

Data sheet

SM 022 (022-1BF00)

Technical data

Type SM 022 Modulo ID 016 AFC8 General information Note - Features B CD D C24 V 0.5 A V Current consumption/power loss Current consumption from backplane bus 80 mA Power loss 0.7 W Technical data digital outputs Number of outputs 8 Cable length, shielded 1000 m Cable length, shielded 600 m Rated load voltage L+ (without load) 15 mA Total current per group, horizontal configuration, 40°C 4A Total current per group, horizontal configuration, 60°C 4A Total current per group, vertical configuration, 60°C 4A Output current at signal "1", rated value 0.5 A Signal logic output Supput of 1" 10°0 175 µs Minimum load current Lamp load 100 utputs 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 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 Parallel switching of outputs for increased power not possible nax. 100 Hz Switching frequency with inductive load max. 100 Hz Switching frequency with inductive load max. 10 Hz Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching requency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching reparallel switching of outputs shut-off voltage Switching reparallel switching of outputs size 8 Bit Status information, alarms, diagnostics Status display green LED por channel Interrupts	Order no.	022-1BF00
General information Note	Туре	SM 022
Note	Module ID	0106 AFC8
Features 8x DO DC 24 V 0.5 A Current consumption/power loss Current consumption from backplane bus 80 mA Power loss 0.7 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 Current consumption from load voltage L+ (without load) 15 mA Total current per group, horizontal configuration, 40°C 4 A Total current per group, horizontal configuration, 60°C 4 A Total current per group, vertical configuration 4 A Output current at signal "1", rated value 0.5 A Signal logic output Sourcing output Output delay of "0" to "1" 30 µs Output delay of "1" to "0" 175 µs Minimum load current	General information	
Current consumption/power loss Current consumption from backplane bus 80 mA Power loss 0.7 W Technical data digital outputs Number of outputs 8 Cable length, shielded 1000 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 4 A Total current per group, horizontal configuration, 60°C 4 A Cutput current per group, retrical configuration 40°C 4 A Cutput delay of '0° to "1" 30 µs Curput delay of '0° to "1" 00° 175 µs Minimum load current	Note	-
Current consumption from backplane bus 80 mA Power loss 0.7 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 Current consumption from load voltage L+ (without load) 15 mA Total current per group, horizontal configuration, 40°C 4 A Total current per group, horizontal configuration, 60°C 4 A Total current per group, horizontal configuration 4 A Output current signal "1", rated value 0.5 A Signal logic output Sourcing output Output delay of "0" to "1" 30 µs Output delay of "1" to "0" 175 µs Minimum load current - Lamp load 10 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. 100 Hz Switching frequency with inductive load max. 10 Hz Switching frequency on lamp load max. 10 Hz Internal limitation of toutput Trigger level 1 A Number of operating cycle of relay outputs Switching capacity of contacts - Output data size 8 Bit Status display green LED per channel Interrupts	Features	DC 24 V
Power loss 0.7 W Technical data digital outputs Number of outputs 8 Cable length, shielded 1000 m Rated load voltage	Current consumption/power loss	
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) 15 mA Total current per group, horizontal configuration, 40°C 4 A Total current per group, horizontal configuration, 60°C 4 A Total current per group, vertical configuration, 60°C 4 A Output current at signal "1", rated value 0.5 A Signal logic output Sourcing output Output delay of "0" to "1" 30 µs Output delay of "1" to "0" 175 µs Minimum load current Lamp load 10 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. 100 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+ (-45 V) Short-circuit protection of outputs Switching capacity of contacts - Output data size 8 Bit Status display green LED per channel Interrupts	Current consumption from backplane bus	80 mA
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) 15 mA Total current per group, horizontal configuration, 40°C 4 A Total current per group, horizontal configuration, 60°C 4 A Output current at signal "1", rated value 0.5 A Signal logic output Sourcing output Output delay of "0" to "1" 30 µs Output delay of "1" to "0" 175 µs Minimum load current Lamp load 10 W Parallel switching of outputs for redundant control of a load not possible Actuation of digital input yes Switching frequency with resistive load max. 100 Hz Switching frequency with resistive load max. 100 Hz Switching frequency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of outputs Switching capacity of contacts - Output data size 8 Bit Status display green LED per channel Interrupts	Power loss	0.7 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 4 A Total current per group, horizontal configuration, 60°C 4 A Total current per group, vertical configuration 4 A Output current at signal "1", rated value 0.5 A Signal logic output Sourcing output Output delay of "0" to "1" 30 µs Output delay of "1" to "0" 175 µs Minimum load current	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) 15 mA Total current per group, horizontal configuration, 40°C 4 A Total current per group, horizontal configuration, 60°C 4 A Total current per group, vertical configuration 4 A Output current at signal "1", rated value 0.5 A Signal logic output Sourcing output Output delay of "0" to "1" 30 µs Output delay of "0" to "1" 175 µs Minimum load current Lamp load 10 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+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs Switching capacity of contacts - Output data size 8 Bit Status display green LED per channel Interrupts no outputs on the size of t	Number of outputs	8
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 4 A Total current per group, horizontal configuration, 60°C 4 A Total current per group, vertical configuration 4 A Output current at signal "1", rated value 0.5 A Signal logic output Sourcing output Output delay of "0" to "1" 30 µs Output delay of "1" to "0" 175 µs Minimum load current Lamp load 10 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 resistive 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 L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs Switching capacity of contacts - Output data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts	Cable length, shielded	1000 m
Current consumption from load voltage L+ (without load) Total current per group, horizontal configuration, 40°C 4 A Total current per group, horizontal configuration, 60°C 4 A Total current per group, vertical configuration 4 A Output current at signal *11°, rated value 0.5 A Signal logic output Sourcing output Output delay of "0" to "1" 30 µs Output delay of "0" to "1" 175 µs Minimum load current Lamp load 10 W Parallel switching of outputs for redundant control of a load 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 L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Output data size 8 Bit Status display green LED per channel Interrupts	Cable length, unshielded	600 m
Total current per group, horizontal configuration, 40°C 4 A Total current per group, horizontal configuration, 60°C 4 A Total current per group, vertical configuration 4 A Output current at signal "1", rated value 0.5 A Signal logic output Sourcing output Output delay of "0" to "1" 30 µs Output delay of "1" to "0" 175 µs Minimum load current - Lamp load 10 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+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Rated load voltage	DC 20.428.8 V
Total current per group, horizontal configuration, 60°C 4 A Total current per group, vertical configuration 4 A Output current at signal "1", rated value 0.5 A Signal logic output Sourcing output Output delay of "0" to "1" 30 µs Output delay of "1" to "0" 175 µs Minimum load current - Lamp load 10 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+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs Switching capacity of contacts - Output data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts	Current consumption from load voltage L+ (without load)	15 mA
Total current per group, vertical configuration 4 A Output current at signal "1", rated value 0.5 A Signal logic output Sourcing output Output delay of "0" to "1" 30 μs Output delay of "1" to "0" 175 μs Minimum load current - Lamp load 10 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+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts	Total current per group, horizontal configuration, 40°C	4 A
Output current at signal "1", rated value 0.5 A Signal logic output Sourcing output Output delay of "0" to "1" 30 μs Output delay of "1" to "0" 175 μs Minimum load current - Lamp load 10 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+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 8 Bit Status display green LED per channel Interrupts no	Total current per group, horizontal configuration, 60°C	4 A
Signal logic output Output delay of "0" to "1" Output delay of "1" to "0" I75 µs Minimum load current Lamp load Parallel switching of outputs for redundant control of a load not possible 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+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 8 Bit Status display green LED per channel Interrupts	Total current per group, vertical configuration	4 A
Output delay of "0" to "1" 30 µs Output delay of "1" to "0" 175 µs Minimum load current - Lamp load 10 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+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 8 Bit Status display green LED per channel Interrupts no	Output current at signal "1", rated value	0.5 A
Output delay of "1" to "0" Minimum load current Lamp load 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 L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 8 Bit Status display green LED per channel Interrupts	Signal logic output	Sourcing output
Minimum load current Lamp load Parallel switching of outputs for redundant control of a load not possible 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+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs Switching capacity of contacts Output data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts	Output delay of "0" to "1"	30 µs
Lamp load 10 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+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Output delay of "1" to "0"	175 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+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts not possible not	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 L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Lamp load	10 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 L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts 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 L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 8 Bit 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+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 8 Bit 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+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Switching frequency with resistive load	max. 1000 Hz
Internal limitation of inductive shut-off voltage L+ (-45 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Switching frequency with inductive load	max. 0.5 Hz
Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Switching frequency on lamp load	max. 10 Hz
Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Internal limitation of inductive shut-off voltage	L+ (-45 V)
Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Short-circuit protection of output	yes, electronic
Switching capacity of contacts Output data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Trigger level	1 A
Output data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Number of operating cycle of relay outputs	-
Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Switching capacity of contacts	-
Status display green LED per channel Interrupts no	Output data size	8 Bit
Interrupts no	Status information, alarms, diagnostics	
	Status display	green LED per channel
Process alarm no	Interrupts	no
	Process alarm	no

YASKAWA VIPA CONTROLS

Diagnostic interrupt	no
Diagnostic functions	no
Diagnostics information read-out	none
Supply voltage display	green LED
Group error display	red LED
Channel error display	none
Isolation	
Between channels	-
Between channels of groups to	-
Between channels and backplane bus	yes
Insulation tested with	DC 500 V
PWM data	
PWM channels	-
PWM time basis	-
Period length	-
Minimum pulse width	-
Type of output	-
Safety	
Safety protocol	-
Safety requirements	-
Secure user address	-
Watchdog	-
Two channels	-
Test pulse length	-
Circuit monitoring	-
Datasizes	
Input bytes	0
Output bytes	1
Parameter bytes	0
Diagnostic bytes	0
Housing	
Material	PPE / PPE GF10
Mounting	Profile rail 35 mm
Mechanical data	
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm
Net weight	58 g
Weight including accessories	58 g
Gross weight	73 g
Environmental conditions	
Operating temperature	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C
Certifications	
UL certification	yes