

## Data sheet

SM 322 (322-1BH01)

## Technical data

Type SM 322  General Information  Note	Order no.	322-1BH01
Note   -   Features   16x DO, in groups of 8 1 1 A per group up to 4 A) For 20 pole front connector	Туре	SM 322
Features 16x DO, in groups of 8 1 1 A (per group up to 4 A) For 2th pole front connector For 2th pole f	General information	
1 A (per group up to 4 A)	Note	-
Current consumption/power loss Current consumption from backplane bus 50 mA Power loss 4W  Technical data digital outputs  Number of outputs 16 Cable length, shielded 1000 m  Cable length, unshielded 600 m  Rated load voltage DC 24 V Permitted range - Current consumption from power section supply (without load) 85 mA Total current per group, horizontal configuration, 40°C 4 A Total current per group, horizontal configuration, 60°C 4 A Total current per group, vertical configuration 4 A Output current at signal "1", rated value 1 A Signal logic output Sourcing output Output delay of "0" to "1" 150 µs Output delay of "1" to "0" 100 µs Minimum load current Lamp load 5 W Parallel switching of outputs for redundant control of a load possible (only outputs group) Parallel switching frequency with resistive load max. 1000 Hz Switching frequency with resistive load max. 0.5 Hz Switching frequency on lamp load max. 0.5 Hz Switching frequency on lamp load max. 0.5 Hz Switching frequency on lamp load max. 0.10 Hz Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of output Trigger level 1.5 A Number of operating cycle of relay outputs Switching capacity of contacts - Output data size 2 Byte Status display green LED per channel Interrupts	Features	1 A (per group up to 4 A)
Current consumption from backplane bus 50 mA  Power loss 4 W  Technical data digital outputs  Number of outputs 16 Cable length, unshielded 600 m  Rated load voltage DC 24 V  Permitted range - Current consumption from power section supply (without load) 85 mA  Total current per group, horizontal configuration, 40°C 4 A  Total current per group, horizontal configuration, 60°C 4 A  Total current per group, horizontal configuration 60°C 4 A  Output current at signal "1", rated value 1 A  Signal logic output Sourcing output  Output delay of "0" to "1" 150 µs  Uniform load current  Lamp load 5 W  Parallel switching of outputs for redundant control of a load possible (only outputs group)  Parallel switching of outputs for increased power not possible  Switching frequency with inductive load max. 10 Hz  Switching frequency with inductive load max. 0.5 Hz  Switching frequency on lamp load max. 0.5 Hz  Switching requency on lamp load max. 0.5 Hz  Switching frequency on lamp load max. 0.5 Hz  Switching prequency 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 1.5 A  Number of operating cycle of relay outputs  Status display green LED per channel  Interrupts	SPEED-Bus	-
Power loss 4 W  Technical data digital outputs  Number of outputs 16 Cable length, shielded 1000 m  Rated load voltage DC 24 V  Permitted range - Current consumption from power section supply (without load) 85 mA  Total current per group, horizontal configuration, 40°C 4 A  Total current per group, horizontal configuration, 60°C 4 A  Total current per group, vertical configuration 4 A  Output current at signal "1", rated value 1 A  Signal logic output Sourcing output  Output delay of "0" to "1" 150 µs  Output delay of "0" to "0" 100 µs  Minimum load current - Lamp load 5 W  Parallel switching of outputs for redundant control of a load parallel switching of outputs for increased power not possible  Actuation of digital input yes  Switching frequency with inductive load max. 100 Hz  Switching frequency with inductive load max. 10 Hz  Internal limitation of inductive shur-off voltage L+ (-45 V)  Short-circuit protection of outputs  Status display green LED per channel  Interrupts no desired max. 1000 per channel  Interrupts  Technical data digital outputs  16  1000 m  16  16  1000 m  16  16  1000 m  16  16  17  1000 m  16  16  17  17  18  18  18  18  18  18  19  19  1000 m	Current consumption/power loss	
Number of outputs  Number of outputs  16 Cable length, shielded  1000 m  Rated load voltage  DC 24 V  Permitted range  Current consumption from power section supply (without load)  Total current per group, horizontal configuration, 40°C  4 A  Total current per group, horizontal configuration, 60°C  4 A  Total current per group, vertical configuration  4 A  Output current at signal "1", rated value  1 A  Signal logic output  Sourcing output  Output delay of "0" to "1"  150 µS  Output delay of "1" to "0"  100 µs  Minimum load current  -  Lamp load  5 W  Parallel switching of outputs for redundant control of a load  possible (only outputs group)  Switching frequency with inductive load  max. 100 Hz  Switching frequency with inductive load  max. 10 Hz  Internal limitation of inductive shut-off voltage  L+ (-45 V)  Short-circuit protection of outputs  -  Switching rapacity of celear outputs  -  Switching rapacity of celear outputs  -  Switching rapacity of celear outputs  -  Switching frequency on lamp load  max. 10 Hz  Internal limitation of inductive shut-off voltage  L+ (-45 V)  Short-circuit protection of outputs  -  Switching rapacity of contacts  -  Output data size  2 Byte  Status display  green LED per channel  Interrupts	Current consumption from backplane bus	50 mA
Number of outputs 16 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage DC 24 V Permitted range - Current consumption from power section supply (without load) 85 mA Total current per group, horizontal configuration, 40°C 4 A Total current per group, horizontal configuration, 60°C 4 A Total current per group, vertical configuration 4 A Output current at signal "1", rated value 1 A Signal logic output Sourcing output Output delay of "0" to "1" 150 µs Output delay of "1" to "0" 100 µs Minimum load current - Lamp load 5 W Parallel switching of outputs for redundant control of a load possible (only outputs group) Parallel switching of outputs for increased power not possible Actuation of digital input yes Switching frequency with inductive load max. 100 Hz Switching frequency with inductive 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 2 Byte  Status information, alarms, diagnostics Status display green LED per channel Interrupts	Power loss	4 W
Cable length, shielded     1000 m       Cable length, unshielded     600 m       Rated load voltage     DC 24 V       Permitted range     -       Current consumption from power section supply (without load)     85 mA       Total current per group, horizontal configuration, 40°C     4 A       Total current per group, horizontal configuration, 60°C     4 A       Output current at signal "1", rated value     1 A       Signal logic output     Sourcing output       Output delay of "0" to "1"     150 μs       Output delay of "1" to "0"     100 μs       Minimum load current     -       Lamp load     5 W       Parallel switching of outputs for redundant control of a load     possible (only outputs group)       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. 100 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     1.5 A       Number of operating cycle of relay outputs     -       Switching capacity of contacts     -       Output data size <td>Technical data digital outputs</td> <td></td>	Technical data digital outputs	
Cable length, unshielded 600 m Rated load voltage DC 24 V  Permitted range - Current consumption from power section supply (without load) 85 mA Total current per group, horizontal configuration, 40°C 4 A Total current per group, horizontal configuration, 60°C 4 A Total current per group, vertical configuration 4 A Output current at signal "1", rated value 1 A Signal logic output Sourcing output Output delay of "0" to "1* 150 µs Output delay of "0" to "0" 100 µs Minimum load current - Lamp load 5 W Parallel switching of outputs for redundant control of a load possible (only outputs group) 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. 0.5 Hz Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of output Trigger level 1.5 A Number of operating cycle of relay outputs Status display green LED per channel Interrupts no	Number of outputs	16
Rated load voltage DC 24 V  Permitted range - Current consumption from power section supply (without load) 85 mA  Total current per group, horizontal configuration, 40°C 4 A  Total current per group, horizontal configuration, 60°C 4 A  Total current per group, vertical configuration 4 A  Output current at signal "1", rated value 1 A  Signal logic output Sourcing output  Output delay of "0" to "1" 150 µs  Output delay of "1" to "0" 100 µs  Minimum load current - Lamp load 5 W  Parallel switching of outputs for redundant control of a load possible (only outputs group)  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 output  Trigger level 1.5 A  Number of operating cycle of relay outputs  Switching capacity of contacts -  Output data size 2 Byte  Status display green LED per channel  Interrupts not power and a power of the processor of the process	Cable length, shielded	1000 m
Permitted range - Current consumption from power section supply (without load) 85 mA  Total current per group, horizontal configuration, 40°C 4 A  Total current per group, horizontal configuration, 60°C 4 A  Total current per group, vertical configuration 4 A  Output current at signal "1", rated value 1 A  Signal logic output Sourcing output  Output delay of "0" to "1" 150 µs  Output delay of "1" to "0" 100 µs  Minimum load current  Lamp load 5 W  Parallel switching of outputs for redundant control of a load possible (only outputs group)  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. 10 Hz  Internal limitation of inductive shut-off voltage L+ (-45 V)  Short-circuit protection of output yes, electronic  Trigger level 1.5 A  Number of operating cycle of relay outputs  Switching capacity of contacts - Cutput data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel  Interrupts	Cable length, unshielded	600 m
Current consumption from power section supply (without load)  Total current per group, horizontal configuration, 40°C  4 A  Total current per group, horizontal configuration, 60°C  4 A  Total current per group, vertical configuration  4 A  Output current at signal "1", rated value  1 A  Signal logic output  Sourcing output  Output delay of "0" to "1"  150 µs  Output delay of "1" to "0"  100 µs  Minimum load current  -  Lamp load  5 W  Parallel switching of outputs for redundant control of a load  possible (only outputs group)  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. 10 Hz  Internal limitation of inductive shut-off voltage  L+ (-45 V)  Short-circuit protection of outputs  Trigger level  1.5 A  Number of operating cycle of relay outputs  Switching capacity of contacts  -  Output data size  2 Byte  Status display  Green LED per channel  Interrupts	Rated load voltage	DC 24 V
Total current per group, horizontal configuration, 40°C 4 A  Total current per group, horizontal configuration, 60°C 4 A  Total current per group, vertical configuration 4 A  Output current at signal "1", rated value 1 A  Signal logic output Sourcing output  Output delay of "0" to "1" 150 µs  Output delay of "1" to "0" 100 µs  Minimum load current -  Lamp load 5 W  Parallel switching of outputs for redundant control of a load possible (only outputs group)  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 1.5 A  Number of operating cycle of relay outputs  Switching capacity of contacts -  Output data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel  Interrupts	Permitted range	
Total current per group, horizontal configuration, 60°C 4 A  Total current per group, vertical configuration 4 A  Output current at signal "1", rated value 1 A  Signal logic output Sourcing output  Output delay of "0" to "1" 150 µs  Output delay of "1" to "0" 100 µs  Minimum load current -  Lamp load 5 W  Parallel switching of outputs for redundant control of a load possible (only outputs group)  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 1.5 A  Number of operating cycle of relay outputs -  Switching capacity of contacts -  Output data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel  Interrupts	Current consumption from power section supply (without load)	85 mA
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Output current at signal *1", rated value 1 A  Signal logic output Sourcing output  Output delay of *0" to *1" 150 µs  Output delay of *1" to *0" 100 µs  Minimum load current -  Lamp load 5 W  Parallel switching of outputs for redundant control of a load possible (only outputs group)  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 1.5 A  Number of operating cycle of relay outputs -  Switching capacity of contacts -  Output data size 2 Byte  Status display green LED per channel  Interrupts no	Total current per group, horizontal configuration, 60°C	4 A
Signal logic output  Output delay of "0" to "1"  Output delay of "1" to "0"  100 µs  Minimum load current  Lamp load  Farallel 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  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  1.5 A  Number of operating cycle of relay outputs  -  Switching capacity of contacts  -  Output data size  2 Byte  Status information, alarms, diagnostics  Status display  green LED per channel  Interrupts	Total current per group, vertical configuration	4 A
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Lamp load 5 W  Parallel switching of outputs for redundant control of a load possible (only outputs group)  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 1.5 A  Number of operating cycle of relay outputs -  Switching capacity of contacts -  Output data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel  Interrupts no	Output delay of "1" to "0"	100 µs
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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 1.5 A  Number of operating cycle of relay outputs -  Switching capacity of contacts -  Output data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel  Interrupts no	Lamp load	5 W
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  max. 10 Hz  Internal limitation of inductive shut-off voltage  L+ (-45 V)  Short-circuit protection of output  yes, electronic  Trigger level  1.5 A  Number of operating cycle of relay outputs  Switching capacity of contacts  -  Output data size  2 Byte  Status information, alarms, diagnostics  Status display  green LED per channel  Interrupts  no	Parallel switching of outputs for redundant control of a load	possible (only outputs group)
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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 1.5 A  Number of operating cycle of relay outputs -  Switching capacity of contacts -  Output data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel  Interrupts 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 1.5 A  Number of operating cycle of relay outputs -  Switching capacity of contacts -  Output data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel  Interrupts 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  1.5 A  Number of operating cycle of relay outputs  Switching capacity of contacts  -  Output data size  2 Byte  Status information, alarms, diagnostics  Status display  green LED per channel  Interrupts  no	Switching frequency with inductive load	max. 0.5 Hz
Short-circuit protection of output yes, electronic  Trigger level 1.5 A  Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts no	Switching frequency on lamp load	max. 10 Hz
Trigger level 1.5 A  Number of operating cycle of relay outputs -  Switching capacity of contacts -  Output data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel  Interrupts 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 2 Byte  Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Short-circuit protection of output	yes, electronic
Switching capacity of contacts  Output data size  2 Byte  Status information, alarms, diagnostics  Status display  green LED per channel Interrupts  no	Trigger level	1.5 A
Output data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts no	Number of operating cycle of relay outputs	-
Status information, alarms, diagnostics       Status display     green LED per channel       Interrupts     no	Switching capacity of contacts	-
Status display green LED per channel Interrupts no	Output data size	2 Byte
Interrupts no	Status information, alarms, diagnostics	
	Status display	green LED per channel
Process alarm no	Interrupts	no
	Process alarm	no



Diagnostic interrupt	no
Diagnostic functions	no
Diagnostics information read-out	none
Supply voltage display	green LED per group
Group error display	red SF LED
Channel error display	none
Isolation	
Between channels	yes
Between channels of groups to	8
Between channels and backplane bus	yes
Insulation tested with	DC 500 V
Datasizes	
Input bytes	0
Output bytes	2
Parameter bytes	0
Diagnostic bytes	0
Housing	
Material	PPE
Mounting	Rail System 300
Mechanical data	
Dimensions (WxHxD)	40 mm x 125 mm x 120 mm
Net weight	185 g
Weight including accessories	195 g
Gross weight	225 g
Environmental conditions	
Operating temperature	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C
Certifications	
UL certification	yes
KC certification	yes