

Data sheet

SM 021 (021-1BF01)

Technical data

Type SM 021 Module ID 0013 9FC1 General Information Note	Order no.	021-1BF01
Seneral information Seneral information	Туре	SM 021
Note	Module ID	0013 9FC1
Note		
Features 8x DI DC 24 V DC 5 ms time delay Current consumption/power loss Current consumption from backplane bus 35 mA Power loss 0.9 W Technical data digital inputs Number of inputs 8 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 "1" DC 05 V Input voltage for signal "1" DC 1528.8 V Input voltage for signal "1" DC 1528.8 V Input voltage hysteresis Signal logic input Sinking input Frequency range Input capacitance Input capacitance Input carrent for signal "1" 3 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 0.5 mA Input delay of "1" to "0" max. 500 µs Input delay of "1" to "0" max. 500 µs Number of simultaneously utilizable inputs vertical configuration 8 Input characteristic curve IEC 61131-2, type 1 Initial data size 8 BR Status Information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic interrupt no Diagnostic interrupt no	General information	
Current consumption/power loss Current consumption from backplane bus 35 mA Power loss 0.9 W Technical data digital inputs Number of inputs 8 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 "1" DC 1528.8 V Input voltage for signal "1" DC 1528.8 V Input voltage for signal "1" DC 1528.8 V Input voltage hysteresis Signal logic input Sinking input Frequency range - Input capacitance - Input capacitance - Input capacitance - Input capacitance - Input delay of "0" to "1" max. 500 µs Input delay of "0" to "1" max. 500 µs Input delay of "0" to "1" max. 500 µs Input delay of "1" to "0" max. 500 µs Input characteristic curve IEC 61131-2, type 1 Initial data size 8 Bit Status liformation, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic interrupt no Diagnostic interrupt No D	Note	-
Current consumption from backplane bus 0.9 W Technical data digital inputs Number of inputs 8 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 for signal "1" DC 1528.8 V Input voltage hysteresis - Signal logic input Sinking input Frequency range - Input resistance - Input capratance - Input capratance - Input capratance - Input capratised BERO quiescent current 0.5 mA Input delay of "0" to "1" max. 500 µs Input delay of "0" to "1" max. 500 µs Input delay of "0" is milltaneously utilizable inputs horizontal configuration 8 Input characteristic curve IEC 61131-2, type 1 Initial data size 8 Bit Status display green LED per channel Interrupts no Diagnostic functions no	Features	DC 24 V
Power loss 0.9 W Technical data digital inputs Number of inputs 8 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 11" DC 1528.8 V Input voltage hysteresis Signal logic input Sinking input Frequency range Input resistance 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" max. 500 µs Input delay of "1" to "0" max. 500 µs Input delay of "1" to "0" max. 500 µs Number of simultaneously utilizable inputs horizontal configuration 8 Input characteristic curve IEC 61131-2, type 1 Initial data size 8 Bit Status display green LED per channel Interrupts no Diagnostic functions no	Current consumption/power loss	
Number of inputs 8 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 *10* DC 05 V Input voltage for signal *14* DC 1528.8 V Input voltage for signal *14* DC 1528.8 V Input voltage hysteresis - Signal logic input Sinking input Frequency range - Input capacitance - Input capacitance - Input current for signal *11* 3 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 0.5 mA Input delay of *10* to *14* max. 500 µs Input delay of *10* to *14* max. 500 µs Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration 8 Input characteristic curve IEC 61131-2, type 1 Initial data size 8 Bit Status display green LED per channel Interrupts no Diagnostic functions no	Current consumption from backplane bus	35 mA
Number of inputs 8 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 - Signal logic input Sinking input Frequency range - Input resistance - Input capacitance - Input capacitance - 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" max. 500 µs Input delay of "1" to "0" max. 500 µs Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration 8 Input characteristic curve IEC 61131-2, type 1 Initial data size 8 Bit Status display green LED per channel Interrupts no Diagnostic functions no	Power loss	0.9 W
Number of inputs 8 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 - Signal logic input Sinking input Frequency range - Input resistance - Input capacitance - Input capacitance - 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" max. 500 µs Input delay of "1" to "0" max. 500 µs Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration 8 Input characteristic curve IEC 61131-2, type 1 Initial data size 8 Bit Status display green LED per channel Interrupts no Diagnostic functions no		
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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 Signal logic input Sinking input Frequency range - Input resistance Input capacitance Input capacitance Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible Max. permissible BERO quiescent current Input delay of "0" to "1" max. 500 µs Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Residual asize 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic functions	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 - Signal logic input Sinking input Frequency range - Input resistance - Input capacitance - 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" max. 500 µs Input delay of "1" to "0" max. 500 µs Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Input data size B Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic interrupt no	Cable length, unshielded	600 m
Rated value DC 20.428.8 V Input voltage for signal *10" DC 05 V Input voltage for signal *1" DC 1528.8 V Input voltage hysteresis - Signal logic input Sinking input Frequency range - Input resistance - Input capacitance - Input capacitance - 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" max. 500 μs Input delay of *1" to *0" max. 500 μs Number of simultaneously utilizable inputs horizontal configuration 8 Input characteristic curve IEC 61131-2, type 1 Initial data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic interrupt no	Rated load voltage	-
Input voltage for signal *0* DC 05 V Input voltage for signal *1* DC 1528.8 V Input voltage hysteresis - Signal logic input Sinking input Frequency range - Input resistance - Input capacitance - 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* max. 500 μs Input delay of *0* to *1* o" max. 500 μs Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no	Current consumption from load voltage L+ (without load)	-
Input voltage for signal "1" DC 1528.8 V Input voltage hysteresis - Signal logic input Sinking input Frequency range - Input resistance - Input capacitance - Input capacitance - Input connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" max. 500 µs Input delay of "0" to "0" to "1" max. 500 µs 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 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic functions	Rated value	DC 20.428.8 V
Input voltage hysteresis Signal logic input Sinking input Frequency range Input resistance Input capacitance Input capacitance 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" max. 500 µs Input delay of "1" to "0" max. 500 µs Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration 8 Input characteristic curve IEC 61131-2, type 1 Initial data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions	Input voltage for signal "0"	DC 05 V
Signal logic input Frequency range Input resistance Input capacitance Input capacitance 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" max. 500 µs Input delay of "1" to "0" max. 500 µs Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Recompany of the simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions	Input voltage for signal "1"	DC 1528.8 V
Frequency range Input resistance Input capacitance Input capacitance 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" max. 500 µs Input delay of "1" to "0" max. 500 µs Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration 8 Input characteristic curve IEC 61131-2, type 1 Initial data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions	Input voltage hysteresis	-
Input resistance Input capacitance 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" max. 500 μs Input delay of "1" to "0" max. 500 μs Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration 8 Input characteristic curve IEC 61131-2, type 1 Initial data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions	Signal logic input	Sinking input
Input capacitance - 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" max. 500 μs Input delay of "1" to "0" max. 500 μs Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration 8 Input characteristic curve IEC 61131-2, type 1 Initial data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no	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" max. 500 µs Input delay of "1" to "0" max. 500 µs Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Rumber of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions	Input resistance	-
Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" max. 500 µs Input delay of "1" to "0" max. 500 µs Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions no	Input capacitance	-
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Input delay of "0" to "1" max. 500 μs Input delay of "1" to "0" max. 500 μs Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration 8 Input characteristic curve IEC 61131-2, type 1 Initial data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions no	Connection of Two-Wire-BEROs possible	yes
Input delay of "1" to "0" max. 500 μs 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 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions	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 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions no	Input delay of "0" to "1"	max. 500 µs
Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions no	Input delay of "1" to "0"	max. 500 µs
Input characteristic curve IEC 61131-2, type 1 Initial data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions IEC 61131-2, type 1 8 Bit no green LED per channel no		8
Initial data size 8 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions no	Number of simultaneously utilizable inputs vertical configuration	8
Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions no	Input characteristic curve	IEC 61131-2, type 1
Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions no	Initial data size	8 Bit
Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions no	Status information, alarms, diagnostics	
Process alarm no Diagnostic interrupt no Diagnostic functions no	Status display	green LED per channel
Diagnostic interrupt no Diagnostic functions no	Interrupts	no
Diagnostic functions no	Process alarm	no
	Diagnostic interrupt	no
Diagnostics information read-out	Diagnostic functions	no
Diagnostios information reactors 11016	Diagnostics information read-out	none

YASKAWA VIPA CONTROLS

Module state	green LED	
Module 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	
Safety		
Safety protocol	-	
Safety requirements	-	
Secure user address	-	
Watchdog	-	
Two channels	-	
Test pulse outputs	-	
Datasizes		
Input bytes	1	
Output bytes	0	
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	57 g	
Weight including accessories	57 g	
Gross weight	71 g	
Environmental conditions		
Operating temperature	0 °C to 60 °C	
Storage temperature	-25 °C to 70 °C	
Certifications		
UL certification	yes	
KC certification	yes	