

Data sheet

SM 222 (222-1BF10)

Technical data

Type SM 222 Courset Information Note - Features 8 DO DC 24 V 2 V 2 V 2 V 2 V 2 V 2 V 2 V 2 V 2	Order no.	222-1BF10
Note	Туре	SM 222
Features 8x DO DC 24 V	General information	
Current consumption/power loss Current consumption from backplane bus 70 mA Power loss 3 W Technical data digital outputs Number of outputs 8 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage DC 20428.8 V Permitted range - Current consumption from power section supply (without load) 10 mA Total current per group, horizontal configuration, 40°C 10 A Total current per group, horizontal configuration, 60°C 10 A Total current per group, vertical configuration, 60°C 10 A Total current per group, vertical configuration 10 A Output delay of "0" to "1" 50 μs Uput delay of "0" to "1" 150 μs Output delay of "1" to "0" 100 μs Minimum load current 2 Lamp load 5 W Parallel switching of outputs for redundant control of a load not possible Parallel switching frequency with inductive load max. 1000 Hz Switching frequency with inductive load max. 100 Hz <	Note	-
Current consumption from backplane bus 70 mA Power loss 3 W Technical data digital outputs Number of outputs 8 Cable length, shielded 600 m Cable length, unshielded 600 m Rated load voltage DC 20.428.8 V Permited range - Current consumption from power section supply (without load) 10 mA Total current per group, horizontal configuration, 40°C 10 A Total current per group, vertical configuration, 60°C 10 A Total current per group, vertical configuration 10 A Output current at signal "1", rated value 2 A Signal logic output Sourcing output Output delay of "0" to "1" 150 µs Unput delay of "1" to "0" 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 most possible Switching frequency with resistive load max. 100 Hz Switching frequency on lamp load max. 10 Hz	Features	DC 24 V
Power loss 3 W Technical data digital outputs Number of outputs 8 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage DC 20.428.8 V Permitted range - Current consumption from power section supply (without load) 10 mA Total current per group, horizontal configuration, 40°C 10 A Total current per group, horizontal configuration 10 A Output current at signal "1", rated value 2 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 not possible Parallel switching frequency with resistive load max. 1000 Hz Switching frequency with inductive load max. 1000 Hz Switching frequency with inductive load max. 10 Hz Internal limitation of inductive shut-off voltage L+ (52 V) Short-circuit protection of output yes, electronic	Current consumption/power loss	
Number of outputs Number of outputs Sable length, shielded Cable length, unshielded 600 m Rated load voltage DC 20.428.8 V Permitted range - Current consumption from power section supply (without load) Total current per group, horizontal configuration, 40°C Total current per group, horizontal configuration, 60°C Total current per group, vertical configuration, 60°C Total current per group, vertical configuration Total current at signal "1", rated value 2 A Signal logic output Sourcing output Output delay of "0" to "1" 150 µs Output delay of "0" to "1" 170 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 Actuation of digital input Switching frequency with inductive load Switching frequency with inductive load Switching frequency with inductive shut-off voltage L+ (-52 V) Short-circuit protection of output Trigger level Number of operating cycle of relay outputs Status display green LED per channel Interrupts no Process alarm no	Current consumption from backplane bus	70 mA
Number of outputs 8 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage DC 20.428.8 V Permitted range - Current consumption from power section supply (without load) 10 mA Total current per group, horizontal configuration, 40°C 10 A Total current per group, horizontal configuration 10 A Output current at signal "1", rated value 2 A Signal logic output Sourcing output Output delay of "0" to "1" to "0" 150 µS Uniting and 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 inductive load max. 1000 Hz Switching frequency with inductive load max. 05 Hz Switching frequency on lamp load max. 01 Hz Internal limitation of inductive shut-off voltage L+ (-52 V) Short-circuit protection of output yes, electronic Trig	Power loss	3 W
Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage DC 20.428.8 V Permitted range - Current consumption from power section supply (without load) 10 mA Total current per group, horizontal configuration, 40°C 10 A Total current per group, horizontal configuration, 60°C 10 A Output current at signal "1", rated value 2 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 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+ (-52 V) Short-circuit protection of output yes, electronic	Technical data digital outputs	
Cable length, unshielded 600 m Rated load voltage DC 20.428.8 V Permitted range - Current consumption from power section supply (without load) 10 mA Total current per group, horizontal configuration, 40°C 10 A Total current per group, horizontal configuration, 60°C 10 A Output current at signal "1", rated value 2 A Signal logic output Sourcing output Output delay of "0" to "1" 150 μs Output delay of "4" to "0" 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 on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage L+ (-52 V) Short-circuit protection of output yes, electronic Trigger level 3 A	Number of outputs	8
Rated load voltage DC 20.428.8 V Permitted range - Current consumption from power section supply (without load) 10 mA Total current per group, horizontal configuration, 40°C 10 A Total current per group, vertical configuration 10 A Output current at signal "1", rated value 2 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 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. 100 Hz Switching frequency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage L+ (-52 V) Short-circuit protection of output yes, electronic Trigger level 3 A Number of operating cycle of relay outputs - Switching capacity of contacts -	Cable length, shielded	1000 m
Permitted range - Current consumption from power section supply (without load) 10 mA Total current per group, horizontal configuration, 40°C 10 A Total current per group, horizontal configuration, 60°C 10 A Total current per group, vertical configuration 10 A Output current at signal "1", rated value 2 A Signal logic output Sourcing output 150 µs Output delay of "0" to "1" 150 µs Output delay of "1" to "0" 100 µs Minimum load current 10" 100 µs Parallel switching of outputs for redundant control of a load 100 µs sible Parallel switching of outputs for increased power 100 possible Parallel switching of outputs for increased power 100 possible Switching frequency with resistive load 100 µs 2.5 µs Switching frequency with inductive load 100 max. 100 Hz Switching frequency with inductive load 100 max. 100 Hz Switching frequency on lamp load 100 max. 10 Hz Internal limitation of inductive shut-off voltage 14 (-52 V) Short-circuit protection of output 100 possible 100 pos	Cable length, unshielded	600 m
Current consumption from power section supply (without load) 10 mA Total current per group, horizontal configuration, 40°C 10 A Total current per group, horizontal configuration 10 A Total current per group, vertical configuration 10 A Output current at signal "1", rated value 2 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 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. 0.5 Hz Short-circuit protection of output yes, electronic Trigger level 3 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 1 Byte	Rated load voltage	DC 20.428.8 V
Total current per group, horizontal configuration, 40°C 10 A Total current per group, horizontal configuration, 60°C 10 A Total current per group, vertical configuration 10 A Output current at signal "1", rated value 2 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	Permitted range	-
Total current per group, horizontal configuration, 60°C 10 A Total current per group, vertical configuration 10 A Output current at signal "1", rated value 2 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 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+ (-52 V) Short-circuit protection of output yes, electronic Trigger level 3 A Number of operating cycle of relay outputs Switching capacity of contacts - Output data size 1 Byte Status display green LED per channel Interrupts no contacts no contact no contacts no contacts no contacts no contacts no contact n	Current consumption from power section supply (without load)	10 mA
Total current per group, vertical configuration 10 A Output current at signal "1", rated value 2 A Signal logic output Sourcing output Output delay of "0" to "1" 150 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 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. 0.1 Hz Internal limitation of inductive shut-off voltage L+ (-52 V) Short-circuit protection of output yes, electronic Trigger level 3 A Number of operating cycle of relay outputs - Switching capacity of contacts - Dutput data size 1 Byte Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Total current per group, horizontal configuration, 40°C	10 A
Output current at signal "1", rated value 2 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 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+ (-52 V) Short-circuit protection of output yes, electronic Trigger level 3 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 1 Byte Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Total current per group, horizontal configuration, 60°C	10 A
Signal logic output Output delay of "0" to "1" 150 µs Output delay of "1" to "0" 100 µs Minimum load current	Total current per group, vertical configuration	10 A
Output delay of "0" to "1" 100 µs Minimum load current	Output current at signal "1", rated value	2 A
Output delay of "1" to "0" Minimum load current	Signal logic output	Sourcing 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 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+ (-52 V) Short-circuit protection of output yes, electronic Trigger level 3 A Number of operating cycle of relay outputs - Switching capacity of contacts Output data size 1 Byte Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Output delay of "0" to "1"	150 μs
Lamp load5 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleActuation of digital inputyesSwitching frequency with resistive loadmax. 1000 HzSwitching frequency with inductive loadmax. 0.5 HzSwitching frequency on lamp loadmax. 10 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputyes, electronicTrigger level3 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size1 ByteStatus information, alarms, diagnosticsStatus displaygreen LED per channelInterruptsnoProcess alarmno	Output delay of "1" to "0"	100 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+ (-52 V) Short-circuit protection of output yes, electronic Trigger level 3 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 1 Byte Status information, alarms, diagnostics Status display green LED per channel Interrupts no output not possible not po	Minimum load current	-
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+ (-52 V) Short-circuit protection of output yes, electronic Trigger level 3 A Number of operating cycle of relay outputs - Switching capacity of contacts Output data size 1 Byte Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm not possible max. 10 Hz L+ (-52 V) max. 10 Hz L+ (-52 V) short-circuit protection of output yes, electronic 1 Byte Status information, contacts - 1 Byte	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 Internal limitation of inductive shut-off voltage L+ (-52 V) Short-circuit protection of output yes, electronic Trigger level 3 A Number of operating cycle of relay outputs - Switching capacity of contacts Output data size 1 Byte Status information, alarms, diagnostics Status display Interrupts no Process alarm max. 1000 Hz max. 10 Hz L+ (-52 V) short-circuit protection of output yes, electronic 3 A L+ (-52 V) 3 Byte Status information, alarms, diagnostics green LED per channel no	Parallel switching of outputs for redundant control of a load	not possible
Switching frequency with resistive load max. 1000 Hz Switching frequency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage L+ (-52 V) Short-circuit protection of output yes, electronic Trigger level 3 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 1 Byte Status information, alarms, diagnostics Status display green LED per channel 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 L+ (-52 V) Short-circuit protection of output yes, electronic Trigger level 3 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 1 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+ (-52 V) Short-circuit protection of output yes, electronic Trigger level 3 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 1 Byte 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+ (-52 V) Short-circuit protection of output yes, electronic Trigger level 3 A Number of operating cycle of relay outputs Switching capacity of contacts - Output data size 1 Byte 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 Trigger level A A Number of operating cycle of relay outputs Switching capacity of contacts Output data size Status information, alarms, diagnostics Status display Interrupts Process alarm yes, electronic 1 A yes, electronic yes,	Switching frequency on lamp load	max. 10 Hz
Trigger level 3 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 1 Byte Status information, alarms, diagnostics Status display green LED per channel Interrupts no no no	Internal limitation of inductive shut-off voltage	L+ (-52 V)
Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 1 Byte 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 1 Byte Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no	Trigger level	3 A
Output data size 1 Byte 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, diagnosticsStatus displaygreen LED per channelInterruptsnoProcess alarmno	Switching capacity of contacts	-
Status displaygreen LED per channelInterruptsnoProcess alarmno	Output data size	1 Byte
Interrupts 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 per group
Group error display	red SF LED
Channel error display	none
Isolation	
Between channels	-
Between channels of groups to	8
Between channels and backplane bus	yes
Insulation tested with	DC 500 V
Datasizes	
Input bytes	0
Output bytes	1
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	100 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
OL Certification	,