2.5 System data

Table 2- 2 Environmental conditions

Protection class, line supply circuits 1 (with protective conductor connection) safety extra-low voltage PELV / SELV	Degree of protection	IPXXB according to EN 60529, open type according to UL 508			
Internal air cooling power units with forced air cooling using an integrated fan power units with forced air cooling using an integrated fan power units with forced air cooling using an integrated fan power units with forced air cooling using an integrated fan power units with forced air cooling using an integrated fan power units with forced air cooling using an integrated fan power units with forced air cooling using an integrated fan power units with forced air cooling using an integrated fan power units with forced air cooling using an integrated fan power units with forced air cooling using an integrated fan power units with forced air cooling using an integrated fan power units with forced air cooling using an integrated fan power units with forced air cooling using an integrated fan power units with forced air cooling using an integrated fan power units with forced air cooling using an integrated fan power units with forced air cooling and integrated fan power units with forced air cooling and integrated fan power units with forced air cooling and integrated fan power units with forced air cooling and integrated fan power units with forced air cooling and integrated fan power units with forced air cooling and integrated fan and installation altitude of up to 1000 m without derating, 240° C to +55° C, see derating characteristics for current derating, 240° C to +55° C, see derating characteristics for units with forced air cooling not exercises. In the characteristic for current derating, 240° C to +40° C necessary and integrated fan integrated fan integrated fan power power reduction of the ambient on the tonsport packaging and integrated fan integrated fan power pow					
Permissible cooling medium temperature (air) and installation altitude in operation O° C to +40° C and an installation altitude of up to 1000 m without derating, 240° C to +55° C, see derating characteristics Installation altitude in operation Chemically active substances Long-term storage in the transport packaging Class 1C2 according to EN 60721-3-1 Transport in the transport packaging Class 3C2 according to EN 60721-3-2 Operation Class 3B1 according to EN 60721-3-3 Biological environmental conditions: Storage in the transport packaging Class 1B1 according to EN 60721-3-2 Operation Class 3B1 according to EN 60721-3-3 Wibratory load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-3 Wibratory load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-1 Transport in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Operation Class 2M3 according to EN 60721-3-2 Class 2M3 according to EN 60721-3-2 Transport in the transport packaging Class 1M2 according to EN 60721-3-2 Test values: 49 m/s² (5g)/30 ms Chassis format FSA to FSB Test values: 98 m/s² (10g)/20 ms Climatic ambient conditions Class 1K4 according to EN 60721-3-1 Transport in the transport packaging Class 1K4 according to EN 60721-3-1 Transport in the transport packaging Class 1K4 according to EN 60721-3-2 Temperature: -25° C to +55° C Transport in the transport packaging Class 3K3 according to EN 60721-3-3 Temperature: -40° C to +70° C Operation Class 3K3 according to EN 60721-3-3 Temperature: -40° C to +70° C Operation Class 3K3 according to EN 60721-3-3 Temperature: -40° C to +40° C Relative humidity, 5% to 90% Oli mitik, salt mist, ice formation,					
Permissible cooling medium temperature (air) and installation altitude in operation Adv C to +40° C to +45° C, see derating characteristics Installation altitude >1000 m to 4000 m refer to the characteristic for current derating or reduction of the ambient temperature by 3.5 K per 500 m. Chemically active substances Long-term storage in the transport packaging Class 1C2 according to EN 60721-3-1 Transport in the transport packaging Class 3C2 according to EN 60721-3-2 Operation Class 3C2 according to EN 60721-3-3 Biological environmental conditions: Storage in the transport packaging Class 1B1 according to EN 60721-3-1 Transport in the transport packaging Class 3B1 according to EN 60721-3-2 Operation Class 3B1 according to EN 60721-3-3 Vibratory load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-3 Transport in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 1M2 according to EN 60721-3-2 Shock load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-2 Shock load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-2 Shock load Long-term storage in the transport packaging Class 2M3 according to EN 60721-3-2 Shock load Long-term storage in the transport packaging Class 2M3 according to EN 60721-3-2 Blocksize format FSA to FSB Test values: 47 m/s² (15g)/11 ms Blocksize format FSC to FSF Test values: 49 m/s² (5g)/30 ms Chassis format Class 1M4 according to EN 60721-3-1 Temperature: -25° C to +55° C Transport in the transport packaging Class 3K3 according to EN 60721-3-2 Temperature: -25° C to +55° C Relative humidity: 5% to 90% Olimits, salt mist, ice formation, ondensation, dripping water, spray, olimits, salt mist, ice formation, condensation, dripping water, spray, olimits, salt mist, ice formation, condensation, dripping water, spray, olimits, salt mist, ice formation, con	Type of cooling				
and installation altitude in operation derating, >40° C to +55° C, see derating characteristics Installation altitude >1000 m to 4000 m refer to the characteristic for current derating or reduction of the ambient temperature by 3.5 K per 500 m. Chemically active substances Long-term storage in the transport packaging Class 1C2 according to EN 60721-3-1 Transport in the transport packaging Class 2C2 according to EN 60721-3-2 Operation Class 3C2 according to EN 60721-3-3 Biological environmental conditions: Storage in the transport packaging Class 1B1 according to EN 60721-3-1 Transport in the transport packaging Class 2B1 according to EN 60721-3-2 Operation Class 3B1 according to EN 60721-3-3 Vibratory load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-3 Vibratory load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Shock load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-2 Shock load Long-term storage in the transport packaging Class 2M3 according to EN 60721-3-2 Deration Class 2M2 according to EN 60721-3-2 Deration Class 2M3 according to EN 60721-3-2 Deration Class 2M2 according to EN 60721-3-2 Test values: 49 m/s² (5g)/30 ms Test values: 98 m/s² (10g)/20 ms Climatic ambient conditions Climatic ambient conditions Class 1K4 according to EN 60721-3-1 Temperature: -25° C to +55° C Transport in the transport packaging Class 2K4 according to EN 60721-3-2 Temperature: -26° C to +70° C Operation Class 3K3 according to EN 60721-3-3 Temperature: -26° C to +70° C Class 3K3 according to EN 60721-3-3 Temperature: -40° C to +70° C Class 3K3 according to EN 60721-3-3 Temperature: -40° C to +40° C Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, ordensation, dripping water, spray, oil mist, salt mist, ice formation, condensation, dripping water, spray, oil mist, salt mist, ice formation,	Description of the second of t				
Section Sect					
current derating or reduction of the ambient temperature by 3.5 K per 500 m. Chemically active substances Long-term storage in the transport packaging Class 1C2 according to EN 60721-3-1 Transport in the transport packaging Class 3C2 according to EN 60721-3-2 Operation Class 3C2 according to EN 60721-3-3 Biological environmental conditions: Storage in the transport packaging Class 1B1 according to EN 60721-3-1 Transport in the transport packaging Class 3B1 according to EN 60721-3-2 Operation Class 3B1 according to EN 60721-3-2 Operation Class 3B1 according to EN 60721-3-3 Wibratory load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Shock load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Shock load Long-term storage in the transport packaging Class 2M3 according to EN 60721-3-2 Blocksize format FSA to FSB Test values: 147 m/s² (15g)/11 ms Blocksize format FSC to FSF Test values: 49 m/s² (15g)/30 ms Chassis format Class 1K4 according to EN 60721-3-1 Temperature: -26° C to +55° C Tensport in the transport packaging Class 1K4 according to EN 60721-3-2 Transport in the transport packaging Class 3K3 according to EN 60721-3-2 Temperature: -26° C to +55° C Class 3K3 according to EN 60721-3-3 Temperature: -26° C to +70° C Operation Class 3K3 according to EN 60721-3-3 Temperature: -40° C to +40° C Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, condensation, dripping water, spray,	and motalidation distage in operation				
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Chemically active substances Long-term storage in the transport packaging Class 1C2 according to EN 60721-3-1 Transport in the transport packaging Class 3C2 according to EN 60721-3-2 Operation Class 3C2 according to EN 60721-3-3 Biological environmental conditions: Storage in the transport packaging Class 1B1 according to EN 60721-3-1 Transport in the transport packaging Class 2B1 according to EN 60721-3-2 Operation Class 3B1 according to EN 60721-3-3 Vibratory load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Shock load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-2 Shock load Long-term storage in the transport packaging Class 2M3 according to EN 60721-3-2 Operation Class 2M2 according to EN 60721-3-2 Operation Class 2M2 according to EN 60721-3-2 Test values: 147 m/s² (15g)/11 ms Blocksize format FSA to FSB Test values: 49 m/s² (5g)/30 ms Chassis format Test values: 98 m/s² (10g)/20 ms Climatic ambient conditions Class 1K4 according to EN 60721-3-1 Temperature: -25° C to +55° C Transport in the transport packaging Class 1K4 according to EN 60721-3-2 Temperature: -25° C to +55° C Class 2K4 according to EN 60721-3-2 Temperature: -40° C to +70° C Class 3K3 according to EN 60721-3-3 Temperature: -40° C to +40° C Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, condensation, dripping water, spray,					
Class 1C2 according to EN 60721-3-1		reduction of the ambient temperature by 3.5 K per 500 m.			
Transport in the transport packaging Class 2C2 according to EN 60721-3-2 Operation Class 3C2 according to EN 60721-3-3 Biological environmental conditions: Storage in the transport packaging Class 1B1 according to EN 60721-3-1 Transport in the transport packaging Class 2B1 according to EN 60721-3-2 Operation Class 3B1 according to EN 60721-3-3 Vibratory load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Shock load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-2 Deperation Class 2M3 according to EN 60721-3-1 Transport in the transport packaging Class 1M2 according to EN 60721-3-2 Deperation Class 2M3 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Deperation Class 2M2 according to EN 60721-3-2 Blocksize format FSA to FSB Test values: 147 m/s² (15g)/11 ms Blocksize format FSC to FSF Test values: 49 m/s² (5g)/30 ms Chassis format Trest values: 98 m/s² (10g)/20 ms Climatic ambient conditions Long-term storage in the transport packaging Class 1K4 according to EN 60721-3-1 Temperature: -25° C to +55° C Transport in the transport packaging Class 2K4 according to EN 60721-3-2 Temperature: -40° C to +70° C Operation Class 3K3 according to EN 60721-3-3 Temperature -0° C to +40° C Relative humidity: 5% to 90% Oll mist, salt mist, ice formation, condensation, dripping water, spray,					
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Biological environmental conditions: Storage in the transport packaging Class 1B1 according to EN 60721-3-1 Transport in the transport packaging Class 3B1 according to EN 60721-3-2 Operation Class 3B1 according to EN 60721-3-3 Vibratory load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Shock load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-2 Shock load Long-term storage in the transport packaging Class 2M3 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Operation Class 2M2 according to EN 60721-3-2 Blocksize format FSA to FSB Test values: 147 m/s² (15g)/11 ms Blocksize format FSC to FSF Test values: 49 m/s² (5g)/30 ms Chassis format Test values: 98 m/s² (10g)/20 ms Climatic ambient conditions Class 1K4 according to EN 60721-3-1 Temperature: -25° C to +55° C Transport in the transport packaging Class 2K4 according to EN 60721-3-2 Temperature: -40° C to +70° C Operation Class 3K3 according to EN 60721-3-3 Temperature: -40° C to +40° C Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, condensation, dripping water, spray,	- ' ' ' '				
Storage in the transport packaging Class 1B1 according to EN 60721-3-1 Transport in the transport packaging Class 2B1 according to EN 60721-3-2 Operation Class 3B1 according to EN 60721-3-3 Vibratory load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Shock load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-2 Shock load Long-term storage in the transport packaging Class 2M3 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Operation Class 2M2 according to EN 60721-3-2 Blocksize format FSA to FSB Test values: 147 m/s² (15g)/11 ms Blocksize format FSC to FSF Test values: 98 m/s² (10g)/20 ms Climatic ambient conditions Long-term storage in the transport packaging Class 1K4 according to EN 60721-3-1 Temperature: -25° C to +55° C Transport in the transport packaging Class 2K4 according to EN 60721-3-2 Temperature: -40° C to +70° C Operation Class 3K3 according to EN 60721-3-3 Temperature: -40° C to +40° C Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, condensation, dripping water, spray,	- 1	Class 3C2 according to EN 60721-3-3			
Transport in the transport packaging Class 2B1 according to EN 60721-3-2 Operation Class 3B1 according to EN 60721-3-3 Vibratory load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Shock load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Operation Class 2M2 according to EN 60721-3-2 Blocksize format FSA to FSB Test values: 147 m/s² (15g)/11 ms Blocksize format FSC to FSF Test values: 98 m/s² (5g)/30 ms Chassis format Class 1K4 according to EN 60721-3-1 Temperature: -25° C to +55° C Transport in the transport packaging Class 2K4 according to EN 60721-3-2 Temperature: -40° C to +70° C Operation Class 3K3 according to EN 60721-3-3 Temperature +0° C to +40° C Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, ondensation, dripping water, spray,					
Class 3B1 according to EN 60721-3-3 Vibratory load	Storage in the transport packaging	Class 1B1 according to EN 60721-3-1			
Vibratory load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Shock load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Operation Class 2M2 according to EN 60721-3-2 Blocksize format FSA to FSB Test values: 147 m/s² (15g)/11 ms Blocksize format FSC to FSF Test values: 49 m/s² (5g)/30 ms Chassis format Test values: 98 m/s² (10g)/20 ms Climatic ambient conditions Long-term storage in the transport packaging Class 1K4 according to EN 60721-3-1 Temperature: -25° C to +55° C Transport in the transport packaging Class 2K4 according to EN 60721-3-2 Temperature: -40° C to +70° C Class 3K3 according to EN 60721-3-3 Temperature: -40° C to +40° C Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, condensation, dripping water, spray,					
Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Shock load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Operation Class 2M2 according to EN 60721-3-2 Blocksize format FSA to FSB Test values: 147 m/s² (15g)/11 ms Blocksize format FSC to FSF Test values: 49 m/s² (5g)/30 ms Class if values: 98 m/s² (10g)/20 ms Climatic ambient conditions Class 1K4 according to EN 60721-3-1 Temperature: -25° C to +55° C Transport in the transport packaging Class 2K4 according to EN 60721-3-2 Temperature: -40° C to +70° C Class 3K3 according to EN 60721-3-3 Temperature: -40° C to +70° C Class 3K3 according to EN 60721-3-3 Temperature: -40° C to +40° C Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, condensation, dripping water, spray,	Operation	Class 3B1 according to EN 60721-3-3			
Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Shock load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Operation Class 2M2 according to EN 60721-3-2 Blocksize format FSA to FSB Test values: 147 m/s² (15g)/11 ms Blocksize format FSC to FSF Test values: 49 m/s² (5g)/30 ms Chassis format Test values: 98 m/s² (10g)/20 ms Climatic ambient conditions Long-term storage in the transport packaging Class 1K4 according to EN 60721-3-1 Temperature: -25° C to +55° C Transport in the transport packaging Class 2K4 according to EN 60721-3-2 Temperature: -40° C to +70° C Class 3K3 according to EN 60721-3-3 Temperature +0° C to +40° C Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, condensation, dripping water, spray,	Vibratory load				
Shock load Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Operation Class 2M2 according to EN 60721-3-2 Blocksize format FSA to FSB Test values: 147 m/s² (15g)/11 ms Blocksize format FSC to FSF Test values: 49 m/s² (5g)/30 ms Chassis format Test values: 98 m/s² (10g)/20 ms Climatic ambient conditions Long-term storage in the transport packaging Class 1K4 according to EN 60721-3-1 Temperature: -25° C to +55° C Transport in the transport packaging Class 2K4 according to EN 60721-3-2 Temperature: -40° C to +70° C Class 3K3 according to EN 60721-3-3 Temperature +0° C to +40° C Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, condensation, dripping water, spray,	Long-term storage in the transport packaging	Class 1M2 according to EN 60721-3-1			
Long-term storage in the transport packaging Class 1M2 according to EN 60721-3-1 Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Operation Class 2M2 according to EN 60721-3-2 Blocksize format FSA to FSB Test values: 147 m/s² (15g)/11 ms Blocksize format FSC to FSF Test values: 49 m/s² (5g)/30 ms Chassis format Test values: 98 m/s² (10g)/20 ms Climatic ambient conditions Class 1K4 according to EN 60721-3-1 Temperature: -25° C to +55° C Transport in the transport packaging Class 2K4 according to EN 60721-3-2 Temperature: -40° C to +70° C Operation Class 3K3 according to EN 60721-3-3 Temperature +0° C to +40° C Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, condensation, dripping water, spray,	Transport in the transport packaging	Class 2M3 according to EN 60721-3-2			
Transport in the transport packaging Class 2M3 according to EN 60721-3-2 Class 2M2 according to EN 60721-3-2 Blocksize format FSA to FSB Test values: 147 m/s² (15g)/11 ms Blocksize format FSC to FSF Test values: 49 m/s² (5g)/30 ms Chassis format Climatic ambient conditions Long-term storage in the transport packaging Class 1K4 according to EN 60721-3-1 Temperature: -25° C to +55° C Transport in the transport packaging Class 2K4 according to EN 60721-3-2 Temperature: -40° C to +70° C Operation Class 3K3 according to EN 60721-3-3 Temperature +0° C to +40° C Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, condensation, dripping water, spray,	Shock load				
Operation Class 2M2 according to EN 60721-3-2 Blocksize format FSA to FSB Test values: 147 m/s² (15g)/11 ms Blocksize format FSC to FSF Test values: 49 m/s² (5g)/30 ms Chassis format Climatic ambient conditions Long-term storage in the transport packaging Class 1K4 according to EN 60721-3-1 Temperature: -25° C to +55° C Transport in the transport packaging Class 2K4 according to EN 60721-3-2 Temperature: -40° C to +70° C Operation Class 3K3 according to EN 60721-3-3 Temperature +0° C to +40° C Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, condensation, dripping water, spray,	Long-term storage in the transport packaging	Class 1M2 according to EN 60721-3-1			
Blocksize format FSA to FSB Test values: 147 m/s² (15g)/11 ms Blocksize format FSC to FSF Test values: 49 m/s² (5g)/30 ms Chassis format Test values: 98 m/s² (10g)/20 ms Climatic ambient conditions Long-term storage in the transport packaging Class 1K4 according to EN 60721-3-1 Temperature: -25° C to +55° C Transport in the transport packaging Class 2K4 according to EN 60721-3-2 Temperature: -40° C to +70° C Operation Class 3K3 according to EN 60721-3-3 Temperature +0° C to +40° C Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, condensation, dripping water, spray,	Transport in the transport packaging	Class 2M3 according to EN 60721-3-2			
Blocksize format FSC to FSF Test values: 49 m/s² (5g)/30 ms Chassis format Test values: 98 m/s² (10g)/20 ms Climatic ambient conditions Long-term storage in the transport packaging Class 1K4 according to EN 60721-3-1 Temperature: -25° C to +55° C Transport in the transport packaging Class 2K4 according to EN 60721-3-2 Temperature: -40° C to +70° C Operation Class 3K3 according to EN 60721-3-3 Temperature +0° C to +40° C Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, condensation, dripping water, spray,	Operation	Class 2M2 according to EN 60721-3-2			
Climatic ambient conditions Long-term storage in the transport packaging Class 1K4 according to EN 60721-3-1 Temperature: -25° C to +55° C Transport in the transport packaging Class 2K4 according to EN 60721-3-2 Temperature: -40° C to +70° C Class 3K3 according to EN 60721-3-3 Temperature +0° C to +40° C Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, condensation, dripping water, spray,	Blocksize format FSA to FSB	Test values: 147 m/s² (15g)/11 ms			
Climatic ambient conditions Long-term storage in the transport packaging Class 1K4 according to EN 60721-3-1 Temperature: -25° C to +55° C Class 2K4 according to EN 60721-3-2 Temperature: -40° C to +70° C Operation Class 3K3 according to EN 60721-3-3 Temperature +0° C to +40° C Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, condensation, dripping water, spray,	Blocksize format FSC to FSF	Test values: 49 m/s² (5g)/30 ms			
Long-term storage in the transport packaging Class 1K4 according to EN 60721-3-1 Temperature: -25° C to +55° C Class 2K4 according to EN 60721-3-2 Temperature: -40° C to +70° C Operation Class 3K3 according to EN 60721-3-3 Temperature +0° C to +40° C Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, condensation, dripping water, spray,	Chassis format	Test values: 98 m/s² (10g)/20 ms			
Temperature: -25° C to +55° C Transport in the transport packaging Class 2K4 according to EN 60721-3-2 Temperature: -40° C to +70° C Class 3K3 according to EN 60721-3-3 Temperature +0° C to +40° C Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, condensation, dripping water, spray,	Climatic ambient conditions				
Temperature: -40° C to +70° C Operation Class 3K3 according to EN 60721-3-3 Temperature +0° C to +40° C Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, condensation, dripping water, spray,	Long-term storage in the transport packaging				
Temperature +0° C to +40° C Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, condensation, dripping water, spray,	Transport in the transport packaging				
Relative humidity: 5% to 90% Oil mist, salt mist, ice formation, condensation, dripping water, spray,	Operation				
Oil mist, salt mist, ice formation, condensation, dripping water, spray,					

Table 2- 3 Certificates

Declarations of Conformity	CE (Low-Voltage and EMC Directive)		
Approvals	cULus		
	cURus		

2.6 Derating as a function of the ambient temperature, pulse frequency, and installation altitude

Preliminary remark

The air pressure and therefore the air density drop at altitudes above sea level. At these altitudes, the same quantity of air does not have the same cooling effect and the air gap between two electrical conductors can only insulate a lower voltage. Typical values for air pressure are summarized in the table below:

Table 2-4 Air pressure for various installation altitudes

Installation altitude above sea level in [m]	0	1000	2000	3000	4000
Air pressure in mbar [kPa]	100	90	80	70	62

Derating

The Power Modules are designed for operation under the following conditions:

- Ambient temperature 0° C up to 40° C
- The pulse frequency specified for each Power Module
- Installation altitude of up to 1000 m above MSL for Blocksize Power Modules.
- Up to 2000 m above MSL for Chassis Power Modules.

If you operate the Power Modules at higher ambient temperatures, pulse frequencies, or installation altitudes, you must reduce the output current.

You will find the reduction factors for the individual units in the technical data of the relevant Power Modules.

The maximum permissible ambient temperature for all Power Modules is 55° C.

A TN or TT system with grounded neutral point is required (no grounded phase conductor) for installation altitudes above 2000 m. If the neutral point is not grounded, an isolating transformer must be connected upstream for which the secondary windings are grounded at the neutral point.

A reduction of the line supply voltage phase-phase is not necessary.