

## Data sheet

SM 022 (022-1BD70)

## Technical data

Type SM 022  Module ID 0F43.57E2  General information  Note	Order no.	022-1BD70
Seneral information	Туре	SM 022
Note   -     4 cutputs   Time stamp	Module ID	0F43 57E2
Note   -     4 cutputs   Time stamp		
Features 4 outputs Time stamp Output current 0.5 A  Current consumption/power loss  Current consumption from backplane bus 90 mA  Power loss 0.95 W  Technical data digital outputs  Number of outputs 4  Cable length, shielded 1000 m  Cable length, shielded 600 m  Rated load voltage DC 20.428.8 V  Current consumption from load voltage L+ (without load) 25 mA  Total current per group, horizontal configuration, 60°C 2 A  Total current per group, horizontal configuration 60°C 2 A  Total current per group, retrical configuration 60°C 2 A  Output delay of "0" to 11" max. 100 ns  Output delay of "1" to "0" max. 100 ns  Minimum load current 1 -  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  Switching frequency with resistive load max. 40 kHz  Switching frequency on lamp load max. 40 kHz  Internal limitation of inductive shut-off voltage L+ (-52 V)  Short-circuit protection of output yes, electronic, and only highside 15 current per group of the protection of output size of the protection of output size of the protection of output yes, electronic, and only highside 15 current per group outputs for elay outputs -  Switching capacity of contacts -  Output data size 60 Byte  Status display green LED per channel Interupts	General information	
Time stamp Output current 0.5 A  Current consumption/power loss  Current consumption from backplane bus 90 mA Power loss 0.95 W  Technical data digital outputs  Number of outputs 4 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) 25 mA Total current per group, horizontal configuration, 40°C 2 A Total current per group, horizontal configuration, 60°C 2 A Total current per group, vertical configuration 2 A Output current at signal "1", rated value 0.5 A Output delay of "0" to "1" max. 100 ns  Minimum load current Lamp load 10 W Parallel switching of outputs for redundant control of a load not possible Actuation of digital input  Whiching frequency with resistive load max. 40 kHz Switching frequency with inductive load max. 40 kHz Switching frequency with inductive load max. 40 kHz Switching frequency with inductive load max. 40 kHz Switching frequency on lamp load great lamp. 40 kHz Switching capacity of contacts -  Switching capacity of contacts -  Switching capacity of contacts -  Output data size 60 Byte	Note	-
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Power loss    Description   Power loss   Pow	Current consumption/power loss	
Number of outputs 4 Cable length, shielded 1000 m Rated load voltage DC 20.428.8 V Current consumption from load voltage L+ (without load) 25 mA Total current per group, horizontal configuration, 40°C 2 A Total current per group, horizontal configuration, 60°C 2 A Total current per group, vertical configuration 2 A Output current at signal *1", rated value 0.5 A Output delay of *0" to *1" max. 100 ns Output delay of *1" to *0" max. 100 ns 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  **Switching frequency with inductive load max. 40 kHz Switching frequency on lamp load max. 40 kHz Switching frequency on lamp load max. 40 kHz Switching frequency on lamp load max. 40 kHz Internal limitation of inductive shut-off voltage L+ (-52 V) Short-circuit protection of output  **Trigger level 2.5 A Number of operating cycle of relay outputs  **Switching capacity of contacts - Output data size 60 Byte  Status display green LED per channel Interrupts	Current consumption from backplane bus	90 mA
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Cable length, unshielded 600 m Rated load voltage DC 20.428.8 V  Current consumption from load voltage L+ (without load) 25 mA  Total current per group, horizontal configuration, 40°C 2 A  Total current per group, retical configuration, 60°C 2 A  Total current per group, vertical configuration 2 A  Output current at signal "1", rated value 0.5 A  Output delay of "0" to "1" max. 100 ns  Output delay of "1" to "0" max. 100 ns  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  Switching frequency with resistive load max. 40 kHz  Switching frequency with inductive load max. 40 kHz  Switching frequency on lamp load max. 40 kHz  Switching frequency on lamp load max. 40 kHz  Internal limitation of inductive shut-off voltage L+ (-52 V)  Short-circuit protection of output yes, electronic, and only highside  Trigger level 2.5 A  Number of operating cycle of relay outputs -  Switching capacity of contacts -  Output data size 60 Byte  Status display green LED per channel  Interrupts not possible groups and possible green LED per channel  Interrupts no	Number of outputs	4
Rated load voltage DC 20.428.8 V  Current consumption from load voltage L+ (without load) 25 mA  Total current per group, horizontal configuration, 40°C 2 A  Total current per group, horizontal configuration, 60°C 2 A  Total current per group, vertical configuration 2 A  Output current at signal "1", rated value 0.5 A  Output delay of "0" to "1" max. 100 ns  Output delay of "0" to "1" to "0" max. 100 ns  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   Switching frequency with resistive load max. 40 kHz  Switching frequency with inductive load max. 40 kHz  Switching frequency on lamp load max. 40 kHz  Cuty that a size 60 Byte  Status information, alarms, diagnostics  Status display green LED per channel  Interrupts	Cable length, shielded	1000 m
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Output current at signal "1", rated value 0.5 A  Output delay of "0" to "1" max. 100 ns  Output delay of "1" to "0" max. 100 ns  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   Switching frequency with resistive load max. 40 kHz  Switching frequency with inductive load max. 40 kHz  Switching frequency on lamp load max. 40 kHz  Internal limitation of inductive shut-off voltage L+ (-52 V)  Short-circuit protection of output yes, electronic, and only highside  Trigger level 2.5 A  Number of operating cycle of relay outputs -  Switching capacity of contacts -  Output data size 60 Byte  Status display green LED per channel  Interrupts no	Total current per group, horizontal configuration, 60°C	2 A
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Switching frequency on lamp load max. 40 kHz  Internal limitation of inductive shut-off voltage L+ (-52 V)  Short-circuit protection of output yes, electronic, and only highside  Trigger level 2.5 A  Number of operating cycle of relay outputs -  Switching capacity of contacts -  Output data size 60 Byte  Status information, alarms, diagnostics  Status display green LED per channel  Interrupts no	Switching frequency with resistive load	max. 40 kHz
Internal limitation of inductive shut-off voltage  L+ (-52 V)  Short-circuit protection of output  yes, electronic, and only highside  Trigger level  2.5 A  Number of operating cycle of relay outputs  - Switching capacity of contacts  - Output data size  60 Byte  Status information, alarms, diagnostics  Status display  green LED per channel Interrupts  no	Switching frequency with inductive load	max. 40 kHz
Short-circuit protection of output yes, electronic, and only highside  Trigger level 2.5 A  Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 60 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts no	Switching frequency on lamp load	max. 40 kHz
Trigger level 2.5 A  Number of operating cycle of relay outputs -  Switching capacity of contacts -  Output data size 60 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts 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  60 Byte  Status information, alarms, diagnostics  Status display  green LED per channel Interrupts  no	Short-circuit protection of output	yes, electronic, and only highside
Switching capacity of contacts  Output data size  60 Byte  Status information, alarms, diagnostics  Status display  green LED per channel Interrupts  no	Trigger level	2.5 A
Output data size 60 Byte  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	60 Byte
Interrupts no	Status information, alarms, diagnostics	
	Status display	green LED per channel
Process alarm no	Interrupts	no
	Process alarm	no



Diagnostic interrupt	no	A YASKAWA COMPANY
Diagnostic functions	no	
Diagnostics information read-out	possible	
Supply voltage display	green LED	
Group error display	red SF LED	
Channel error display	none	
Isolation		
Between channels	-	
Between channels of groups to	-	
Between channels and backplane bus	✓	
Insulation tested with	DC 500 V	
PWM data		
PWM channels	-	
PWM time basis	-	
Period length	-	
Minimum pulse width	-	
PtP communication	-	
Safety		
Safety protocol	-	
Safety requirements	-	
Secure user address	-	
Watchdog	-	
Two channels	-	
Test pulse length	-	
Circuit monitoring	-	
Datasizes		
Input bytes	4	
Output bytes	20 / 60	
Parameter bytes	6	
Diagnostic bytes	20	
Housing		
Material	PPE / PPE GF10	
Mounting	Profile rail 35 mm	
Mechanical data		
Dimensions (WxHxD)	12.9 mm x 109 mm x 70	6.5 mm
Weight	60 g	
Environmental conditions		
Operating temperature	0 °C to 60 °C	
Storage temperature	-25 °C to 70 °C	
Certifications		
UL508 certification	yes	