

Data sheet SM 222, ECO (222-1BF30)

Technical data

Type     SM 222_ECO       General information     -       Retures     & outputs Output current 0.5 A       Current consumption/power loss     2 W       Current consumption/power loss     2 W       Technical data digital outputs     8       Number of outputs     8       Cable length, shielded     1000 m       Cable length, shielded     600 m       Cable length, shielded     000 m       Carrent consumption from load voltage L+ (without load)     10 mA       Total current per group, horizontal configuration, 40°C     4 A       Current consumption from load voltage L+ (without load)     10 mA       Total current per group, horizontal configuration, 60°C     4 A       Curput delay of 1° to 1°     max. 300 µs       Output delay of 1° to 1°     max. 300 µs       Output delay of 1° to 1°     max. 100 µs       Output delay of 1° to 1°     max. 300 µs       Switching of outputs for inclenased power     no	Order no.	222-1BF30
Note     -       Features     8 outputs Output current 0.5 A       Current consumption from backplane bus     70 m A       Power foss     2 W       Technical data digital outputs     8       Cable length, shielded     000 m       Cable length, shielded     000 m       Cable length, unshielded     000 m       Carrent consumption from load voltage L+ (without load)     10 mA       Total current per group, horizontal configuration, 40°C     4 A       Output delay of 10° 0° 1°     max. 100 µs       Output delay of 1°0° 0° 1°     max. 350 µs       Minimu load current     -       Lamp load     SW       Parallel switching of outputs for increased power     not possible       Parallel switching of outputs for increased power     not possible       Parallel switching of outputs for increased power     not possible       Switching frequency with indictive load	Туре	SM 222, ECO
Note     -       Features     8 outputs Output current 0.5 A       Current consumption from backplane bus     70 m A       Power foss     2 W       Technical data digital outputs     8       Cable length, shielded     000 m       Cable length, shielded     000 m       Cable length, unshielded     000 m       Carrent consumption from load voltage L+ (without load)     10 mA       Total current per group, horizontal configuration, 40°C     4 A       Output delay of 10° 0° 1°     max. 100 µs       Output delay of 1°0° 0° 1°     max. 350 µs       Minimu load current     -       Lamp load     SW       Parallel switching of outputs for increased power     not possible       Parallel switching of outputs for increased power     not possible       Parallel switching of outputs for increased power     not possible       Switching frequency with indictive load		
Features 8 outputs Output current 0.5 A   Current consumption/power loss 70 mA   Power loss 2 W   Technical data digital outputs 8   Number of outputs 8   Cable length, unshielded 600 m   Catal current per group, horizontal configuration, 40°C 4 A   Total current per group, vertical configuration, 60°C 4 A   Output delay of 1°1 0° max. 100 µs   Output delay of 1°1 0° max. 350 µs   Minnum load current -   Lamp load 5 W   Parallel switching of outputs for redundant control of a load not possible   Parallel switching of duputs for increased power not possible   Parallel switching of duputs for increased power not possible   Switching frequency with resistive load max. 100 Hz   Switching frequency with nubuctive load max. 100 Hz   Switching frequency with inductive subt-off voltage 1+ (-52 V)   Short-circut protection of outputs -   Switching reque	General information	
Output current 0.5 A       Current consumption/power loss     70 mA       Power loss     2 W       Technical data digital outputs     8       Cable length, shielded     600 m       Cable length, nahielded     DC 20.428.8 V       Current consumption from load voltage L+ (without load)     10 mA       Total current per group, horizontal configuration, 40°C     4 A       Output delay of '0' to '1'     max. 100 µs       Output delay of '0' to '1'     max. 350 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. 100 µz       Switching frequency with inductive load     max. 0.5 Hz       S	Note	-
Current consumption from backplane bus 70 mA   Power loss 2 W   Technical data digital outputs 8   Cable length, shielded 1000 m   Cable length, unshielded 600 m   Rated load voltage DC 20428.8 V   Current consumption from load voltage L+ (without load) 10 mA   Total current per group, horizontal configuration, 60°C 4 A   Total current per group, horizontal configuration, 60°C 4 A   Output delay of "1" max. 100 µs   Output delay of "1" to "0" max. 350 µs   Minimum load current -   Lamp load 5 W   Parallel switching of outputs for redundant control of a load not possible   Actuation of digital input yes   Switching frequency with inductive load max. 100 Hz   Switching frequency with resistive load max. 100 Hz   Switching frequency with inductive load max. 101 Hz   Internal limitation of inductive shut-off voltage L+ (-52 V)   Short-circuit protection of output yes, electronic   Trigge level 1   Number of operating c	Features	
Power loss     2 W       Technical data digital outputs     8       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     4 A       Output degroup, horizontal configuration, 60°C     4 A       Output degroup, vertical configuration, 60°C     4 A       Output degroup, vertical configuration     5 W       Parallel switching of outputs for redundant control of a load     not possible	Current consumption/power loss	
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       Current consumption from load voltage L+ (without load)     10 mA       Total current per group, horizontal configuration, 40°C     4 A       Total current per group, horizontal configuration, 60°C     4 A       Output delay of 1° to *1     max. 100 µs       Output delay of 1° to *1     max. 100 µs       Output delay of 1° to *1     max. 350 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 frequency with inductive load     max. 100 Hz       Switching frequency on lamp load     max. 100 Hz       Switching frequency on lamp load     max. 100 Hz       Switching frequency on lamp load     max. 1000 Hz       Switching frequency on lamp load     max. 100 Hz       Switching frequency on lamp load     max. 101 Hz       Internal limitation of i	Current consumption from backplane bus	70 mA
Number of outputs8Cable length, shielded1000 mCable length, unshielded600 mRated load voltageDC 20.428.8 VCurrent consumption from load voltage L+ (without load)10 mATotal current per group, horizontal configuration, 40°C4 ATotal current per group, horizontal configuration, 60°C4 AOutput current at signal "1", rated value0.5 AOutput delay of "0" to "1"max. 100 µsOutput delay of "0" to "1"max. 350 µsMinimum load current-Lamp load5 WParallel switching of outputs for redundant control of a loadnot possibleActuation of digital inputyesSwitching frequency with inductive loadmax. 100 µsSwitching frequency on lamp loadmax. 100 HzSwitching frequency on lamp loadmax. 100 HzSwitching frequency on lamp loadmax. 100 HzSwitching copecie of outputsyes, electronicSwitching requency on lamp loadmax. 100 HzSwitching requency on lamp loadmax. 100 HzSwitching capacity of contacts-Output data size1 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size1 ByteStatus information, alarms, diagnosticsgreen LED per channelInterruptnoProcess alarmnoDiagnostic interruptno	Power loss	2 W
Cable length, shielded1000 mCable length, unshielded600 mRated load voltageDC 20.428.8 VCurrent consumption from load voltage L+ (without load)10 mATotal current per group, horizontal configuration, 40°C4 ATotal current per group, horizontal configuration, 60°C4 AOutput current at signal "1", rated value0.5 AOutput delay of "0" to "1"max. 100 µsOutput delay of "1" to "0"max. 100 µsOutput delay of "1" to "0"max. 100 µsMinimum load current-Lamp load5 WParallel switching of outputs for increased powernot possibleActuation of digital inputyesSwitching frequency with inductive loadmax. 0.5 HzSwitching frequency on lamp loadmax. 0.5 HzSwitching requency on lamp loadmax. 0.5 HzSwitching requency on lamp loadyes. electronicTrigger level1 ANumber of operating cycle of relay outputs-Switching requency on lamp loadyes. electronicTrigger level1 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size1 ByteStatus sifeplaygreen LED per channelInterruptsnoProcess alarmnoDiagnostic interruptno	Technical data digital outputs	
Cable length, unshielded600 mRated load voltageDC 20.428.8 VCurrent consumption from load voltage L+ (without load)10 mATotal current per group, horizontal configuration, 40°C4 ATotal current per group, horizontal configuration, 60°C4 AOutput current at signal "1", rated value0.5 AOutput delay of 0° to "1"max. 100 µsOutput delay of 0° to "1"max. 350 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 inputyesSwitching frequency with resistive loadmax. 100 HzSwitching frequency outputs tor loadmax. 0.5 HzSwitching frequency outputs of outputs-Triger level1 ANumber of operating cycle of relay outputs-Switching copacity of contacts-Output deta size1 ByteStatus sifeslaygreen LED per channelInternal lintationnoProcess alarmnoDiagnostic interruptno	Number of outputs	8
Rated load voltage     DC 2.0.428.8 V       Current consumption from load voltage L+ (without load)     10 mA       Total current per group, horizontal configuration, 40°C     4 A       Total current per group, vertical configuration, 60°C     4 A       Output current at signal "1", rated value     0.5 A       Output delay of "0" to "1"     max. 100 µs       Output delay of "1" to "0"     max. 350 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. 100 Hz       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 requency on lamp load     max. 1000 Hz       Switching requency on lamp load     max. 100 Hz       Switching requency on lamp load     max. 100 Hz       Switching c	Cable length, shielded	1000 m
Current consumption from load voltage L+ (without load)10 mATotal current per group, horizontal configuration, 40°C4 ATotal current per group, vertical configuration, 60°C4 AOutput current at signal "1", rated value0.5 AOutput delay of "0" to "1"max. 100 µsOutput delay of "0" to "1"max. 350 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 inputyesSwitching frequency with inductive loadmax. 100 HzSwitching frequency on lamp loadmax. 100 HzSwitching frequency on lamp loadmax. 100 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputyes, electronicTrigger level1 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size1 ByteStatus displaygreen LED per channelInternatlinitationnoProcess alarmnoProcess alarmnoDutput data sizenoProcess alarmnoData size interruptno	Cable length, unshielded	600 m
Total current per group, horizontal configuration, 40°C4 ATotal current per group, horizontal configuration4 AOutput current at signal "1", rated value0.5 AOutput delay of "0" to "1"max. 100 µsOutput delay of "0" to "1"max. 350 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 inputyesSwitching frequency with resistive loadmax. 0.5 HzSwitching frequency with inductive loadmax. 100 HzSwitching frequency on lamp loadmax. 10 HzInternal limitation of inductive shut-off voltageL + (-52 V)Short-circuit protection of outputs-Switching capacity of contacts-Output data size1 ByteStatus displaygreen LED per channelInternalitynoProcess alarmnoDiagnostic interruptno	Rated load voltage	DC 20.428.8 V
Total current per group, horizontal configuration, 60°C4 ATotal current per group, vertical configuration4 AOutput current at signal "1", rated value0.5 AOutput delay of "0" to "1"max. 100 µsOutput delay of "1" to "0"max. 350 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 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 level1 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size1 ByteStatus displaygreen LED per channelInterruptsnoProcess alarmnoDiagnostic interruptno	Current consumption from load voltage L+ (without load)	10 mA
Total current per group, vertical configuration4 AOutput current at signal "1", rated value0.5 AOutput delay of "0" to "1"max. 100 µsOutput delay of "1" to "0"max. 350 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 inputyesSwitching frequency with resistive loadmax. 0.0 HzSwitching frequency with inductive loadmax. 0.1 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputyes, electronicTrigger level1 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size1 ByteStatus displaygreen LED per channelInterruptsnoProcess alarmnoDiagnostic interruptno	Total current per group, horizontal configuration, 40°C	4 A
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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 level1 ANumber of operating cycle of relay outputs-Output data size1 ByteStatus displaygreen LED per channelInterruptsnoProcess alarmnoDiagnostic interruptno	Output delay of "1" to "0"	max. 350 μs
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Parallel 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 level1 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size1 ByteStatus displaygreen LED per channelInterruptsnoProcess alarmnoDiagnostic interruptno	Lamp load	5 W
Actuation 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 level1 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size1 ByteStatus displaygreen LED per channelInterruptsnoProcess alarmnoDiagonstic interruptno	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 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size1 ByteStatus information, alarms, diagnosticsgreen LED per channelInterruptsnoProcess alarmnoDiagnostic interruptno	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 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size1 ByteStatus information, alarms, diagnosticsStatus displaynoInterruptsnoProcess alarmnoDiagnostic interruptno	Actuation of digital input	yes
Switching frequency on lamp loadmax. 10 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputyes, electronicTrigger level1 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size1 ByteStatus information, alarms, diagnosticsStatus displaygreen LED per channelInterruptsnoProcess alarmnoDiagnostic interruptno	Switching frequency with resistive load	max. 1000 Hz
Internal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputyes, electronicTrigger level1 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size1 ByteStatus information, alarms, diagnosticsStatus displaygreen LED per channelInterruptsnoProcess alarmnoDiagnostic interruptno	Switching frequency with inductive load	max. 0.5 Hz
Short-circuit protection of outputyes, electronicTrigger level1 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size1 ByteStatus information, alarms, diagnosticsStatus displaygreen LED per channelInterruptsnoProcess alarmnoDiagnostic interruptno	Switching frequency on lamp load	max. 10 Hz
Trigger level1 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size1 ByteStatus information, alarms, diagnosticsStatus displaygreen LED per channelInterruptsnoProcess alarmnoDiagnostic interruptno	Internal limitation of inductive shut-off voltage	L+ (-52 V)
Number of operating cycle of relay outputs-Switching capacity of contacts-Output data size1 ByteStatus information, alarms, diagnosticsStatus displaygreen LED per channelInterruptsnoProcess alarmnoDiagnostic interruptno	Short-circuit protection of output	yes, electronic
Switching capacity of contacts -   Output data size 1 Byte   Status information, alarms, diagnostics green LED per channel   Interrupts no   Process alarm no   Diagnostic interrupt no	Trigger level	1 A
Output data size 1 Byte   Status information, alarms, diagnostics   Status display green LED per channel   Interrupts no   Process alarm no   Diagnostic interrupt no	Number of operating cycle of relay outputs	-
Status information, alarms, diagnostics     Status display   green LED per channel     Interrupts   no     Process alarm   no     Diagnostic interrupt   no	Switching capacity of contacts	-
Status displaygreen LED per channelInterruptsnoProcess alarmnoDiagnostic interruptno	Output data size	1 Byte
Interrupts no   Process alarm no   Diagnostic interrupt no	Status information, alarms, diagnostics	
Process alarm no   Diagnostic interrupt no	Status display	green LED per channel
Diagnostic interrupt no	Interrupts	no
	Process alarm	no
Diagnostic functions no	Diagnostic interrupt	no
	Diagnostic functions	no



Diagnostics information read-out	none	A YASKAWA COMPANY
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	
Weight	90 g	
Environmental conditions		
Operating temperature	0 °C to 60 °C	
Storage temperature	-25 °C to 70 °C	
Certifications		
UL certification	yes	
KC certification	-	