin (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 60068-2-38, max.100 %; RH incl. condensation/frost (no commissioning under condensation conditions)Resistance• Coolants and lubricants• Yes; Incl. diesel and oil droplets in the air coolants and lubricants	 Installation altitude above sea level, max. 	5 000 m
m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5 000 m)Relative humidity100 %; RH incl. condensation/frost (no commissioning under condensation conditions)• With condensation, tested in accordance with IEC 60068-2-38, max.100 %; RH incl. condensation/frost (no commissioning under condensation conditions)ResistanceCoolants and lubricantsYes; Incl. diesel and oil droplets in the air• Resistant to commercially available coolants and lubricantsYes; Incl. diesel and oil droplets in the air	• Ambient air temperature-barometric pressure-	Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) //
With condensation, tested in accordance with IEC 60068-2-38, max. Resistance Coolants and lubricants — Resistant to commercially available coolants and lubricants (Coolants and lubricants) (Yes; Incl. diesel and oil droplets in the air	altitude	m) // Tmin (Tmax -20 K) at 658 hPa 540 hPa (+3 500 m +5
IEC 60068-2-38, max. condensation conditions) Resistance Coolants and lubricants — Resistant to commercially available coolants and lubricants Yes; Incl. diesel and oil droplets in the air	Relative humidity	
Coolants and lubricants — Resistant to commercially available coolants and lubricants Yes; Incl. diesel and oil droplets in the air		
 Resistant to commercially available coolants and lubricants Yes; Incl. diesel and oil droplets in the air 	Resistance	
coolants and lubricants	Coolants and lubricants	
	-	Yes; Incl. diesel and oil droplets in the air

Ö PNAP

 — 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 ships/at sea	
 — to biologically active substances according to EN 60721-3-6 	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request
 — to chemically active substances according to EN 60721-3-6 	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2- 52 (severity degree 3); *
 — to mechanically active substances according to EN 60721-3-6 	Yes; Class 6S3 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 and control systems acc. to ANSI/ISA-71.04 	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	
 — Note regarding classification of 	* The supplied plug covers must remain in place over the unused
environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04	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
 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
Mechanics/material	
Enclosure material (front)	
• Plastic	Yes
Dimensions	
Width	38 mm
Height	62 mm
Depth	21 mm
Weights	
Weight, approx.	40 g
last modified:	10/13/2020

10/19/2020

Ö PNAP