

Data sheet

SM 222 (222-1BH50)

Technical data

Features Features 16x DO DC 24 V 0.5 A NPN For conversion module UB4x Current consumption/power loss Current consumption from backplane bus 120 mA Power loss 3.5 W Technical data digital outputs Number of outputs 16 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) Total current per group, horizontal configuration, 40°C 8 A	Order no.	222-1BH50
Note - Features 16x DO DC 24 V 0.5 A Note	Туре	SM 222
Features 16x DO DC 24 V OD C 24 V OD	General information	
Current consumption/power loss Current consumption from backplane bus 120 mA Power loss 3.5 W Technical data digital outputs Number of outputs 16 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 8 A Total current per group, horizontal configuration, 60°C 8 A Total current per group, vertical configuration 60°C 8 A Total current at signal "1", rated value 0.5 A Signal logic output Sinking output 100 µs Output delay of "0" to "1" 100 µs Output delay of "0" to "1" 100 µs Minimum load current Lamp load 5 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. 1000 Hz Switching frequency on lamp load max. 10.5 Hz Short-circuit protection of output species of relay outputs - 2 Byte Status display none Interrupts none Process alarm none	Note	
Current consumption from backplane bus 3.5 W Technical data digital outputs Number of outputs 16 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 8 A Total current per group, horizontal configuration, 60°C 8 A Cutput current per group, vertical configuration 8 A Cutput current per group, vertical configuration 8 A Cutput current per group, vertical configuration 8 A Signal logic output Sinking output Output delay of "0" to "1" 100 µs Cutput delay of "1" to "0" 150 µs Minimum load current 1 - Lamp load 5 W Parallel switching of outputs for increased power not possible 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 445 V Short-circuit protection of output yes, electronic Trigger level 1.5 A Number of operating cycle of relay outputs Status display none Interrupts no	Features	DC 24 V 0.5 A NPN
Power loss 3.5 W Technical data digital outputs Number of outputs 16 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage	Current consumption/power loss	
Number of outputs Cable length, shielded Cable length, unshielded 600 m Rated load voltage Current consumption from load voltage L+ (without load) Total current per group, horizontal configuration, 40°C 8 A Total current per group, horizontal configuration, 60°C 8 A Total current per group, vertical configuration 8 A Output current at signal "1", rated value 0.5 A Signal logic output Output delay of "0" to "1" 100 µs Output delay of "0" to "1" 100 µs Minimum load current - Lamp load 5 W Parallel switching of outputs for increased power Actuation of digital input yes Switching frequency with inductive 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 +45 V Short-circuit protection of output Trigger level 1.5 A Number of operating cycle of relay outputs Status information, alarms, diagnostics Status display Interrupts no Process alarm no	Current consumption from backplane bus	120 mA
Number of outputs 16 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 8 A Total current per group, horizontal configuration, 60°C 8 A Cutput current at signal *1*, rated value 0.5 A Signal logic output Sinking output Sinking output Output delay of *0* to *1* 100 µs Cutput delay of *0* to *1* 100 µs Cutput delay of *1* to *0* 150 µs Minimum load current Lamp load 5 W 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. 0.5 Hz Switching frequency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage +45 V Short-circuit protection of outputs Switching capacity of contacts - C Output data size 2 Byte Status display none Process alarm no	Power loss	3.5 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 8 A Total current per group, horizontal configuration, 60°C 8 A Cutput current per group, vertical configuration 8 A Cutput current at signal "1", rated value 0.5 A Signal logic output Sinking output Output delay of "0" to "1" 100 µs Output delay of "0" to "1" 100 µs Output delay of "1" to "0" 150 µs Minimum load current - Lamp load 5 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 +45 V Short-civit protection of output \$ - Switching operating cycle of relay outputs - Switching capacity of contacts - Output data size 2 Byte Status display none 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 8 A Total current per group, vertical configuration 60°C 8 A Total current per group, vertical configuration 8 A Output current at signal "1", rated value 0.5 A Signal logic output Sinking output Output delay of "0" to "1" 100 µs Output delay of "1" to "0" 150 µs Minimum load current - Lamp load 5 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 vith inductive load max. 1000 Hz Switching frequency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage +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 none Process alarm no	Number of outputs	16
Rated load voltage Current consumption from load voltage L+ (without load) Total current per group, horizontal configuration, 40°C 8 A Total current per group, horizontal configuration, 60°C 8 A Total current per group, vertical configuration 8 A Output current at signal *1°, rated value 0.5 A Signal logic output Cutput delay of *10° to *1" 100 µs Output delay of *10° to *1" 100 µs Output delay of *10° to *1" 150 µs Minimum load current - Lamp load 5 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 on lamp load max. 0.5 Hz Switching frequency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage +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 none Interrupts no Process alarm no	Cable length, shielded	1000 m
Current consumption from load voltage L+ (without load) Total current per group, horizontal configuration, 40°C 8 A Total current per group, horizontal configuration, 60°C 8 A Total current per group, vertical configuration 8 A Output current at signal "1", rated value 0.5 A Signal logic output Sinking output Output delay of "0" to "1" 100 µs Output delay of "1" to "0" 150 µs Minimum load current Lamp load 5 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 Internal limitation of inductive shut-off voltage +45 V Short-circuit protection of output yes, electronic Trigger level 1.5 A Number of operating cycle of relay outputs	Cable length, unshielded	600 m
Total current per group, horizontal configuration, 40°C 8 A Total current per group, horizontal configuration, 60°C 8 A Total current per group, vertical configuration 8 A Output current at signal "1", rated value 0.5 A Signal logic output Sinking output Output delay of "0" to "1" 100 µs Output delay of "1" to "0" 150 µs Minimum load current - Lamp load 5 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 +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 none Interrupts no	Rated load voltage	DC 20.428.8 V
Total current per group, horizontal configuration, 60°C 8 A Total current per group, vertical configuration 8 A Output current at signal "1", rated value 0.5 A Signal logic output Sinking output 0.0 μs Output delay of "0" to "1" to "0" 150 μs Minimum load current - Lamp load 5 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 +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 none Incernal linterupts no	Current consumption from load voltage L+ (without load)	10 mA
Total current per group, vertical configuration 8 A Output current at signal "1", rated value 0.5 A Signal logic output Sinking output Output delay of "0" to "1" 100 µs Output delay of "1" to "0" 150 µs Minimum load current - Lamp load 5 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. 0.10 Hz Internal limitation of inductive shut-off voltage +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 none Process alarm no	Total current per group, horizontal configuration, 40°C	8 A
Output current at signal "1", rated value 0.5 A Signal logic output Output delay of "0" to "1" Output delay of "1" to "0" 150 µs Minimum load current - Lamp load 5 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 +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 none Process alarm 100 µs Sinking output 100 µs No 150 µs No	Total current per group, horizontal configuration, 60°C	8 A
Signal logic output Output delay of "0" to "1" 100 µs Output delay of "1" to "0" 150 µs Minimum load current - Lamp load 5 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 +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 none Process alarm no	Total current per group, vertical configuration	8 A
Output delay of "0" to "1" Output delay of "1" to "0" 150 µs Minimum load current - Lamp load 5 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 +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 none Process alarm 150 µs 150	Output current at signal "1", rated value	0.5 A
Output delay of "1" to "0" Minimum load current	Signal logic output	Sinking output
Minimum load current Lamp load 5 W 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 +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 none Process alarm no	Output delay of "0" to "1"	100 μs
Lamp load 5 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 +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 none Interrupts no	Output delay of "1" to "0"	150 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 +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 none Interrupts no	Minimum load current	-
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 +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 none 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 +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 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 +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 none Interrupts 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 +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 none 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 +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 none Interrupts no Process alarm no	Switching frequency with resistive load	max. 1000 Hz
Internal limitation of inductive shut-off voltage +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 none Interrupts no Process alarm 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 none Interrupts no Process alarm 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 none Interrupts no Process alarm no	Internal limitation of inductive shut-off voltage	+45 V
Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 2 Byte Status information, alarms, diagnostics Status display none Interrupts no Process alarm no	Short-circuit protection of output	yes, electronic
Switching capacity of contacts - Output data size 2 Byte Status information, alarms, diagnostics Status display none Interrupts no Process alarm no	Trigger level	1.5 A
Output data size 2 Byte Status information, alarms, diagnostics Status display none Interrupts no Process alarm no	Number of operating cycle of relay outputs	-
Status information, alarms, diagnostics Status display none Interrupts no Process alarm no	Switching capacity of contacts	-
Status display none Interrupts no Process alarm no	Output data size	2 Byte
Interrupts no	Status information, alarms, diagnostics	
Process alarm no	Status display	none
	Interrupts	no
Diagnostic interrupt no	Process alarm	no
	Diagnostic interrupt	no



Diagnostic functions	no
Diagnostics information read-out	none
Supply voltage display	none
Group error display	none
Channel error display	none
Isolation	
Between channels	-
Between channels of groups to	16
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 / PA 6.6
Mounting	Profile rail 35 mm
Mechanical data	
Dimensions (WxHxD)	25.4 mm x 76 mm x 88 mm
Net weight	80 g
Weight including accessories	-
Gross weight	-
Environmental conditions	
Operating temperature	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C
Certifications	
UL certification	yes
KC certification	-