

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
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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	
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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
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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
Output 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	Total current per group, horizontal configuration, 60°C	4 A
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Output 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. 0.10 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	Output current at signal "1", rated value	0.5 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 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 contacts0Output data size1 ByteStatus information, alarms, diagnosticsgreen LED per channelInterruptsnoProcess alarmnoDiagnostic interruptno	Output delay of "0" to "1"	max. 100 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 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
Parallel 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	Minimum load current	-
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
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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	-	