

Data sheet SM 022 - Digital output (022-1BD00)

Technical data

Type SM 022 - Digital output Module ID 0104 AFA0 General Information Note	Order no.	022-1BD00
General information Note - Features 4x DO DC 24 V 0.5 A DC 24 V 0.5 A DC 24 V 0.5 A Current consumption/power loss Current consumption from backplane bus 75 mA Power loss 0.5 W Technical data digital outputs Number of outputs 4 Cable length, shielded 600 m Cable length, unshielded 600 m Rated load voltage DC 20.428.8 V Current consumption from load voltage L+ (without load) 10 mA Total current per group, horizontal configuration, 60°C 2 A Total current per group, horizontal configuration, 60°C 2 A Total current per group, vertical configuration 2 A Output current at signel "1" rated value 0.5 A Signal logic output Sourcing output Output delay of "1" to "0" 175 µs Minimum load current - Lamp load 10 W Parallel switching of outputs for increased power not possible Actuation of digital input yes Switching f	Туре	SM 022 - Digital output
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Number of outputs 4 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage DC 20.428.8 V Current consumption from load voltage L+ (without load) 10 mA Total current per group, horizontal configuration, 40°C 2 A Total current per group, horizontal configuration 2 A Output current at signal "1", rated value 0.5 A Signal logic output Sourcing output Sourcing output Output delay of "0" to "1" 30 µs Output delay of "0" to "1" 30 µs Output delay of "0" to "1" 30 µs Parallel switching of outputs for redundant control of a load not possible Parallel switching of outputs for increased power not possible Actuation of digital input yes Switching frequency with inductive load max. 10 Hz Switching frequency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of outputs Switching capacity of contacts - Output dat size 4 Bit Status display green LED per channel Interrupts no	Power loss	0.5 W
Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage DC 20.428.8 V Current consumption from load voltage L+ (without load) 10 mA Total current per group, horizontal configuration, 40°C 2 A Total current per group, horizontal configuration 2 A Output current as signal "1", rated value 0.5 A Signal logic output Sourcing output Output delay of "0" to "1" 30 µs Output delay of "1" to "0" 175 µs Minimum load current - Lamp load 10 W Parallel switching of outputs for redundant control of a load not possible Parallel switching of outputs for increased power not possible Switching frequency with resistive load max. 1000 Hz Switching frequency with inductive load max. 0.5 Hz Switching frequency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of outputs Switching capacity of contacts - Output das size 4 Bit Status display green LED per channel Interrupts no	Technical data digital outputs	
Cable length, unshielded 600 m Rated load voltage DC 20.428.8 V Current consumption from load voltage L+ (without load) 10 mA Total current per group, horizontal configuration, 40°C 2 A Total current per group, horizontal configuration, 60°C 2 A Total current per group, vertical configuration 2 A Output current at signal "1", rated value 0.5 A Signal logic output Sourcing output Output delay of "0" to "1" 30 µs Output delay of "0" to "1" 175 µs Minimum load current - Lamp load 10 W Parallel switching of outputs for redundant control of a load not possible Parallel switching of outputs for increased power not possible Actuation of digital input yes Switching frequency with resistive load max. 1000 Hz Switching frequency with inductive load max. 0.5 Hz Switching frequency with inductive load max. 0.1 Hz Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of outputs - Switching capacity of contacts - Output data size 4 Bit Status display green LED per channel Interrupts no	Number of outputs	4
Rated load voltage DC 20.428.8 V Current consumption from load voltage L+ (without load) 10 mA Total current per group, horizontal configuration, 40°C 2 A Total current per group, vertical configuration, 60°C 2 A Total current per group, vertical configuration 2 A Output current at signal "1", rated value 0.5 A Signal logic output Sourcing output Output delay of "0" to "1" 30 µs Output delay of "3" to "0" 175 µs Minimum load current - Lamp load 10 W Parallel switching of outputs for redundant control of a load not possible Parallel switching of outputs for increased power not possible Actuation of digital input yes Switching frequency with resistive load max. 100 Hz Switching frequency with inductive load max. 0.5 Hz Switching frequency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of outputs - Switching capacity of contacts - Output data size 4 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Cable length, shielded	1000 m
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Total current per group, horizontal configuration, 60°C 2 A Total current per group, vertical configuration 2 A Output current at signal "1", rated value 0.5 A Signal logic output Sourcing output Output delay of "0" to "1" 30 µs Output delay of "1" to "0" 175 µs Minimum load current - Lamp load 10 W Parallel switching of outputs for redundant control of a load not possible Parallel switching of outputs for increased power not possible Actuation of digital input yes Switching frequency with resistive load max. 1000 Hz Switching frequency with inductive load max. 0.5 Hz Switching frequency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 4 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Current consumption from load voltage L+ (without load)	10 mA
Total current per group, vertical configuration 2 A Output current at signal "1", rated value 0.5 A Signal logic output Sourcing output Output delay of "0" to "1" 30 µs Output delay of "0" to "1" 175 µs Minimum load current - Lamp load 10 W Parallel switching of outputs for redundant control of a load not possible Parallel switching of outputs for increased power not possible Actuation of digital input yes Switching frequency with resistive load max. 1000 Hz Switching frequency with inductive load max. 0.5 Hz Switching frequency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 4 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Total current per group, horizontal configuration, 40°C	2 A
Output current at signal "1", rated value 0.5 A Signal logic output Sourcing output Output delay of "0" to "1" 30 µs Output delay of "1" to "0" 175 µs Minimum load current - Lamp load 10 W Parallel switching of outputs for redundant control of a load not possible Parallel switching of outputs for increased power not possible Actuation of digital input yes Switching frequency with resistive load max. 1000 Hz Switching frequency with inductive load max. 0.5 Hz Switching frequency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 4 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Total current per group, horizontal configuration, 60°C	2 A
Signal logic output Output delay of "0" to "1" Output delay of "1" to "0" 175 µs Minimum load current Lamp load Parallel switching of outputs for redundant control of a load not possible Parallel switching of outputs for increased power Actuation of digital input Switching frequency with resistive load max. 1000 Hz Switching frequency with inductive load max. 0.5 Hz Switching frequency on lamp load Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 4 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm	Total current per group, vertical configuration	2 A
Output delay of "0" to "1" Output delay of "1" to "0" Minimum load current Lamp load Parallel switching of outputs for redundant control of a load Parallel switching of outputs for increased power Actuation of digital input Switching frequency with resistive load Switching frequency with inductive load Switching frequency on lamp load Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs Switching capacity of contacts Cutput data size 4 Bit Status display Green LED per channel Interrupts no Process alarm 10 W 1	Output current at signal "1", rated value	0.5 A
Output delay of "1" to "0" Minimum load current Lamp load Parallel switching of outputs for redundant control of a load Parallel switching of outputs for increased power Actuation of digital input Switching frequency with resistive load Switching frequency with inductive load Max. 1000 Hz Switching frequency on lamp load Max. 10 Hz Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs Switching capacity of contacts - Output data size 4 Bit Status information, alarms, diagnostics Status display Green LED per channel Interrupts no Process alarm	Signal logic output	Sourcing output
Minimum load current Lamp load Parallel switching of outputs for redundant control of a load not possible Parallel switching of outputs for increased power Actuation of digital input yes Switching frequency with resistive load max. 1000 Hz Switching frequency with inductive load max. 0.5 Hz Switching frequency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts Output data size 4 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no	Output delay of "0" to "1"	30 μs
Lamp load 10 W Parallel switching of outputs for redundant control of a load not possible Parallel switching of outputs for increased power not possible Actuation of digital input yes Switching frequency with resistive load max. 1000 Hz Switching frequency with inductive load max. 0.5 Hz Switching frequency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 4 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Output delay of "1" to "0"	175 μs
Parallel switching of outputs for redundant control of a load not possible Parallel switching of outputs for increased power not possible Actuation of digital input yes Switching frequency with resistive load max. 1000 Hz Switching frequency with inductive load max. 0.5 Hz Switching frequency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 4 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Minimum load current	-
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Actuation of digital input Switching frequency with resistive load max. 1000 Hz Switching frequency with inductive load max. 0.5 Hz Switching frequency on lamp load Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts Output data size 4 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no	Parallel switching of outputs for redundant control of a load	not possible
Switching frequency with resistive load max. 1000 Hz Switching frequency with inductive load max. 0.5 Hz Switching frequency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 4 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no	Parallel switching of outputs for increased power	not possible
Switching frequency with inductive load max. 0.5 Hz Switching frequency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 4 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no	Actuation of digital input	yes
Switching frequency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 4 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no	Switching frequency with resistive load	max. 1000 Hz
Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 4 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no	Switching frequency with inductive load	max. 0.5 Hz
Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 4 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no	Switching frequency on lamp load	max. 10 Hz
Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 4 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no	Internal limitation of inductive shut-off voltage	L+ (-45 V)
Number of operating cycle of relay outputs Switching capacity of contacts Output data size 4 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no	Short-circuit protection of output	yes, electronic
Switching capacity of contacts - Output data size 4 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no	Trigger level	1 A
Output data size 4 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no	Number of operating cycle of relay outputs	-
Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no	Switching capacity of contacts	-
Status display green LED per channel Interrupts no Process alarm no	Output data size	4 Bit
Interrupts no no Process alarm no	Status information, alarms, diagnostics	
Process alarm no	Status display	green LED per channel
	Interrupts	no
Diagnostic interrupt no	Process alarm	no
	Diagnostic interrupt	no



Diagnostic functions	no
Diagnostics information read-out	none
Supply voltage display	green LED
Group error display	red LED
Channel error display	none
Isolation	
Between channels	-
Between channels of groups to	-
Between channels and backplane bus	yes
Insulation tested with	DC 500 V
PWM data	
PWM channels	
PWM time basis	
Period length	
Minimum pulse width	•
Type of output	•
Safety	
Safety protocol	-
Safety requirements	-
Secure user address	-
Watchdog	-
Two channels	
Test pulse length	-
Circuit monitoring	
Datasizes	
Input bytes	0
Output bytes	1
Parameter bytes	0
Diagnostic bytes	0
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	57 g
Weight including accessories	57 g
Gross weight	71 g
Environmental conditions	
Operating temperature	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C
Certifications	in the second control of the second control
UL certification	yes
KC certification	yes
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