

Data sheet SM 222 (222-2BL10)

Technical data

Type     SM 222       General Information     -       Features     32 outputs Output current 1 A       Current consumption/power loss     -       Current consumption/power loss     6.5 W       Technical data digital outputs     8.5 W       Technical data digital outputs     32       Cable length, shielded     000 m       Cable length, ushielded     600 m       Cable longth, ushielded     000 m       Cable length, ushielded     000 m       Cable length, ushielded     000 m       Cable length, ushielded     10 A       Current consumption from load voltage L+ (without load)     15 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 delay of '0' to '1'     150 µs       Output delay of '1' to ra'1     160 µs       Minimum load current     -       Lamp load     5 W       Parallel witching frequency with netasitive load     max, 1000 Hz       Switching frequency with resisitive load     ma	Order no.	222-2BL10
Note     -       Features     32 outputs Output current 1 A       Current consumption/power loss     180 mA       Power loss     6.5 W       Technical data digital outputs     32       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)     15 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, 60°C     10 A       Total current per group, vertical configuration     10 A       Output delay of 1° to 1°1     150 µS       Output delay of 1°1 to 1°2     100 µS       Minimum load current     -       Lamp load     5 W       Parallel switching of outputs for increased power     not possible       Actuation of digital input     wax. 1000 Hz       Switching frequency with inductive load     max. 1000 Hz       Switching frequency with inductive load     max. 1000 Hz       Switching frequency with inductive load     max. 1000 Hz </th <th></th> <th>SM 222</th>		SM 222
Note     -       Features     32 outputs Output current 1 A       Current consumption/power loss     180 mA       Power loss     6.5 W       Technical data digital outputs     32       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)     15 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, 60°C     10 A       Total current per group, vertical configuration     10 A       Output delay of 1° to 1°1     150 µS       Output delay of 1°1 to 1°2     100 µS       Minimum load current     -       Lamp load     5 W       Parallel switching of outputs for increased power     not possible       Actuation of digital input     wax. 1000 Hz       Switching frequency with inductive load     max. 1000 Hz       Switching frequency with inductive load     max. 1000 Hz       Switching frequency with inductive load     max. 1000 Hz </td <td></td> <td></td>		
Features 32 outputs Output current 1 A   Current consumption/power loss 180 mA   Power loss 6.5 W   Technical data digital outputs 32   Number of outputs 32   Cable length, shielded 0000 m   Cable length, shielded 600 m   Rated load voltage DC 20.428.8 V   Current consumption from load voltage L+ (without load) 15 mA   Total current per group, horizontal configuration, 40°C 10 A   Total current per group, vortizontal configuration, 60°C 10 A   Total current per group, vortizontal configuration, 60°C 10 A   Output delay of 1°0 °0 °1° 100 µS   Output delay of 1°0 °1° 100 µS   Minimum load current -   Lamp load mot possible   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 Imax. 1000 Hz   Switching frequency with resistive load max. 1000 Hz   Switching frequency with resistive load max. 0.5 Hz   Switching frequency with rostats -   Current of operating cycle of relay outputs -   Shitching frequency on lamp load max. 0.5 Hz   Switching frequency on lamp load<		
Output current 1 A       Current consumption/power loss       Current consumption from backplane bus     180 mA       Power loss     6.5 W       Technical data digital outputs     32       Cable length, shielded     1000 m       Cable length, shielded     000 m       Rated load voltage     DC 20.428.8 V       Current consumption from load voltage L+ (without load)     15 mA       Total current per group, horizontal configuration, 60°C     10 A       Total current per group, horizontal configuration, 60°C     10 A       Output delay of '0' to '1"     150 µS       Output delay of '0' to '1"     150 µS       Output delay of '0' to '1"     100 µS       Minimu Doad current     -       Lamp load     Not possible       Parallel switching of outputs for redundant control of a load     not possible       Parallel switching frequency with resistive load     max. 1000 Hz		-
Current consumption from backplane bus 180 mA   Power loss 6.5 W   Technical data digital outputs 32   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) 15 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   Output day of "1" to "0" 100 µs   Output day 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   Parallel switching of outputs for increased power not possible   Switching frequency with inductive load max. 1000 Hz   Switching frequency with inductive load max. 105 Hz   Switching frequency with inductive load max. 104 Hz   Internal limitation of inductiv	Features	
Power loss     6.5 W       Technical data digital outputs     32       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)     15 mA       Total current per group, horizontal configuration, 40°C     10 A       Total current per group, horizontal configuration     10 A       Output delay of '0' to '1'     10 A       Output delay of '0' to '1'     100 µs       Minimu load current     -       Lamp load     5 W       Parallel switching of outputs for increased power     not possible       Parallel switching of outputs for increased power     not possible       Switching frequency with inductive load     max. 1000 Hz       Switching frequency on lamp load     max. 1000 Hz       Switching rotection of output     yes, electronic       Trigger level     1.5 A       Number of operating cycle of relay outputs     -       Switching capacity of contacts     -       Output delay if on contacts     -       Switching frequency with inductive shut-off voltage     L+ (-52 V) <td>Current consumption/power loss</td> <td></td>	Current consumption/power loss	
Technical data digital outputs   32     Number of outputs   32     Cable length, shielded   1000 m     Cable longth, unshielded   600 m     Rated load voltage   DC 20.428.8 V     Current consumption from load voltage L+ (without load)   15 mA     Total current per group, horizontal configuration, 40°C   10 A     Total current per group, horizontal configuration, 60°C   10 A     Output dely 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   ✓     Switching frequency with inductive load   max. 1000 Hz     Switching frequency on lamp load   max. 100 Hz     Internal limitation of inductive shut-off voltage   L+ (-52 V)     Shutching frequency on lamp load   max. 100 Hz     Switching roperating cycle of relay outputs   -     Switching roperating cycle of relay outputs   -     Switching roperating cycle of relay outputs   - <t< td=""><td>Current consumption from backplane bus</td><td>180 mA</td></t<>	Current consumption from backplane bus	180 mA
Number of outputs     32       Cable length, shielded     1000 m       Cable length, unshielded     600 m       Rated lead voltage     DC 20.428.8 V       Current consumption from load voltage L+ (without load)     15 mA       Total current per group, horizontal configuration, 40°C     10 A       Total current per group, horizontal configuration     10 A       Output delay of '0° to '1'     1550 µS       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 increased power     not possible       Parallel switching of outputs for increased power     not possible       Actuation of digital input     ✓       Switching frequency with nexistive load     max. 0.5 Hz       Switching frequency on amp load     max. 0.1 Hz       Internal imitation of inductive shut-off voltage     L+ (-62 V)       Short-circuit protection of output     yes, electronic       Trigger level     1.5 A       Number of operating cycle of relay outputs     -       Switching capacity of contacts <t< td=""><td>Power loss</td><td>6.5 W</td></t<>	Power loss	6.5 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)     15 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 delay of 1° to 11°     150 µS       Output delay of 1° to 11°     100 µS       Minimum load current     -       Lamp load     5 W       Parallel switching of outputs for increased power     not possible       Actuation of digital input        Switching frequency with inductive load     max. 1000 Hz       Switching frequency on lamp load     max. 101 Hz       Internal limitation of inductive shut-off voltage     L+ (-52 V)       Sont-circuit protection of outputs     -       Trigger level     1.5 A       Number of operating cycle of relay outputs     -       Switching capacity of contacts     -       Switching capacity of contacts     -       Switching requency shit nulcuitve shut-off voltage	Technical data digital outputs	
Cable length, unshielded600 mRated load voltageDC 20.428.8 VCurrent consumption from load voltage L+ (without load)15 mATotal current per group, horizontal configuration, 40°C10 ATotal current per group, horizontal configuration, 60°C10 ATotal current ta signal "1", rated value1 AOutput current at signal "1", rated value1 AOutput delay of "0" to "1"150 µsOutput delay of "1" to "0"100 µsMinimun load current-Lamp load5 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleActuation of digital inputImax. 1000 HzSwitching frequency with resistive loadmax. 1000 HzSwitching frequency with inductive loadmax. 1000 HzSwitching for outputs for increased powernot possibleSwitching frequency outputs for increased powernot possibleSwitching frequency with resistive loadmax. 1000 HzSwitching frequency outputs for increased powernot possibleSwitching frequency outputs-Switching requency on lamp loadmax. 100 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputyes, electronicTrigger level1.5 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 ByteStatus information, alarms, diagnosticsmo	Number of outputs	32
Rated load voltage     DC 2.0.428.8 V       Current consumption from load voltage L+ (without load)     15 mA       Total current per group, horizontal configuration, 40°C     10 A       Total current per group, vertical configuration, 60°C     10 A       Output current at signal "1", rated value     1 A       Output delay of "0" 0" 1"     150 µs       Output delay of "1" to "0"     100 µs       Minimun load current     -       Lamp load     5 W       Parallel switching of outputs for increased power     not possible       Actuation of digital input     ✓       Switching frequency with inductive load     max. 1000 Hz       Switching frequency with inductive load     max. 1000 Hz       Switching frequency with resistive load     max. 1000 Hz       Switching frequency with resistive load     max. 1000 Hz       Switching frequency outputs for increased power     not possible       Switching frequency with resistive load     max. 1000 Hz       Switching frequency on lamp load     max. 1000 Hz       Switching requency on lamp load     max. 1000 Hz       Switching capacity of contacts     -       Switching capacity of contacts     - </td <td>Cable length, shielded</td> <td>1000 m</td>	Cable length, shielded	1000 m
Current consumption from load voltage L+ (without load)15 mATotal current per group, horizontal configuration, 40°C10 ATotal current per group, vertical configuration10 AOutput current at signal "1", rated value1 AOutput delay of "0" to "1"150 µsOutput delay of "0" to "1"100 µsMinimum load current-Lamp load5 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleActuation of digital input🖋Switching frequency with resistive loadmax. 1000 HzSwitching frequency with inductive loadmax. 0.5 HzSwitching frequency on lamp loadmax. 100 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputs-Switching capacity of contacts-Switching acapacity of contacts-Switching acapacity of contacts-Switching capacity of netay outputs-Shutp acapacity of contacts-Switching frequency state-Switching frequency state-Switching frequency on lamp loadmax. 100 HzSwitching capacity of contacts-Switching capacity of contacts-Switching capacity of contacts-Switching capacity of contacts-Switching capacity of contacts-Status displaygreen LED per channelInternuptsnoProcess alarmno	Cable length, unshielded	600 m
Total current per group, horizontal configuration, 40°C10 ATotal current per group, horizontal configuration10 AOutput current at signal "1", rated value1 AOutput delay of "0" to "1"150 μsOutput delay of "1" to "0"100 μsMinimum load current-Lamp load5 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleActuation of digital input✔Switching frequency with inductive loadmax. 1000 HzSwitching frequency with inductive loadmax. 0.5 HzSwitching frequency on lamp load1.5 ANumber of operating cycle of relay outputs-Switching coloutput sput for volutage-Lierenal1.5 ASwitching apacity of contacts-Output data size4 ByteStatus information, alarms, diagnosticsgreen LED per channelInterruptsnoProcess alarmno	Rated load voltage	DC 20.428.8 V
Total current per group, horizontal configuration, 60°C10 ATotal current per group, vertical configuration10 AOutput current at signal *1*, rated value1 AOutput delay of *0* to *1*150 μsOutput delay of *1* to *0*100 μsMinimum load current-Lamp load5 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleActuation of digital inputSwitching frequency with resistive loadmax. 1000 HzSwitching frequency with inductive loadmax. 0.5 HzSwitching frequency on lamp loadmax. 0.5 HzSwitching requency of outputs-Trigger level1.5 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 ByteStatus displaygreen LED per channelInterruptsnoProcess alarmno	Current consumption from load voltage L+ (without load)	15 mA
Total current per group, vertical configuration10 AOutput current at signal "1", rated value1 AOutput delay of "0" to "1"150 µsOutput delay of "1" to "0"100 µsMinimun load current-Lamp load5 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleActuation of digital inputImax. 1000 HzSwitching 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 level1.5 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 ByteStatus displaygreen LED per channelInterruptsnoProcess alarmno	Total current per group, horizontal configuration, 40°C	10 A
Output current at signal "1", rated value1 AOutput delay of "0" to "1"150 µsOutput delay of "1" to "0"100 µsMinimun load current-Lamp load5 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleActuation of digital input✓Switching frequency with resistive loadmax. 1000 HzSwitching frequency with inductive loadmax. 0.5 HzSwitching frequency on lamp loadmax. 0.1 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputs-Trigger level1.5 ANumber of operating cycle of relay outputs-Switching asize4 ByteStatus displaygreen LED per channelInterruptsnoProcess alarmno	Total current per group, horizontal configuration, 60°C	10 A
Output delay of *0" to *1"150 µsOutput delay of *1" to *0"100 µsMinimum load current-Lamp load5 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleActuation of digital input✔Switching frequency with resistive loadmax. 1000 HzSwitching frequency with inductive loadmax. 0.5 HzSwitching frequency on lamp loadmax. 0.1 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputyes, electronicTrigger level1.5 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 ByteStatus displaygreen LED per channelInterruptsnoProcess alarmno	Total current per group, vertical configuration	10 A
Output delay of "1" to "0"100 μsMinimum load current-Lamp load5 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleActuation of digital inputSwitching 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 level1.5 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 ByteStatus displaygreen LED per channelInterruptsnoProcess alarmno	Output current at signal "1", rated value	1 A
Minimum load current-Lamp load5 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleActuation of digital inputImax. 1000 HzSwitching frequency with resistive loadmax. 1000 HzSwitching frequency on lamp loadmax. 0.5 HzSwitching frequency on lamp loadmax. 10 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputyes, electronicTrigger level1.5 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 ByteStatus information, alarms, diagnosticsgreen LED per channelInterruptsnoProcess alarmno	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 inputImax. 1000 HzSwitching 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 level1.5 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 ByteStatus displaygreen LED per channelInterruptsnoProcess alarmno	Output delay of "1" to "0"	100 µs
Parallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleActuation of digital inputImax. 1000 HzSwitching 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 level1.5 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 ByteStatus displaygreen LED per channelInterruptsnoProcess alarmno	Minimum load current	-
Parallel switching of outputs for increased powernot possibleActuation of digital inputImax. 000 HzSwitching 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 level1.5 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 ByteStatus displaygreen LED per channelInterruptsnoProcess alarmno	Lamp load	5 W
Actuation of digital inputImage: Actuation of digital inputSwitching 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 level1.5 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 ByteStatus displaygreen LED per channelInterruptsnoProcess alarmno	Parallel switching of outputs for redundant control of a load	not possible
Switching 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 level1.5 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 ByteStatus information, alarms, diagnosticsStatus displaygreen LED per channelInterruptsnoProcess alarmno	Parallel switching of outputs for increased power	not possible
Switching 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 level1.5 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 ByteStatus information, alarms, diagnosticsgreen LED per channelInterruptsnoProcess alarmno	Actuation of digital input	✓
Switching frequency on lamp loadmax. 10 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputyes, electronicTrigger level1.5 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 ByteStatus information, alarms, diagnosticsStatus displaygreen LED per channelInterruptsnoProcess alarmno	Switching frequency with resistive load	max. 1000 Hz
Internal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputyes, electronicTrigger level1.5 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 ByteStatus information, alarms, diagnosticsgreen LED per channelInterruptsnoProcess alarmno	Switching frequency with inductive load	max. 0.5 Hz
Short-circuit protection of outputyes, electronicTrigger level1.5 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 ByteStatus information, alarms, diagnosticsgreen LED per channelInterruptsnoProcess alarmno	Switching frequency on lamp load	max. 10 Hz
Trigger level1.5 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 ByteStatus information, alarms, diagnosticsStatus displaygreen LED per channelInterruptsnoProcess alarmno	Internal limitation of inductive shut-off voltage	L+ (-52 V)
Number of operating cycle of relay outputs   -     Switching capacity of contacts   -     Output data size   4 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 4 Byte   Status information, alarms, diagnostics -   Status display green LED per channel   Interrupts no   Process alarm no	Trigger level	1.5 A
Output data size 4 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, 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 Byte
Interrupts     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	A YASKAWA COMPANY
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	16	
Between channels and backplane bus	1	
Insulation tested with	DC 500 V	
Datasizes		
Input bytes	0	
Output bytes	4	
Parameter bytes	0	
Diagnostic bytes	0	
Housing		
Material	PPE / PA 6.6	
Mounting	Profile rail 35 mm	
Mechanical data		
Dimensions (WxHxD)	50.8 mm x 76 mm x 88 mm	
Weight	150 g	
Environmental conditions		
Operating temperature	0 °C to 60 °C	
Storage temperature	-25 °C to 70 °C	
Certifications		
UL508 certification	yes	