

## Data sheet

SM 031 (031-1BB90)

## Technical data

Type         SM 031           Modulo ID         0403 1543           General information         Common	Order no.	031-1BB90
General Information         -           Note         -           Features         2x AI 16 Bit Voltage -80 m V+80 m V To type J. K. N. R. S. T. B, C, E, L           Current consumption from backplane bus         85 mA           Power loss         1.1 W           Technical data analog inputs           Number of inputs         2           Cable length, shielded         200 m           Rated load voltage         DC 24 V           Current consumption from load voltage L+ (without load)         30 mA           Voltage inputs         -           Min. input resistance (voltage range)         10 MOhm           Input voltage ranges         -80 mV+80 mV           Operational limit of voltage ranges with SFU         ±0.3%           Depractional limit of voltage ranges with SFU         ±0.9%           Basic error limit voltage ranges with SFU         ±0.05%           Basic error limit voltage ranges with SFU         ±0.05%           Destruction limit of current ranges         -           Max. input resistance (current ranges)         -           Input current ranges         -           Operational limit of current ranges with SFU         -           Basic error limit current ranges with SFU         -           Basic error l	Туре	SM 031
Note         2 - All 16 Bit 16 Bi		0403 1543
Features 2x Al 1 6 Bit 7x Al 1 8 Bit 7x Al 1	General information	
Features 2x Al 1 6 Bit 7x Al 1 8 Bit 7x Al 1	Note	-
TC type J, K, N, R, S, T, B, C, E, L           Current consumption from backplane bus         85 mA           Power loss         1.1 W           Technical data analog Inputs           Number of inputs         2           Cable length, shielded         200 m           Rated load voltage         DC 24 V           Current consumption from load voltage L+ (without load)         30 mA           Voltage inputs         10 MOhm           Input voltage ranges         80 mV +80 mV           Operational limit of voltage ranges         ±0.3%           Operational limit of voltage ranges with SFU         ±0.1%           Basic error limit voltage ranges with SFU         ±0.05%           Basic error limit voltage ranges with SFU         ±0.05%           Destruction limit voltage ranges with SFU         -           Max. input resistance (current range)         -           Input current ranges         -           Operational limit of urrent ranges with SFU         -           Basic error limit current ranges with SFU         -           Basic error limit current inputs (voltage)         -           Destruction limit current inputs (voltage)         -           Destruction limit current inputs (voltage)         -		16 Bit
Current consumption from backplane bus         85 mA           Power loss         1.1 W           Technical data analog inputs		Voltage -80 mV+80 mV TC type J, K, N, R, S, T, B, C, E, L
Power loss         1.1 W           Technical data analog inputs         2           Number of inputs         2           Cable length, shielded         200 m           Rated load voltage         DC 24 V           Current consumption from load voltage L+ (without load)         30 mA           Voltage inputs         -           Min. input resistance (voltage range)         10 MOhm           Input voltage ranges         80 mV +80 mV           Operational limit of voltage ranges with SFU         \$0.3%           Basic error limit voltage ranges with SFU         \$0.1%           Basic error limit voltage ranges with SFU         \$0.5%           Destruction limit voltage ranges with SFU         \$0.05%           Destruction limit voltage         -           Mx. input resistance (current range)         -           Input current ranges         -           Operational limit of current ranges with SFU         -           Basic error limit current ranges with SFU         -           Destruction limit current ranges with SFU         -           Besistance inputs         -           Resistance inputs         -           Resistance ranges         -           Operational limit of resistor ranges with SFU         -	Current consumption/power loss	
Technical data analog inputs           Number of inputs         2           Cable length, shielded         200 m           Rated load voltage         DC 24 V           Current consumption from load voltage L+ (without load)         30 mA           Voltage inputs         -           Min. input resistance (voltage range)         10 MOhm           Input voltage ranges         -80 mV +80 mV           Operational limit of voltage ranges         ±0.3%           Operational limit of voltage ranges with SFU         ±0.1%           Basic error limit voltage ranges with SFU         ±0.05%           Basic error limit voltage ranges with SFU         ±0.05%           Destruction limit voltage         max. 20V           Current inputs         -           Max. input resistance (current range)         -           Input current ranges         -           Operational limit of current ranges         -           Operational limit of current ranges with SFU         -           Basic error limit current ranges with SFU         -           Basic error limit current inputs (voltage)         -           Destruction limit current inputs (electrical current)         -           Resistance ranges         -           Operational limit of resistor ranges w	Current consumption from backplane bus	85 mA
Number of inputs         2           Cable length, shielded         200 m           Rated load voltage         DC 24 V           Current consumption from load voltage L+ (without load)         30 mA           Voltage inputs         -           Min. input resistance (voltage range)         10 MOhm           Input voltage ranges         -80 mV +80 mV           Operational limit of voltage ranges         ±0.3%           Operational limit of voltage ranges with SFU         ±0.1%           Basic error limit voltage ranges with SFU         ±0.05%           Basic error limit voltage ranges with SFU         ±0.05%           Max. input resistance (current range)         -           Max. input resistance (current range)         -           Max. input resistance (current ranges)         -           Operational limit of current ranges         -           Operational limit of current ranges with SFU         -           Basic error limit current ranges with SFU         -           Destruction limit current inputs (voltage)         -           Destruction limit current inputs (electrical current)         -           Resistance inputs         -           Resistance ranges         -           Operational limit of resistor ranges with SFU         -	Power loss	1.1 W
Cable length, shielded         200 m           Rated load voltage         DC 24 V           Current consumption from load voltage L+ (without load)         30 mA           Voltage inputs         -           Min. input resistance (voltage range)         10 MOhm           Input voltage ranges         -80 mV +80 mV           Operational limit of voltage ranges with SFU         ±0.3%           Destructional limit of voltage ranges with SFU         ±0.05%           Basic error limit voltage ranges with SFU         ±0.05%           Destruction limit voltage ranges with SFU         max. 20V           Current inputs         -           Max. input resistance (current range)         -           Input current ranges         -           Operational limit of current ranges         -           Operational limit of current ranges with SFU         -           Basic error limit current ranges with SFU         -           Bestruction limit current inputs (voltage)         -           Destruction limit current inputs (voltage)         -           Destruction limit current inputs (electrical current)         -           Resistance inputs         -           Operational limit of resistor ranges         -           Operational limit of resistor ranges with SFU         -	Technical data analog inputs	
Rated load voltage         DC 24 V           Current consumption from load voltage L+ (without load)         30 mA           Voltage inputs         -           Min. input resistance (voltage range)         10 MOhm           Input voltage ranges         -80 mV +80 mV           Operational limit of voltage ranges with SFU         ±0.3%           Destructional limit of voltage ranges with SFU         ±0.1%           Basic error limit voltage ranges with SFU         ±0.05%           Destruction limit voltage ranges with SFU         max. 20V           Current inputs         -           Max. input resistance (current range)         -           Input current ranges         -           Operational limit of current ranges         -           Operational limit of current ranges with SFU         -           Basic error limit current ranges with SFU         -           Basic error limit current inputs (voltage)         -           Destruction limit current inputs (voltage)         -           Destruction limit current inputs (electrical current)         -           Resistance ranges         -           Operational limit of resistor ranges with SFU         -           Basic error limit         -           Operational limit of resistor ranges         -	Number of inputs	2
Current consumption from load voltage L+ (without load)  Voltage inputs	Cable length, shielded	200 m
Voltage inputs         -           Min. input resistance (voltage range)         10 MOhm           Input voltage ranges         +80 mV +80 mV           Operational limit of voltage ranges         ±0.3%           Operational limit of voltage ranges with SFU         ±0.1%           Basic error limit voltage ranges with SFU         ±0.05%           Bestruction limit voltage         max. 20V           Current inputs         -           Max. input resistance (current range)         -           Input current ranges         -           Operational limit of current ranges with SFU         -           Basic error limit current ranges with SFU         -           Operational limit of current ranges with SFU         -           Basic error limit current ranges with SFU         -           Bestruction limit current inputs (voltage)         -           Destruction limit current inputs (voltage)         -           Resistance inputs         -           Resistance ranges         -           Operational limit of resistor ranges with SFU         -           Basic error limit         -           Resistance ranges         -           Operational limit of resistor ranges         -           Operational limit of resistor ranges with SFU	Rated load voltage	DC 24 V
Min. input resistance (voltage ranges)         10 MOhm           Input voltage ranges         -80 mV +80 mV           Operational limit of voltage ranges         ±0.3%           Operational limit of voltage ranges with SFU         ±0.1%           Basic error limit voltage ranges with SFU         ±0.05%           Basic error limit voltage ranges with SFU         ±0.05%           Destruction limit voltage         max. 20V           Current inputs         -           Max. input resistance (current range)         -           Input current ranges         -           Operational limit of current ranges with SFU         -           Basic error limit current ranges with SFU         -           Bestruction limit current inputs (voltage)         -           Destruction limit current inputs (electrical current)         -           Resistance ranges         -           Operational limit of resistor ranges         -           Operational limit of resistor ranges with SFU         -           Resistance ranges         -           Operational limit of resistor ranges with SFU         -           Basic error limit         -           Basic error limit with SFU         -           Basic error limit with SFU         -           Destruction limit re	Current consumption from load voltage L+ (without load)	30 mA
Input voltage ranges         -80 mV +80 mV           Operational limit of voltage ranges         ±0.3%           Operational limit of voltage ranges with SFU         ±0.1%           Basic error limit voltage ranges with SFU         ±0.05%           Basic error limit voltage ranges with SFU         ±0.05%           Destruction limit voltage         max. 20V           Current inputs         -           Max. input resistance (current range)         -           Input current ranges         -           Operational limit of current ranges with SFU         -           Basic error limit current ranges with SFU         -           Resistance inputs (voltage)         -           Destruction limit current inputs (voltage)         -           Destruction limit current inputs (electrical current)         -           Resistance ranges         -           Operational limit of resistor ranges with SFU         -           Basic error limit         -           Operational limit of resistor ranges with SFU         -           Basic error limit with SFU         -           Basic error limit with SFU         -           Basic error limit tesistance inputs         -           Bestruction limit resistance inputs         -	Voltage inputs	-
Operational limit of voltage ranges         ±0.3%           Operational limit of voltage ranges with SFU         ±0.25%           Basic error limit voltage ranges with SFU         ±0.05%           Destruction limit voltage         max. 20V           Current inputs         -           Max. input resistance (current range)         -           Input current ranges         -           Operational limit of current ranges with SFU         -           Basic error limit current ranges with SFU         -           Basic error limit current ranges with SFU         -           Destruction limit current ranges with SFU         -           Destruction limit current inputs (voltage)         -           Destruction limit current inputs (electrical current)         -           Resistance ranges         -           Operational limit of resistor ranges with SFU         -           Destructional limit of resistor ranges with SFU         -           Basic error limit         -           Operational limit of resistor ranges with SFU         -           Basic error limit with SFU         -           Basic error limit twith SFU         -           Besitance thermometer inputs         -	Min. input resistance (voltage range)	10 MOhm
Operational limit of voltage ranges with SFU         ±0.1%           Basic error limit voltage ranges         ±0.25%           Basic error limit voltage ranges with SFU         ±0.05%           Destruction limit voltage         max. 20V           Current inputs         -           Max. input resistance (current range)         -           Input current ranges         -           Operational limit of current ranges         -           Operational limit of current ranges with SFU         -           Basic error limit current ranges with SFU         -           Destruction limit current inputs (voltage)         -           Destruction limit current inputs (voltage)         -           Resistance inputs         -           Resistance ranges         -           Operational limit of resistor ranges with SFU         -           Basic error limit         -           Operational limit of resistor ranges with SFU         -           Basic error limit         -           Basic error limit with SFU         -           Basic error limit with SFU         -           Basic error limit with SFU         -           Besistance inputs         -           Besistance thermometer inputs         -	Input voltage ranges	-80 mV +80 mV
Basic error limit voltage ranges         ±0.25%           Basic error limit voltage ranges with SFU         ±0.05%           Destruction limit voltage         max. 20V           Current inputs         -           Max. input resistance (current range)         -           Input current ranges         -           Operational limit of current ranges         -           Operational limit of current ranges with SFU         -           Basic error limit current ranges with SFU         -           Destruction limit current inputs (voltage)         -           Destruction limit current inputs (electrical current)         -           Resistance inputs         -           Resistance ranges         -           Operational limit of resistor ranges with SFU         -           Basic error limit         -           Resistance ranges         -           Operational limit of resistor ranges with SFU         -           Basic error limit         -           Basic error limit with SFU         -           Destruction limit resistance inputs         -           Resistance thermometer inputs         -	Operational limit of voltage ranges	±0.3%
Basic error limit voltage ranges with SFU         ±0.05%           Destruction limit voltage         max. 20V           Current inputs         -           Max. input resistance (current range)         -           Input current ranges         -           Operational limit of current ranges         -           Operational limit of current ranges with SFU         -           Basic error limit current ranges with SFU         -           Destruction limit current inputs (voltage)         -           Destruction limit current inputs (electrical current)         -           Resistance inputs         -           Resistance ranges         -           Operational limit of resistor ranges with SFU         -           Basic error limit         -           Resistance inputs         -           Basic error limit of resistor ranges with SFU         -           Destruction limit of resistor ranges with SFU         -           Basic error limit         -           Basic error limit with SFU         -           Destruction limit resistance inputs         -           Besistance thermometer inputs         -	Operational limit of voltage ranges with SFU	±0.1%
Destruction limit voltagemax. 20VCurrent inputs-Max. input resistance (current range)-Input current ranges-Operational limit of current ranges-Operational limit of current ranges with SFU-Basic error limit current ranges with SFU-Radical error limit current ranges with SFU-Destruction limit current inputs (voltage)-Destruction limit current inputs (electrical current)-Resistance inputs-Resistance ranges-Operational limit of resistor ranges-Operational limit of resistor ranges with SFU-Basic error limit-Basic error limit with SFU-Destruction limit resistance inputs-Besistance thermometer inputs-	Basic error limit voltage ranges	±0.25%
Current inputs  Max. input resistance (current range) Input current ranges Input current ranges Operational limit of current ranges Operational limit of current ranges with SFU Basic error limit current ranges with SFU Bestruction limit current ranges with SFU Destruction limit current inputs (voltage) Cestruction limit current inputs (electrical current) Cesistance inputs Resistance ranges Operational limit of resistor ranges with SFU Basic error limit Basic error limit with SFU Destruction limit resistance inputs Cesistance thermometer inputs	Basic error limit voltage ranges with SFU	±0.05%
Max. input resistance (current ranges)       -         Input current ranges       -         Operational limit of current ranges       -         Operational limit of current ranges with SFU       -         Basic error limit current ranges with SFU       -         Destruction limit current inputs (voltage)       -         Destruction limit current inputs (electrical current)       -         Resistance inputs       -         Operational limit of resistor ranges       -         Operational limit of resistor ranges with SFU       -         Basic error limit       -         Basic error limit with SFU       -         Destruction limit resistance inputs       -         Resistance thermometer inputs       -	Destruction limit voltage	max. 20V
Input current ranges Operational limit of current ranges Operational limit of current ranges with SFU Basic error limit current ranges with SFU Coestruction limit current inputs (voltage) Coestruction limit current inputs (electrical current) Coestruction limit or resistor ranges Coestructional limit of resistor ranges Coestruction limit resistance inputs Coest	Current inputs	-
Operational limit of current ranges Operational limit of current ranges with SFU  Basic error limit current ranges Radical error limit current ranges with SFU  Destruction limit current inputs (voltage)  Destruction limit current inputs (electrical current)  Resistance inputs  Resistance ranges  Operational limit of resistor ranges  Operational limit of resistor ranges with SFU  Basic error limit  Basic error limit  Basic error limit  Basic error limit with SFU  Destruction limit resistance inputs  Resistance thermometer inputs	Max. input resistance (current range)	-
Operational limit of current ranges with SFU  Basic error limit current ranges  Radical error limit current ranges with SFU  Destruction limit current inputs (voltage)  Destruction limit current inputs (electrical current)  Resistance inputs  Resistance ranges  Operational limit of resistor ranges  Operational limit of resistor ranges with SFU  Basic error limit  Basic error limit with SFU  Destruction limit resistance inputs  Resistance thermometer inputs	Input current ranges	-
Basic error limit current ranges Radical error limit current ranges with SFU Destruction limit current inputs (voltage) Destruction limit current inputs (electrical current) Resistance inputs Resistance ranges Operational limit of resistor ranges with SFU Destruction limit to resistor ranges with SFU Basic error limit Basic error limit with SFU Destruction limit resistance inputs  Resistance ranges	Operational limit of current ranges	-
Radical error limit current ranges with SFU  Destruction limit current inputs (voltage)  Destruction limit current inputs (electrical current)  Resistance inputs  Resistance ranges  Operational limit of resistor ranges  Operational limit of resistor ranges with SFU  Basic error limit  Basic error limit with SFU  Destruction limit resistance inputs  Resistance thermometer inputs	Operational limit of current ranges with SFU	-
Destruction limit current inputs (voltage)  Destruction limit current inputs (electrical current)  Resistance inputs  Resistance ranges  Operational limit of resistor ranges  Operational limit of resistor ranges with SFU  Basic error limit  Basic error limit with SFU  Destruction limit resistance inputs  Resistance thermometer inputs	Basic error limit current ranges	-
Destruction limit current inputs (electrical current)  Resistance inputs  Resistance ranges  Operational limit of resistor ranges  Operational limit of resistor ranges with SFU  Basic error limit  Basic error limit with SFU  Destruction limit resistance inputs  Resistance thermometer inputs  -  -  -  Resistance month inputs  -  -  -  -  -  -  -  -  -  -  -  -  -	Radical error limit current ranges with SFU	-
Resistance inputs  Resistance ranges  Operational limit of resistor ranges  Operational limit of resistor ranges with SFU  Basic error limit  Basic error limit with SFU  Destruction limit resistance inputs  Resistance thermometer inputs  -	Destruction limit current inputs (voltage)	-
Resistance ranges - Operational limit of resistor ranges - Operational limit of resistor ranges with SFU - Basic error limit - Construction limit resistance inputs - Resistance thermometer inputs -	Destruction limit current inputs (electrical current)	-
Operational limit of resistor ranges	Resistance inputs	-
Operational limit of resistor ranges with SFU - Basic error limit - Basic error limit with SFU - Destruction limit resistance inputs - Resistance thermometer inputs -	Resistance ranges	-
Basic error limit	Operational limit of resistor ranges	-
Basic error limit with SFU -  Destruction limit resistance inputs -  Resistance thermometer inputs -	Operational limit of resistor ranges with SFU	-
Destruction limit resistance inputs - Resistance thermometer inputs -	Basic error limit	-
Resistance thermometer inputs -	Basic error limit with SFU	-
	Destruction limit resistance inputs	-
Resistance thermometer ranges -	Resistance thermometer inputs	-
	Resistance thermometer ranges	-

## YASKAWA VIPA CONTROLS

Temperature error internal compensation 1 K Technical unit of temperature measurement °C, °F, K Resolution in bit 16 Measurement principle Sigma-Delta Basic conversion time 4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel Noise suppression for frequency >90dB at 50Hz (UCM<10V)  Status information, alarms, diagnostics  Status display yes Interrupts yes, parameterizable Diagnostic interrupt yes, parameterizable Diagnostic functions yes Diagnostics information read-out possible Module state green LED Module error display red LED Channel error display red LED Channel error display red LED per channel  Isolation  Between channels of groups to - Between channels and backplane bus yes Between channels and power supply - Max. potential difference between inputs (Ucm) DC 75 V/ AC 50 V  Max. potential difference between inputs and Mana (Ucm) -	Operational limit of resistance thermometer ranges	-
Basic error limit thermoresistor ranges with SFU  Poperational limit of thermocouple ranges  Thermocouple inputs  Thermocouple inputs  Sype B Sype C Sype B Sype C Sype B Sype C	Operational limit of resistance thermometer ranges with SFU	-
Destruction limit resistance thermometer inputs Thermocouple inputs  Thermocouple inputs  Thermocouple ranges  Vapo B Vapo B Vapo E Vap	Basic error limit thermoresistor ranges	-
Thermocouple ranges  Thermocouple ranges  Thermocouple ranges  Thermocouple ranges  Thermocouple ranges  Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±8.0K  Operational limit of thermocouple ranges  Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±8.0K  Operational limit of thermocouple ranges  Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±8.0K  Operational limit of thermocouple ranges with SFU  Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±8.0K  Operational limit of thermocouple ranges with SFU  Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±4.0K  Basic error limit thermoclement ranges  Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±3.0K  Destruction limit thermocouple inputs  Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±3.0K  Destruction limit thermocouple inputs  Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±3.0K  Destruction limit thermocouple inputs  Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±3.0K  Destruction limit thermocouple inputs  Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±4.0K  Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±4.0K  Destruction limit thermocouple inputs  Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±4.0K  Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±4.0K  Destruction limit thermocouple inputs  Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±4.0K  Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±4.0K  Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±4.0K  Destruction limit thermocouple ranges with SFU  Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±4.0K  Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±6.0K  Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±6.0K  Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±6.0K  Type E, L, T, J, K, N: ±1.5K / Type B, C, R, S: ±6.0K  Type E, L, T, J, K, N: ±1.5K / Type B, C, R, S: ±6.0K  Type E, L, T, J, K, N: ±1.5K / Type B, C, R, S: ±6.0K  Type E, L, T, J, K, N: ±1.5K / Type B, C, R, S: ±6.0K  Type E, L, T, J, K, N: ±1.5K / Type B, C, R, S: ±6.0K  Type E, L, T, J, K, N: ±1.5K / Type B, C, R, S: ±6.0K  Typ	Basic error limit thermoresistor ranges with SFU	•
Thermocouple ranges    Vype B   Vype C   Vype J   Vype K   Vype L   Vype J   Vype K   Vype L   Vype L   Vype K   Vype L   Vype L   Vype K   Vype K	Destruction limit resistance thermometer inputs	•
type E type B type B type B type E type B ty	Thermocouple inputs	yes
Operational limit of thermocouple ranges with SFU Type E, L, T, J, K, N: ±1.5K / Type B, C, R, S: ±4.0K Basic error limit thermoelement ranges Type E, L, T, J, K, N: ±2.0K / Type B, C, R, S: ±7.0K Basic error limit thermoelement ranges with SFU Type E, L, T, J, K, N: ±2.0K / Type B, C, R, S: ±3.0K Destruction limit thermoeuple inputs max. 20V Programmable temperature compensation yes External temperature compensation yes Internal temperature compensation Temperature corn internal compensation 1 K Technical unit of temperature measurement "C, *F, K Resolution in bit 16 Sigma-Delta Basic conversion time 4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel Noise suppression for frequency >90dB at 50Hz (UCM<10V)  Status information, alarms, diagnostics Status display yes Interrupts yes Process alarm yes, parameterizable Diagnostic interrupt Diagnostic interrupt Diagnostic interrupt Diagnostic interrupt Diagnostic interrupt Module state Module error display Red LED Channel error display red LED Between channels Between channels of groups to Between channels and backplane bus Between channels and power supply Aux. potential difference between inputs and Mintern (Uiso) Max. potential difference between inputs and Mintern (Uiso) Max. potential difference between inputs and Mintern (Uiso) Max. potential difference between linputs and Mintern (Uiso) Max. potential difference between inputs and Mintern (Uiso) Max. potential difference between linputs and Mintern (Uiso) Max. potential difference between inputs and Mintern (Uiso) Max. potential difference between linputs and Mintern (Uiso) Max. potential difference between Mintern and outputs	Thermocouple ranges	type C type E type J type K type L type N type R type S
Basic error limit thermoelement ranges Basic error limit thermoelement ranges with SFU Type E, L, T, J, K, N: ±2.0K / Type B, C, R, S: ±3.0K  Basic error limit thermocouple inputs max. 20V  Programmable temperature compensation yes  External temperature compensation yes  Internal temperature compensation yes  Temperature error internal compensation 1 K  Technical unit of temperature measurement "C, "F, K  Resolution in bit 16  Measurement principle Sigma-Delta  Basic conversion time A2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  Noise suppression for frequency 990dB at 50Hz (UCM<10V)  Status display yes  Interrups Yes  Process alarm yes, parameterizable Diagnostic interrupt Diagnostic interrupt Diagnostic interrupt Diagnostic information read-out Module state Module error display red LED  Channel error display red LED  Channel error display to the Channel error display  Between channels Between channels Groups to  Between channels of groups to  Between channels and backplane bus Between channels and backplane bus Between channels and power supply Max. potential difference between inputs and Mintern (Uiso)  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between Mintern and outputs  Texture Time Texture Type B, C, R, S. 20.0K  Type E, L, T, J, K, N: ±1.0K / Type B, C, R, S. 20.0K  Type E, L, T, J, K, N: ±1.0K / Type B, C, R, S. 20.0K  Type El. Exp.  Type E, L, T, J, K, N: ±1.0K / Type B, C, R, S. 20.0K  Texture The second s	Operational limit of thermocouple ranges	Type E, L, T, J, K, N: ±2.5K / Type B, C, R, S: ±8.0K
Basic error limit thermoelement ranges with SFU  Destruction limit thermocouple inputs  max. 20V  Programmable temperature compensation  yes  External temperature compensation  yes  Internal temperature error internal compensation  yes  Temperature error internal compensation  Temperature error internal compensation  1 K  Technical unit of temperature measurement  "C, "F, K  Resolution in bit  16  Measurement principle  Sigma-Delta  Basic conversion time  4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  Noise suppression for frequency  990dB at 50Hz (UCM<10V)  Status display  Interrupts  yes  Process alarm  yes, parameterizable  Diagnostic interrupt  yes, parameterizable  Diagnostic functions  yes  Diagnostics information read-out  Module error display  Channel error display  red LED  Channel error display  Settween channels  Between channels and backplane bus  Between channels and backplane bus  Between channels and power supply  Amx. potential difference between inputs and Mintern (Uiso)  Max. potential difference between Mintern and outputs  Type E, T, J, K, N: ±1.0K / Type B, C, R, S: ±3.0K  Type E, T, J, K, N: ±1.0K / Type B, C, R, S: ±3.0K  max. 20V  The C, T, J, K, N. ±1.0K / Type B, C, R, S. 20K  The max. 20V	Operational limit of thermocouple ranges with SFU	Type E, L, T, J, K, N: $\pm 1.5$ K / Type B, C, R, S: $\pm 4.0$ K
Destruction limit thermocouple inputs max. 20V  Programmable temperature compensation yes  External temperature compensation yes  Internal temperature compensation yes  Temperature error internal compensation 1 K  Technical unit of temperature measurement °C, °F, K  Resolution in bit 16  Measurement principle Sigma-Delta  Basic conversion time 4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  Noise suppression for frequency 990dB at 50Hz (UCM<10V)  Status information, alarms, diagnostics  Status display yes  Process alarm yes, parameterizable  Diagnostic interrupt yes, parameterizable  Diagnostic functions yes  Diagnostic functions yes  Module error display red LED  Module error display red LED  Retween channels of groups to -  Between channels and backplane bus yes  Between channels and backplane bus yes  Between channels and power supply -  Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V  Max. potential difference between linputs and Mintern (Uiso) DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V  Max. potential difference between linputs and Mintern (Uiso) DC 75 V/ AC 50 V  Max. potential difference between linputs and Mintern (Uiso) DC 75 V/ AC 50 V  Max. potential difference between linputs and Mintern (Uiso) DC 75 V/ AC 50 V  Max. potential difference between Mintern and outputs -	Basic error limit thermoelement ranges	Type E, L, T, J, K, N: ±2.0K / Type B, C, R, S: ±7.0K
External temperature compensation yes  External temperature compensation yes  Internal temperature compensation yes  Temperature error internal compensation 1 K  Technical unit of temperature measurement °C, °F, K  Resolution in bit 16  Basic conversion time Sigma-Delta  Basic conversion fire  Noise suppression for frequency >90dB at 50Hz (UCM<10V)  Status information, alarms, diagnostics  Status display yes  Interrupts yes  Process alarm yes, parameterizable  Diagnostic interrupt yes, parameterizable  Diagnostic interrupt yes, parameterizable  Diagnostic interrupt possible  Module state green LED  Module error display red LED  Channel error display red LED per channel  Isolation  Between channels and backplane bus  Between channels and power supply  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mintern (Uiso)  Max. potential difference between Mintern and outputs  And potential difference between Mintern and outputs  DC 75 V/ AC 50 V  Max. potential difference between Mintern and outputs	Basic error limit thermoelement ranges with SFU	Type E, L, T, J, K, N: ±1.0K / Type B, C, R, S: ±3.0K
External temperature compensation yes Internal temperature compensation yes Temperature error internal compensation 1 K Technical unit of temperature measurement °C, °F, K Resolution in bit 16 Measurement principle Sigma-Delta Basic conversion time 4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel Noise suppression for frequency >90dB at 50Hz (UCM<10V)  Status information, alarms, diagnostics Status display yes Interrupts yes Process alarm yes, parameterizable Diagnostic interrupt yes, parameterizable Diagnostic interrupt yes, parameterizable Diagnostic information read-out possible Module state green LED Module error display red LED Channel error display red LED Esteween channels Between channels of groups to - Between channels and backplane bus yes Between channels and power supply - Max. potential difference between inputs and Mana (Ucm) Max. potential difference between inputs and Mintern (Uiso) Max. potential difference between linputs and Mintern (Uiso)	Destruction limit thermocouple inputs	max. 20V
Internal temperature compensation yes Temperature error internal compensation 1 K Technical unit of temperature measurement °C, °F, K Resolution in bit 16 Measurement principle Sigma-Delta Basic conversion time 4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel Noise suppression for frequency >90dB at 50Hz (UCM<10V)  Status information, alarms, diagnostics  Status display yes Interrupts yes Process alarm yes, parameterizable Diagnostic functions yes Diagnostic functions yes Diagnostics information read-out possible Module state green LED Module error display red LED Channel error display red LED Setween channels of groups to - Between channels and backplane bus yes Between channels and power supply Max. potential difference between inputs (ucm) DC 75 V/ AC 50 V  Max. potential difference between inputs and Mana (Ucm) Max. potential difference between inputs and Mana (Ucm) Max. potential difference between linguts and Mintern (Uiso) Max. potential difference between inputs and Mintern (Uiso) Max. potential difference between Mintern (Uiso) Max. potential difference between Mintern (Uiso)	Programmable temperature compensation	yes
Temperature error internal compensation 1 K Technical unit of temperature measurement °C, °F, K Resolution in bit 16 Measurement principle Sigma-Delta Basic conversion time 4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel Noise suppression for frequency >90dB at 50Hz (UCM<10V)  Status information, alarms, diagnostics Status display yes Interrupts yes Process alarm yes, parameterizable Diagnostic interrupt yes, parameterizable Diagnostic interrupt yes, parameterizable Diagnostic information read-out possible Module state green LED Module error display red LED Channel error display red LED Channel error display red LED Between channels of groups to - Between channels and backplane bus yes Between channels and power supply - Max. potential difference between inputs (ucm) DC 75 V/ AC 50 V Max. potential difference between inputs and Mintern (Uiso) Max. potential difference between Mintern (Uiso)	External temperature compensation	yes
Technical unit of temperature measurement  Resolution in bit  16  Measurement principle  Basic conversion time  4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  Noise suppression for frequency  >90dB at 50Hz (UCM<10V)  Status information, alarms, diagnostics  Status display  yes  Interrupts  Yes  Process alarm  yes, parameterizable  Diagnostic interrupt  Diagnostic interrupt  Diagnostic interrupt  Diagnostic information read-out  Module state  Green LED  Module error display  Ted LED per channel  Between channels  Between channels  Between channels of groups to  Between channels and backplane bus  Between channels and power supply  Max. potential difference between inputs (Ucm)  Max. potential difference between inputs and Mintern (Uiso)  Max. potential difference between Mintern and outputs	Internal temperature compensation	yes
Resolution in bit  Measurement principle  Basic conversion time  A2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  Noise suppression for frequency  90dB at 50Hz (UCM<10V)  Status information, alarms, diagnostics  Status display  yes  Interrupts  Process alarm  yes, parameterizable  Diagnostic interrupt  yes, parameterizable  Diagnostic functions  yes  Diagnostics information read-out  Module state  Green LED  Module error display  red LED  Channel error display  red LED per channel  Isolation  Between channels  -  Between channels of groups to  Between channels and backplane bus  Between channels and power supply  Max. potential difference between linputs and Mana (Ucm)  Max. potential difference between linputs and Mana (Ucm)  Max. potential difference between Mintern and outputs  1-  Sigma-Detta  4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel  4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) 42 ms (60 Hz) 4	Temperature error internal compensation	1 K
Measurement principle Basic conversion time 4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel Noise suppression for frequency 590dB at 50Hz (UCM<10V)  Status information, alarms, diagnostics  Status display yes Interrupts yes Process alarm yes, parameterizable Diagnostic interrupt yes, parameterizable Diagnostic functions yes Diagnostic information read-out possible Module state green LED Module error display red LED Channel error display red LED Der channel  Between channels - Between channels - Between channels of groups to - Between channels and backplane bus yes Between channels and power supply - Max. potential difference between inputs (Ucm) Diagnostic furction  Max. potential difference between inputs and Mana (Ucm) Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V	Technical unit of temperature measurement	°C, °F, K
Basic conversion time 4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel Noise suppression for frequency >90dB at 50Hz (UCM<10V)  Status information, alarms, diagnostics  Status display yes Interrupts yes Process alarm yes, parameterizable Diagnostic interrupt yes, parameterizable Diagnostic functions yes Diagnostic functions yes Diagnostics information read-out possible Module state green LED Module error display red LED Channel error display red LED Channel error display red LED Setween channels  Between channels of groups to - Between channels and backplane bus yes Between channels and power supply - Max. potential difference between inputs (Ucm) DC 75 V/ AC 50 V  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V	Resolution in bit	16
Noise suppression for frequency >90dB at 50Hz (UCM<10V)  Status information, alarms, diagnostics  Status display yes Interrupts yes Process alarm yes, parameterizable Diagnostic interrupt yes, parameterizable Diagnostic interrupt possible Diagnostic functions yes Diagnostic information read-out possible Module state green LED Module error display red LED Channel error display red LED Channel error display red LED Between channels of groups to Between channels and backplane bus yes Between channels and power supply Max. potential difference between inputs (Ucm) DC 75 V/ AC 50 V  Max. potential difference between inputs and Mana (Ucm) Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V	Measurement principle	Sigma-Delta
Status information, alarms, diagnostics  Status display yes Interrupts yes, parameterizable Process alarm yes, parameterizable Diagnostic interrupt yes, parameterizable Diagnostic functions yes Diagnostics information read-out possible Module state green LED Module error display red LED Channel error display red LED Channel error display red LED Between channels Between channels of groups to - Between channels and backplane bus yes Between channels and power supply - Max. potential difference between inputs (Ucm) DC 75 V/ AC 50 V Max. potential difference between inputs and Mana (Ucm) - Max. potential difference between inputs and Mana (Ucm) - Max. potential difference between inputs and Mana (Ucm) - Max. potential difference between inputs and Mana (Ucm) DC 75 V/ AC 50 V Max. potential difference between inputs and Mana (Ucm) - Max. potential difference between inputs and Mana (Ucm) - Channel difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V Max. potential difference between Mintern and outputs -	Basic conversion time	4.2324.1 ms (50 Hz) 3.8270.5 ms (60 Hz) per channel
Status display Interrupts yes Process alarm yes, parameterizable Diagnostic interrupt yes, parameterizable Diagnostic interrupt yes, parameterizable Diagnostic interrupt Diagnostic functions yes Diagnostics information read-out possible Module state green LED Module error display red LED Channel error display red LED Channel error display red LED per channel  Isolation  Between channels - Between channels - Between channels of groups to - Between channels and backplane bus yes Between channels and power supply - Max. potential difference between inputs (Ucm) DC 75 V/ AC 50 V  Max. potential difference between inputs and Mana (Ucm) Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mana (Ucm)  DC 75 V/ AC 50 V  Max. potential difference between inputs and Mana (Ucm) - CC 75 V/ AC 50 V  Max. potential difference between inputs and Mana (Ucm) - CC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V	Noise suppression for frequency	>90dB at 50Hz (UCM<10V)
Interrupts Process alarm Proce	Status information, alarms, diagnostics	
Process alarm  Diagnostic interrupt  Diagnostic functions  Diagnostic functions  Diagnostics information read-out  Module state  Module error display  Channel error display  Ted LED  Channel error display  Ted LED  Between channels  Between channels of groups to  Between channels and backplane bus  Between channels and power supply  Max. potential difference between inputs (Ucm)  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mintern (Uiso)  DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso)  DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso)  DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso)  DC 75 V/ AC 50 V  Max. potential difference between Mintern and outputs	Status display	yes
Diagnostic interrupt Diagnostic functions yes Diagnostics information read-out Diagnostics information read-out Module state Module state Green LED Module error display red LED Channel error display red LED per channel Isolation  Between channels - Between channels - Between channels and backplane bus yes Between channels and power supply - Max. potential difference between inputs (Ucm) DC 75 V/ AC 50 V Max. potential difference between inputs and Mana (Ucm) Max. potential difference between inputs and Mintern (Uiso) Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V  Max. potential difference between Mintern and outputs -	Interrupts	yes
Diagnostic functions  Diagnostics information read-out  Module state  Module error display  Channel error display  red LED  Channel error display  red LED per channel  Isolation  Between channels  Between channels of groups to  Between channels and backplane bus  Between channels and power supply  Aux. potential difference between inputs (Ucm)  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mintern (Uiso)  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mintern (Uiso)  DC 75 V/ AC 50 V  Max. potential difference between Mintern and outputs  -	Process alarm	yes, parameterizable
Diagnostics information read-out  Module state  Module error display  Channel error display  red LED  Channel error display  red LED per channel  Isolation  Between channels  Eetween channels of groups to  Between channels and backplane bus  Between channels and power supply  Aux. potential difference between inputs (Ucm)  Max. potential difference between Mana and Mintern (Uiso)  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mintern (Uiso)  Max. potential difference between inputs and Mintern (Uiso)  Max. potential difference between inputs and Mintern (Uiso)  Cr5 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso)  DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso)  DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso)  DC 75 V/ AC 50 V  Max. potential difference between Mintern and outputs  -	Diagnostic interrupt	yes, parameterizable
Module state green LED  Module error display red LED  Channel error display red LED per channel  Isolation  Between channels  Between channels of groups to  Between channels and backplane bus yes  Between channels and power supply  -  Max. potential difference between inputs (Ucm)  Max. potential difference between Mana and Mintern (Uiso)  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mintern (Uiso)  Max. potential difference between Mana and Mintern (Uiso)  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between Mintern and outputs  -  Max. potential difference between Mintern and outputs  -	Diagnostic functions	yes
Module error display red LED Channel error display red LED per channel  Isolation  Between channels Between channels of groups to Between channels and backplane bus Between channels and power supply For a company of the company of	Diagnostics information read-out	possible
Channel error display red LED per channel  Isolation  Between channels	Module state	green LED
Between channels	Module error display	red LED
Between channels of groups to  Between channels and backplane bus  Between channels and power supply  Max. potential difference between circuits  Max. potential difference between inputs (Ucm)  Max. potential difference between Mana and Mintern (Uiso)  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mintern (Uiso)  DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso)  DC 75 V/ AC 50 V  Max. potential difference between Mintern and outputs  -	Channel error display	red LED per channel
Between channels of groups to  Between channels and backplane bus  Between channels and power supply  - Max. potential difference between circuits  Max. potential difference between inputs (Ucm)  Max. potential difference between Mana and Mintern (Uiso)  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mintern (Uiso)  DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso)  DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso)  DC 75 V/ AC 50 V  Max. potential difference between Mintern and outputs  -	Isolation	
Between channels and backplane bus  Between channels and power supply  - Max. potential difference between circuits  - Max. potential difference between inputs (Ucm)  Max. potential difference between Mana and Mintern (Uiso)  - Max. potential difference between inputs and Mana (Ucm)  - Max. potential difference between inputs and Mintern (Uiso)  DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso)  DC 75 V/ AC 50 V  Max. potential difference between Mintern and outputs  -	Between channels	-
Between channels and power supply  Max. potential difference between circuits  Max. potential difference between inputs (Ucm)  Max. potential difference between Mana and Mintern (Uiso)  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mintern (Uiso)  DC 75 V/ AC 50 V  Max. potential difference between inputs and Mintern (Uiso)  DC 75 V/ AC 50 V  Max. potential difference between Mintern and outputs  -	Between channels of groups to	-
Max. potential difference between circuits  Max. potential difference between inputs (Ucm)  DC 75 V/ AC 50 V  Max. potential difference between Mana and Mintern (Uiso)  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mintern (Uiso)  DC 75 V/ AC 50 V  Max. potential difference between Mintern and outputs  -	Between channels and backplane bus	yes
Max. potential difference between inputs (Ucm)  Max. potential difference between Mana and Mintern (Uiso)  Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mintern (Uiso)  DC 75 V/ AC 50 V  Max. potential difference between Mintern and outputs  -	Between channels and power supply	-
Max. potential difference between Mana and Mintern (Uiso) -  Max. potential difference between inputs and Mana (Ucm) -  Max. potential difference between inputs and Mintern (Uiso) DC 75 V/ AC 50 V  Max. potential difference between Mintern and outputs -	Max. potential difference between circuits	-
Max. potential difference between inputs and Mana (Ucm)  Max. potential difference between inputs and Mintern (Uiso)  DC 75 V/ AC 50 V  Max. potential difference between Mintern and outputs  -	Max. potential difference between inputs (Ucm)	DC 75 V/ AC 50 V
Max. potential difference between inputs and Mintern (Uiso)  DC 75 V/ AC 50 V  Max. potential difference between Mintern and outputs  -	Max. potential difference between Mana and Mintern (Uiso)	-
Max. potential difference between Mintern and outputs -	Max. potential difference between inputs and Mana (Ucm)	-
	Max. potential difference between inputs and Mintern (Uiso)	DC 75 V/ AC 50 V
Insulation tested with DC 500 V	Max. potential difference between Mintern and outputs	
	Insulation tested with	DC 500 V



## Technical data encoder supply

Technical data encoder supply	
Number of outputs	-
Output voltage (typ)	-
Output voltage (rated value)	-
Short-circuit protection	-
Binding of potential	-
Datasizes	
Input bytes	4
Output bytes	0
Parameter bytes	22
Diagnostic bytes	20
Housing	
Material	PPE / PPE GF10
Mounting	Profile rail 35 mm
Mechanical data	
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm
Net weight	58 g
Weight including accessories	58 g
Gross weight	72 g
Environmental conditions	
Operating temperature	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C
Certifications	
UL certification	yes
KC certification	yes