

Data sheet
SM 031 (031-1CA20)
Technical data

Order no.	031-1CA20
Type	SM 031
Module ID	0841 1809

General information

Note	-
Features	Direct connection of a resistor full bridge (DMS) or load cell 4- or 6-wire connection 16 (24) Bit resolution Auto self calibration zero point and final value Absolute exactness radical error $\pm 0,1\%$ ($\pm 0,01\%$) Onboard power supply 2V5, 5 V, 7V5, 10 V und 12 V

Current consumption/power loss

Current consumption from backplane bus	55 mA
Power loss	1 W

Technical data strain gauge DMS inputs

Number of inputs	1
Cable length, shielded	200 m
Rated load voltage	DC 24 V
Reverse polarity protection of rated load voltage	yes
Current consumption from load voltage L+ (without load)	18 mA
Relative accuracy according to self-calibration	+/-0.01%
Operational limit Usense	+/-0.2%
Operational limit Usig	+/-0.2%
Basic error limit Usense	+/-0.1%
Basic error limit Usig	+/-0.1%
Destruction limit voltage	max. 12V
External bridge supply possible	-
Internal bridge supply possible	yes
Configurable bridge supply	2.5V / max. 120mA 5V / max. 120mA 7.5V / max. 100mA 10V / max. 90mA 12V / max. 80mA
Resolution in bit	24
Measurement principle	successive approximation
Basic conversion time	1ms cycle, 10ms...330ms depending on the filter
Input filter Hardware	Low pass 10kHz 3rd order
Input filter software	Dynamic IIR filter configurable IIR filter 0.1Hz...1000Hz configurable FIR filter 50Hz/60Hz
Initial data size	4 Byte

Data for selection of the strain gauge DMS sensor

Bridge supply voltage EXC	0...12V
Bridge differential voltage SIG	+/-29mV
Rated output	0.5...4mV/V
4 wire connection possible	yes

6 wire connection possible	yes
Possible bridge configuration	symmetric full bridge
Status information, alarms, diagnostics	
Status display	yes
Interrupts	yes, parameterizable
Process alarm	no
Diagnostic interrupt	yes, parameterizable
Diagnostic functions	yes
Diagnostics information read-out	possible
Module state	yes
Module error display	red LED
Channel error display	red LED
Isolation	
Between channels	-
Between channels of groups to	-
Between channels and backplane bus	yes
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 Mintern and outputs	-
Insulation tested with	DC 500 V
Datasizes	
Input bytes	5
Output bytes	1
Parameter bytes	30
Diagnostic bytes	20
Housing	
Material	PC / PPE GF10
Mounting	Profile rail 35 mm
Mechanical data	
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm
Net weight	64 g
Weight including accessories	64 g
Gross weight	78 g
Environmental conditions	
Operating temperature	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C
Certifications	
UL certification	yes
KC certification	in preparation