

Data sheet SM 021 (021-1BD00)

Technical data

Type SM 021 Module ID 0003 9F84 General Information Note - Features 4 inputs Current consumption/power loss Current consumption from backplane bus 65 mA Power loss 0.6 W Technical data digital inputs Number of inputs 4 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage - Current consumption from load voltage L+ (without load) - Rated value DC 20.428.8 V Input voltage for signal "0" DC 1528.8 V Input voltage for signal "1" DC 1528.8 V Input delay of "0" to "1" 3 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 3 ms Input delay of "0" to "1" 3 ms Number of simultaneously utilizable inputs horizontal configuration 4 Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit Status information, alarms, diagnostics	Order no.	021-1BD00
General information Note Features 4 inputs Current consumption/power loss Current consumption from backplane bus 65 mA Power loss 0.6 W Technical data digital inputs Number of inputs 4 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage Current consumption from load voltage L+ (without load) Rated value DC 20.428.8 V Input voltage for signal "0" DC 05 V Input voltage for signal "1" DC 1528.8 V Input voltage hysteresis Frequency range Input resistance Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 3 ms Input delay of "0" to "1" 3 ms Input delay of "1" to "0" 3 ms Number of simultaneously utilizable inputs horizontal configuration 4 Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Туре	SM 021
Features	Module ID	0003 9F84
Features		
Current consumption/power loss Current consumption from backplane bus 65 mA Power loss 0.6 W Technical data digital inputs Number of inputs 4 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage - Current consumption from load voltage L+ (without load) - Rated value DC 20.428.8 V Input voltage for signal "0" DC 1528.8 V Input voltage for signal "1" DC 1528.8 V Input voltage hysteresis - Frequency range - Input resistance - Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 3 ms Number of simultaneously utilizable inputs horizontal configuration 4 Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	General information	
Current consumption/power loss Current consumption from backplane bus 65 mA Power loss 0.6 W Technical data digital inputs Number of inputs 4 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage - Current consumption from load voltage L+ (without load) - Rated value DC 20.428.8 V Input voltage for signal "0" DC 05 V Input voltage for signal "1" DC 1528.8 V Input voltage hysteresis - Frequency range - Input resistance - Input resistance - Input resistance - Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 3 ms Input delay of "0" to "1" 3 ms Input delay of "1" to "0" 3 ms Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size Initial data size	Note	-
Current consumption from backplane bus 0.6 W Technical data digital inputs Number of inputs 4 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage - Current consumption from load voltage L+ (without load) - Rated value DC 20.428.8 V Input voltage for signal "0" DC 05 V Input voltage for signal "1" DC 1528.8 V Input voltage for signal "1" DC 1528.8 V Input voltage hysteresis - Frequency range - Input resistance - Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 3 ms Input delay of "0" to "1" 3 ms Number of simultaneously utilizable inputs horizontal configuration 4 Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Features	4 inputs
Power loss Number of inputs 4 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage - Current consumption from load voltage L+ (without load) - Rated value DC 20.428.8 V Input voltage for signal "0" Input voltage for signal "1" DC 1528.8 V Input voltage hysteresis - Frequency range - Input resistance - Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 3 ms Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Current consumption/power loss	
Number of inputs 4 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage - Current consumption from load voltage L+ (without load) - Rated value DC 20.428.8 V Input voltage for signal "0" DC 05 V Input voltage for signal "1" DC 1528.8 V Input voltage hysteresis - Frequency range - Input resistance - Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 3 ms Input delay of "1" to "0" 3 ms Number of simultaneously utilizable inputs vertical configuration 4 Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Current consumption from backplane bus	65 mA
Number of inputs 4 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage - Current consumption from load voltage L+ (without load) - Rated value DC 20.428.8 V Input voltage for signal "0" DC 05 V Input voltage for signal "1" DC 1528.8 V Input voltage hysteresis - Frequency range - Input resistance - Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 3 ms Input delay of "0" to "0" 3 ms Number of simultaneously utilizable inputs vertical configuration 4 Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Power loss	0.6 W
Number of inputs 4 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage - Current consumption from load voltage L+ (without load) - Rated value DC 20.428.8 V Input voltage for signal "0" DC 05 V Input voltage for signal "1" DC 1528.8 V Input voltage hysteresis - Frequency range - Input resistance - Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 3 ms Input delay of "0" to "0" 3 ms Number of simultaneously utilizable inputs vertical configuration 4 Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit		
Cable length, shielded 1000 m Rated load voltage - Current consumption from load voltage L+ (without load) - Rated value DC 20.428.8 V Input voltage for signal "0" DC 1528.8 V Input voltage for signal "1" DC 1528.8 V Input voltage hysteresis - Frequency range - Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 3 ms Input delay of "0" to "0" 3 ms Number of simultaneously utilizable inputs horizontal configuration 4 Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Technical data digital inputs	
Cable length, unshielded 600 m Rated load voltage - Current consumption from load voltage L+ (without load) - Rated value DC 20.428.8 V Input voltage for signal "0" DC 05 V Input voltage for signal "1" DC 1528.8 V Input voltage hysteresis - Frequency range - Input resistance - Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 3 ms Input delay of "0" to "1" 3 ms Number of simultaneously utilizable inputs horizontal configuration 4 Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Number of inputs	4
Rated load voltage Current consumption from load voltage L+ (without load) Rated value DC 20.428.8 V Input voltage for signal "0" DC 05 V Input voltage for signal "1" DC 1528.8 V Input voltage hysteresis Frequency range Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 3 ms Input delay of "0" to "1" 3 ms Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Cable length, shielded	1000 m
Current consumption from load voltage L+ (without load) Rated value DC 20.428.8 V Input voltage for signal "0" DC 05 V Input voltage for signal "1" DC 1528.8 V Input voltage hysteresis - Frequency range - Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 3 ms Input delay of "1" to "0" 3 ms Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Cable length, unshielded	600 m
Rated value DC 20.428.8 V Input voltage for signal "0" DC 05 V Input voltage for signal "1" DC 1528.8 V Input voltage hysteresis - Frequency range - Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 3 ms Input delay of "1" to "0" 3 ms Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Rated load voltage	-
Input voltage for signal "0" DC 05 V Input voltage for signal "1" DC 1528.8 V Input voltage hysteresis - Frequency range - Input resistance - Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 3 ms Input delay of "1" to "0" 3 ms Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Current consumption from load voltage L+ (without load)	-
Input voltage for signal "1" DC 1528.8 V Input voltage hysteresis - Frequency range - Input resistance - Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 3 ms Input delay of "1" to "0" 3 ms Number of simultaneously utilizable inputs horizontal configuration 4 Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Rated value	DC 20.428.8 V
Input voltage hysteresis - Frequency range - Input resistance - Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 3 ms Input delay of "1" to "0" 3 ms Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Input voltage for signal "0"	DC 05 V
Frequency range - Input resistance - Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 3 ms Input delay of "1" to "0" 3 ms Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Input voltage for signal "1"	DC 1528.8 V
Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 3 ms Input delay of "1" to "0" 3 ms Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration 4 Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Input voltage hysteresis	-
Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 3 ms Input delay of "1" to "0" 3 ms Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration 4 Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Frequency range	-
Connection of Two-Wire-BEROs possible Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 3 ms Input delay of "1" to "0" 3 ms Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration 4 Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Input resistance	-
Max. permissible BERO quiescent current O.5 mA Input delay of "0" to "1" 3 ms Input delay of "1" to "0" 3 ms Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration 4 Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Input current for signal "1"	3 mA
Input delay of "0" to "1" 3 ms Input delay of "1" to "0" 3 ms Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Connection of Two-Wire-BEROs possible	yes
Input delay of "1" to "0" 3 ms Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration 4 Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Max. permissible BERO quiescent current	0.5 mA
Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Input delay of "0" to "1"	3 ms
Number of simultaneously utilizable inputs vertical configuration 4 Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit	Input delay of "1" to "0"	3 ms
Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Bit		4
Initial data size 4 Bit	Number of simultaneously utilizable inputs vertical configuration	4
	Input characteristic curve	IEC 61131-2, type 1
Status information, alarms, diagnostics	Initial data size	4 Bit
	Status information, alarms, diagnostics	
Status display green LED per channel	Status display	green LED per channel
Interrupts no	Interrupts	no
Process alarm no	Process alarm	no
Diagnostic interrupt no	Diagnostic interrupt	no
Diagnostic functions no	Diagnostic functions	no
Diagnostics information read-out none	Diagnostics information read-out	none
Module state green LED		green LED
Module error display red LED	Module error display	red LED



Channel error display	none	A YASKAWA COMPANY	
Isolation			
Between channels	-		
Between channels of groups to	-		
Between channels and backplane bus	yes		
Insulation tested with	DC 500 V		
Safety			
Safety protocol	-		
Safety requirements	-		
Secure user address	-		
Watchdog	-		
Two channels	-	-	
Test pulse outputs	-	-	
Datasizes			
Input bytes	1		
Output bytes	0		
Parameter bytes	0	0	
Diagnostic bytes	0		
Housing			
Material	PPE / PPE GF10	PPE / PPE GF10	
Mounting	Profile rail 35 mm	Profile rail 35 mm	
Mechanical data			
Dimensions (WxHxD)	12.9 mm x 109 mm x 70	12.9 mm x 109 mm x 76.5 mm	
Weight	60 g		
Environmental conditions			
Operating temperature	0 °C to 60 °C		
Storage temperature	-25 °C to 70 °C	-25 °C to 70 °C	
Certifications			
UL certification	yes		
KC certification	yes		