

Data sheet SM 032 (032-1BD40)

## Technical data

Type         SM 032           Module ID         0504 25E0           General information         Contact Information           Note         -           Features         4 outputs 12Bit Current (94)20mA           Current consumption/power loss           Current consumption from backplane bus         80 mA           Power loss         0.8 W           Technical data analog outputs           Number of outputs         4           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)         -2           Voltage output short-circuit protection         -2           Voltage output short-circuit protection         -2           Max. appetitive load (current range)         -2           Basic error limit voltage ranges         -2           Destruction limit against external applied voltage         -2           Max. in load resistance (current range)         96 <th< th=""><th>Order no.</th><th>032-1BD40</th></th<>	Order no.	032-1BD40
Note	Туре	SM 032
Note         -           Features         4 outputs 12Bit Current 0(4)20mA           Current consumption/power loss         0.8 W           Current consumption from backplane bus         80 mA           Power loss         0.8 W           Technical data analog outputs           Number of outputs         4           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)         -           Voltage outputs short-circuit protection         -           Voltage outputs         -           Min. load resistance (voltage range)         -           Max. capacitive load (current range)         -           Max. acpacitive load (current range)         -           Max. acpacitive load (current range)         -           Max. acpacitive load (current range)         -           Destruction limit against external applied voltage         -           Current outputs         yes           Max. in load resistance (current range)         350 Ohrn           Max. in load resistance (current range)         10 mH           Typ. open circuit voltage current output         12 V	Module ID	0504 25E0
Features 4 outputs 12Bit Current Consumption/power loss  Current Consumption from backplane bus 80 mA Power loss 0.8 W  Technical data analog outputs  Number of outputs 4 Cable length, shielded 200 m Reated load voltage DC 24 V  Reverse polarity protection of rated load voltage yes  Current consumption from load voltage L+ (without load) - Voltage output short-circuit protection - Voltage routputs - Max. capacitive load (current range) - Max. inductive load (current range) - Curper limit voltage ranges - Destruction limit of voltage ranges - Destruction limit against external applied voltage - Current outputs yes Max. in load resistance (current range) 350 hm Max. inductive load (current range) 10 mH Typ, open circuit voltage current output 12 V Cuput current ranges - Curper circuit voltage current output 12 V Cuput current ranges - Destruction limit against external applied voltage - Curper timit current ranges - Destruction limit of current ranges - Destruction limit of current ranges - Destruction limit against external applied voltage - Curper timit current ranges - Destruction limit against external applied voltage - Curper timit current ranges - Destruction limit against external applied voltage - Curper timit current ranges - Destruction limit against external applied voltage - Curper timit current ranges - Destruction limit against external applied voltage - Curper timit current ranges - Destruction limit against external applied voltage - Curper timit current ranges - Destruction limit against external applied voltage - Curper timit current ranges - Destruction limit against external applied voltage - Curper timit current ranges - Destruction limit against external applied voltage - Curper timit current ranges - D	General information	
Current consumption/power loss           Current consumption from backplane bus         80 mA           Power loss         0.8 W           Technical data analog outputs           Number of outputs         4           Cable length, shielded         200 m           Rated load voltage         bc 24 V           Reverse polarity protection of rated load voltage         yes           Current consumption from load voltage L+ (without load)         -           Voltage outputs short-circuit protection         -           Voltage outputs         -           Min. load resistance (voltage range)         -           Max. capacitive load (current range)         -           Max. apacitive load (current range)         -           Output voltage ranges         -           Operational limit of voltage ranges         -           Destruction limit against external applied voltage         -           Easic error limit voltage ranges         -           Destruction limit against external applied voltage         -           Current outputs         yes           Max. inductive load (current range)         350 Ohm           Max. inductive load (current range)         10 mH           Typ. open circuit voltage current output         12 V	Note	-
Current consumption/power loss  Current consumption from backplane bus  80 mA  Power loss  0.8 W  Technical data analog outputs  Number of outputs  4 Cable length, shielded  200 m  Rated load voltage  DC 24 V  Reverse polarity protection of rated load voltage  yes  Current consumption from load voltage + (without load)  Voltage output short-circuit protection	Features	
Current consumption from backplane bus         80 mA           Power loss         0.8 W           Technical data analog outputs         4           Number of outputs         4           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)         -           Voltage output short-circuit protection         -           Voltage outputs         -           Min. load resistance (voltage range)         -           Max. capacitive load (current range)         -           Max. inductive load (current range)         -           Max. inductive load (current range)         -           Max. inductive load (current range)         -           Destruction limit against external applied voltage         -           Current outputs         yes           Max. in load resistance (current range)         350 Ohm           Max. in load resistance (current range)         10 mH           Typ. open circuit voltage current output         12 V           Output current ranges         +/-0.4% +/-0.5%           Basic error limit current ranges         +/-0.2% +/-0.3%           Destruction lim		Current 0(4)20mA
Power loss         0.8 W           Technical data analog outputs         4           Number of outputs         4           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)         -           Voltage output short-circuit protection         -           Voltage output short-circuit protection         -           Wax. capacitive load (current range)         -           Min. load resistance (voltage range)         -           Max. inductive load (current range)         -           Max. inductive load (current range)         -           Operational limit of voltage ranges         -           Destruction limit against external applied voltage         -           Destruction limit against external applied voltage         -           Max. in load resistance (current range)         350 Ohm           Max. in load resistance (current range)         10 mH           Typ. open circuit voltage current output         12 V           Output current ranges         +0.4% +20 mA           At m +20 mA         4 m +20 mA           At m +20 mA         4 m +20 mA	Current consumption/power loss	
Number of outputs 4 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) - Voltage output short-circuit protection - Voltage output short-circuit protection - Voltage outputs - Min. load resistance (voltage range) - Max. capacitive load (current range) - Max. inductive load (current range) - Current outputs granges - Current init voltage ranges - Current outputs granges - Destruction limit against external applied voltage - Current outputs - Max. in load resistance (current range) - Current outputs - Max. in load resistance (current range) - Current outputs - Max. in load resistance (current range) - Current outputs - Max. in load resistance (current range) - Current outputs - Max. in load resistance (current range) - Current outputs - Max. in load resistance (current range) - Current outputs - Max. in load resistance (current range) - Current outputs - Max. in load resistance (current range) - Current outputs - Max. in load resistance (current range) - Current outputs - Current output (current range) - Current output - Curre	Current consumption from backplane bus	80 mA
Number of outputs         4           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)         -           Voltage output short-circuit protection         -           Voltage outputs short-circuit protection         -           Woltage outputs short-circuit protection         -           William (and resistance (voltage range)         -           Max. capacitive load (current range)         -           Max. inductive load (current range)         -           Output voltage ranges         -           Operational limit of voltage ranges         -           Basic error limit voltage ranges         -           Destruction limit against external applied voltage         -           Max. in load resistance (current range)         yes           Max. in load resistance (current range)         10 mH           Max. inductive load (current range)         12 V           Output current ranges         -/-0.4% +/-0.5%           Basic error limit current ranges         +/-0.4% +/-0.5%           Basic error limit current ranges         -/-0.2% +/-0.3%           Destruction limit against external applied vol	Power loss	0.8 W
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)         -           Voltage output short-circuit protection         -           Voltage outputs         -           Min. load resistance (voltage range)         -           Max. capacitive load (current range)         -           Max. inductive load (current range)         -           Output voltage ranges         -           Basic error limit of voltage ranges         -           Basic error limit voltage ranges         -           Max. in load resistance (current range)         -           Max. in load resistance (current range)         9c           Max. in load resistance (current range)         10 mH           Typ. open circuit voltage current output         12 V           Output current ranges         0 mA +20 mA +40.5%           Basic error limit current ranges         +/-0.4% +/-0.5%           Basic error limit current ranges         -/-0.2% +/-0.3%           Destruction limit against external applied voltage         max. 12V (30V for 1s)           Settling time for capacitive load         1.5 ms           Settling time for induc	Technical data analog outputs	
Rated load voltage Polarity protection of rated load voltage yes  Current consumption from load voltage L+ (without load) -  Voltage output short-circuit protection -  Voltage outputs Polarity protection -  Voltage outputs -  Min. load resistance (voltage range) -  Max. capacitive load (current range) -  Max. inductive load (current range) -  Seasic error limit voltage ranges -  Current outputs -  Max. in load resistance (voltage ranges -  Current outputs -  Max. in load resistance (current range) -  Current outputs -  Max. in load resistance (current range) -  Current outputs yes  Max. in load resistance (current range) -  Max. in load resistance (current range) -  Current outputs yes  Max. in load resistance (current range) -  Max. inductive load (current range) -  Operational limit of current ranges -  A-0 mA+20 mA+40 mA+40 mA+40 mA+20 mA+40 mA	Number of outputs	4
Reverse polarity protection of rated load voltage Current consumption from load voltage L+ (without load) Voltage output short-circuit protection Voltage outputs	Cable length, shielded	200 m
Current consumption from load voltage L+ (without load)       -         Voltage output short-circuit protection       -         Min. load resistance (voltage range)       -         Max. capacitive load (current range)       -         Max. inductive load (current range)       -         Output voltage ranges       -         Operational limit of voltage ranges       -         Basic error limit voltage ranges       -         Destruction limit against external applied voltage       -         Current outputs       yes         Max. in load resistance (current range)       350 Ohm         Max. inductive load (current range)       10 mH         Typ. open circuit voltage current output       12 V         Output current ranges       +/-0.4% +/-0.5%         Basic error limit current ranges       +/-0.2% +/-0.3%         Operational limit of current ranges       +/-0.2% +/-0.3%         Destruction limit against external applied voltage       max. 12V (30V for 1s)         Settling time for ohmic load       0.25 ms         Settling time for inductive load       1.5 ms         Resolution in bit       12         Conversion time       2 ms all channels         Substitute value can be applied	Rated load voltage	DC 24 V
Voltage output short-circuit protection       -         Voltage outputs       -         Min. load resistance (voltage range)       -         Max. capacitive load (current range)       -         Max. inductive load (current range)       -         Output voltage ranges       -         Operational limit of voltage ranges       -         Basic error limit voltage ranges       -         Destruction limit against external applied voltage       -         Current outputs       yes         Max. in load resistance (current range)       350 Ohm         Max. inductive load (current range)       10 mH         Typ. open circuit voltage current output       12 V         Output current ranges       0 mA +20 mA         Operational limit of current ranges       +/-0.2% +/-0.5%         Basic error limit current ranges       +/-0.2% +/-0.3%         Destruction limit against external applied voltage       max. 12V (30V for 1s)         Settling time for ohnic load       0.25 ms         Settling time for inductive load       1.5 ms         Resolution in bit       12         Conversion time       2 ms all channels         Substitute value can be applied       no	Reverse polarity protection of rated load voltage	yes
Voltage outputs  Min. load resistance (voltage range)  Max. capacitive load (current range)  Output voltage ranges  Operational limit of voltage ranges  Basic error limit voltage ranges  Current outputs  Max. in load resistance (current range)  Typ. open circuit voltage current output  Output current ranges  Operational limit of current range)  Output current ranges  Aux. in load resistance (current range)  Max. inductive load (current range)  Output current ranges  Oma +20 mA  +4 mA +20 mA  Operational limit of current ranges  Ayo.4% +/-0.5%  Basic error limit current ranges  H-0.2% +/-0.3%  Destruction limit against external applied voltage  max. 12V (30V for 1s)  Settling time for ohmic load  Settling time for capacitive load  1.5 ms  Resolution in bit  12  Conversion time  2 ms all channels  no	Current consumption from load voltage L+ (without load)	-
Min. load resistance (voltage range)       -         Max. capacitive load (current range)       -         Max. inductive load (current range)       -         Output voltage ranges       -         Operational limit of voltage ranges       -         Basic error limit voltage ranges       -         Destruction limit against external applied voltage       -         Current outputs       yes         Max. in load resistance (current range)       350 Ohm         Max. inductive load (current range)       10 mH         Typ. open circuit voltage current output       12 V         Output current ranges       -/-0.4% +/-0.5%         Basic error limit current ranges       +/-0.4% +/-0.3%         Destruction limit against external applied voltage       max. 12V (30V for 1s)         Settling time for ohmic load       0.25 ms         Settling time for capacitive load       -         Settling time for inductive load       1.5 ms         Resolution in bit       12         Conversion time       2 ms all channels         Substitute value can be applied       no	Voltage output short-circuit protection	-
Max. capacitive load (current range) - Max. inductive load (current range) - Current outputs  Max. inductive load (current range) - Current outputs  Max. inductive load (current range) - Current outputs  Max. in load resistance (current range) - Current output voltage current output  Max. in load resistance (current range) - Curput current ranges - Curput current current ranges - Curput current ranges - Curput current current current - Curput current current - Curput current - Current cupt current - Curput current - Cur	Voltage outputs	-
Max. inductive load (current range) Output voltage ranges - Operational limit of voltage ranges - Basic error limit voltage ranges - Current outputs Pax. in load resistance (current range) Max. in load resistance (current range) Max. inductive load (current range) Max. inductive load (current range)  Output current ranges Operational limit of current ranges  Operational limit of current ranges  A-0.4% +20 mA +4 mA +20 mA +4 mA +20 mA  Operational limit of current ranges  A-0.2% +/-0.3%  Destruction limit against external applied voltage max. 12V (30V for 1s)  Settling time for ohmic load  O.25 ms  Settling time for capacitive load  1.5 ms  Resolution in bit 12  Conversion time 2 ms all channels  Note that the set of the se	Min. load resistance (voltage range)	-
Output voltage ranges -  Operational limit of voltage ranges -  Basic error limit voltage ranges -  Destruction limit against external applied voltage -  Current outputs yes  Max. in load resistance (current range) 350 Ohm  Max. inductive load (current range) 10 mH  Typ. open circuit voltage current output 12 V  Output current ranges 0 0 mA +20 mA +4 mA +20 mA	Max. capacitive load (current range)	-
Operational limit of voltage ranges  Basic error limit voltage ranges  Current outputs  Max. in load resistance (current range)  Max. inductive load (current range)  Typ. open circuit voltage current output  12 V  Output current ranges  Operational limit of current ranges  Absic error limit current ranges  Current outputs  12 V  Output current ranges  Absic error limit current ranges  Absic error limit current ranges  Absic error limit against external applied voltage  Typ. open circuit voltage current output  Destruction limit against external applied voltage  Typ. open circuit voltage current output  Destruction limit against external applied voltage  Typ. open circuit voltage current output  Do mA +20 mA  +4 mA +20 mA  +4 mA +20 mA  +4 nA +20 mA  +4 nA +20 mA  -2 max. 12V (30V for 1s)  Settling time for ohnic load  Destruction limit against external applied voltage  Typ. open circuit voltage current output  Do mA +20 mA  +4 nA +20 mA  +4 n	Max. inductive load (current range)	-
Basic error limit voltage ranges  Destruction limit against external applied voltage  Current outputs  Max. in load resistance (current range)  Max. inductive load (current range)  10 mH  Typ. open circuit voltage current output  12 V  Output current ranges  0 mA +20 mA +4 mA +20 mA  44 mA +20 mA  Operational limit of current ranges  +/-0.4% +/-0.5%  Basic error limit current ranges  +/-0.2% +/-0.3%  Destruction limit against external applied voltage  max. 12V (30V for 1s)  Settling time for ohmic load  0.25 ms  Settling time for capacitive load  5 ettling time for inductive load  1.5 ms  Resolution in bit  12  Conversion time  2 ms all channels  Substitute value can be applied	Output voltage ranges	-
Destruction limit against external applied voltage  Current outputs  Max. in load resistance (current range)  Max. inductive load (current range)  10 mH  Typ. open circuit voltage current output  12 V  Output current ranges  0 mA +20 mA	Operational limit of voltage ranges	-
Current outputs yes  Max. in load resistance (current range) 350 Ohm  Max. inductive load (current range) 10 mH  Typ. open circuit voltage current output 12 V  Output current ranges 0 0 mA +20 mA +4 mA +20 mA  Operational limit of current ranges +/-0.4% +/-0.5%  Basic error limit current ranges +/-0.2% +/-0.3%  Destruction limit against external applied voltage max. 12V (30V for 1s)  Settling time for ohmic load 0.25 ms  Settling time for capacitive load 1.5 ms  Resolution in bit 12  Conversion time 2 ms all channels  Substitute value can be applied note that the same and the same	Basic error limit voltage ranges	-
Max. in load resistance (current range)  Max. inductive load (current range)  Typ. open circuit voltage current output  12 V  Output current ranges  Om A +20 mA +4 mA +20 mA +4 mA +20 mA  House error limit of current ranges  House error limit current ranges  House error limit against external applied voltage  Settling time for ohmic load  Settling time for capacitive load  Settling time for inductive load  1.5 ms  Resolution in bit  12  Conversion time  2 ms all channels  Substitute value can be applied	Destruction limit against external applied voltage	-
Max. inductive load (current range)  Typ. open circuit voltage current output  12 V  Output current ranges  Operational limit of current ranges  +/-0.4% +/-0.5%  Basic error limit current ranges  +/-0.2% +/-0.3%  Destruction limit against external applied voltage  max. 12V (30V for 1s)  Settling time for ohmic load  Cettling time for capacitive load  Settling time for inductive load  1.5 ms  Resolution in bit  12  Conversion time  2 ms all channels  Substitute value can be applied	Current outputs	yes
Typ. open circuit voltage current output  12 V  Output current ranges  0 mA +20 mA +4 mA +20 mA +4 mA +20 mA  12 V  Operational limit of current ranges  +/-0.4% +/-0.5%  Basic error limit current ranges  +/-0.2% +/-0.3%  Destruction limit against external applied voltage  max. 12V (30V for 1s)  Settling time for ohmic load  0.25 ms  Settling time for capacitive load  - Settling time for inductive load  1.5 ms  Resolution in bit  12  Conversion time  2 ms all channels  Substitute value can be applied	Max. in load resistance (current range)	350 Ohm
Output current ranges  O mA +20 mA +4 mA +20 mA  Operational limit of current ranges  +/-0.4% +/-0.5%  Basic error limit current ranges  +/-0.2% +/-0.3%  Destruction limit against external applied voltage  max. 12V (30V for 1s)  Settling time for ohmic load  0.25 ms  Settling time for capacitive load  - Settling time for inductive load  1.5 ms  Resolution in bit  12  Conversion time  2 ms all channels  Substitute value can be applied  no	Max. inductive load (current range)	10 mH
H4 mA +20 mA  Operational limit of current ranges +/-0.4% +/-0.5%  Basic error limit current ranges +/-0.2% +/-0.3%  Destruction limit against external applied voltage max. 12V (30V for 1s)  Settling time for ohmic load 0.25 ms  Settling time for capacitive load -  Settling time for inductive load 1.5 ms  Resolution in bit 12  Conversion time 2 ms all channels  Substitute value can be applied no	Typ. open circuit voltage current output	12 V
Basic error limit current ranges +/-0.2% +/-0.3%  Destruction limit against external applied voltage max. 12V (30V for 1s)  Settling time for ohmic load 0.25 ms  Settling time for capacitive load -  Settling time for inductive load 1.5 ms  Resolution in bit 12  Conversion time 2 ms all channels  Substitute value can be applied no	Output current ranges	
Destruction limit against external applied voltage max. 12V (30V for 1s)  Settling time for ohmic load 0.25 ms  Settling time for capacitive load -  Settling time for inductive load 1.5 ms  Resolution in bit 12  Conversion time 2 ms all channels  Substitute value can be applied no	Operational limit of current ranges	+/-0.4% +/-0.5%
Settling time for ohmic load 0.25 ms  Settling time for capacitive load -  Settling time for inductive load 1.5 ms  Resolution in bit 12  Conversion time 2 ms all channels  Substitute value can be applied no	Basic error limit current ranges	+/-0.2% +/-0.3%
Settling time for capacitive load - Settling time for inductive load 1.5 ms Resolution in bit 12 Conversion time 2 ms all channels Substitute value can be applied no	Destruction limit against external applied voltage	max. 12V (30V for 1s)
Settling time for inductive load 1.5 ms  Resolution in bit 12  Conversion time 2 ms all channels  Substitute value can be applied no	Settling time for ohmic load	0.25 ms
Resolution in bit 12 Conversion time 2 ms all channels Substitute value can be applied no	Settling time for capacitive load	-
Conversion time 2 ms all channels  Substitute value can be applied no	Settling time for inductive load	1.5 ms
Substitute value can be applied no	Resolution in bit	12
	Conversion time	2 ms all channels
Output data size 8 Byte	Substitute value can be applied	no
	Output data size	8 Byte



## Status information, alarms, diagnostics

Status information, alarms, diagnostics	
Status display	yes
Interrupts	no
Process alarm	no
Diagnostic interrupt	no
Diagnostic functions	yes
Diagnostics information read-out	possible
Supply voltage display	green LED
Group 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	yes
Max. potential difference between circuits	-
Max. potential difference between inputs (Ucm)	-
Max. potential difference between Mana 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)	-
Max. potential difference between Mintern and outputs	-
Insulation tested with	DC 500 V
Datasizes	
Input bytes	0
Output bytes	8
Parameter bytes	10
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
Weight	60 g
Environmental conditions	
Operating temperature	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C
Certifications	
UL certification	yes
KC certification	yes