

## Data sheet

SM 321 (321-1FH00)

## Technical data

Type         SM 321           General Information           Note         -           Features         16 inputs, in groups of 4 Ac 120/230 V           SPEED-Bus           Current consumption/power loss           Current consumption from backplane bus         35 mA           Power loss         5 W           Technical data digital inputs           Number of inputs           16           Cabble length, shielded         16           Cabble length, unshielded         600 m           Cabble length, unshielded         600 m           Carrent consumption from load voltage L+ (without load)         -           Carrent consumption from load voltage L+ (without load)         -           Current consumption from load voltage L+ (without load)         -           AC 120/230 V           Current consumption from load voltage L+ (without load)         -           Current consumption from load voltage L+ (without load)         -           AC 120/230 V           Current consumption from load voltage L+ (without load)         -           Carrent consumption from load voltage L+ (without load)	Order no.	321-1FH00
Note         15 inputs, in groups of 4 AC 120/230 V           SPEED-Bus         -           Current consumption/power loss           Current consumption from backplane bus         35 mA           Power loss         5 W           Technical data digital inputs           Number of inputs         16           Cable length, shielded         1000 m           Cable length, shielded         600 m           Cable length, unshielded         AC 120/230 V           Current consumption from load voltage L+ (without load)         -           Rated value         AC 120/230 V           Input voltage for signal '0'         AC 040 V           Input voltage for signal '1'         AC 7624 V           Input voltage for signal '1'         AC 7624 V           Input voltage for signal '1'         7 mA           Input resistance         -           Input voltage for signal '1'         7 mA           Connection of Two-Wire-BEROs possible         Image: Signal '1'           Max. permissible BERO quiescent current         1.5 mA           Input delay of '1' to '0'         25 ms           Number of simultaneously utilizable inputs horizontal configuration         16           Input characteristic curve         -	Туре	SM 321
Note         15 inputs, in groups of 4 AC 120/230 V           SPEED-Bus         -           Current consumption/power loss           Current consumption from backplane bus         35 mA           Power loss         5 W           Technical data digital inputs           Number of inputs         16           Cable length, shielded         1000 m           Cable length, shielded         600 m           Cable length, unshielded         AC 120/230 V           Current consumption from load voltage L+ (without load)         -           Rated value         AC 120/230 V           Input voltage for signal '0'         AC 040 V           Input voltage for signal '1'         AC 7624 V           Input voltage for signal '1'         AC 7624 V           Input voltage for signal '1'         7 mA           Input resistance         -           Input voltage for signal '1'         7 mA           Connection of Two-Wire-BEROs possible         Image: Signal '1'           Max. permissible BERO quiescent current         1.5 mA           Input delay of '1' to '0'         25 ms           Number of simultaneously utilizable inputs horizontal configuration         16           Input characteristic curve         -	General information	
Features 16 inputs, in groups of 4 AC 120/230 V  Current consumption/power loss  Current consumption from backplane bus 35 mA  Power loss 5W  Technical data digital inputs  Number of inputs 16 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage AC 120/230 V  Current consumption from load voltage L+ (without load) - Rated value AC 120/230 V  Current consumption from load voltage L+ (without load) - Input voltage for signal "1" AC 79264 V  Input voltage for signal "1" AC 79264 V  Input voltage hysteresis - Frequency range 4763 H2 Input current for signal "1" T mA  Connection of Two-Wire-BEROs possible   Max. permissible BERO quiescent current 1.5 mA  Input delay of "0" to "1" 25 ms  Number of simultaneously utilizable inputs horizontal configuration 16  Input characteristic curve - Initial data size 2 Byte  Status display green LED per channel Interrupts no Diagnostic interrupt no no Diagnostic interrupt no none		
SPEED-Bus   -		
Current consumption/power loss Current consumption from backplane bus 35 mA Power loss 5W  Technical data digital inputs  Number of inputs 16 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage AC 120/230 V Current consumption from load voltage L+ (without load) - Rated value AC 120/230 V Input voltage for signal "0" AC 040 V Input voltage for signal "1" AC 79264 V Input voltage for signal "1" AC 79264 V Input voltage for signal "1" T		
Current consumption from backplane bus 5 W  Technical data digital inputs  Number of inputs 16 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage AC 120/230 V  Current consumption from load voltage L+ (without load) - Rated value AC 120/230 V  Input voltage for signal "0" AC 040 V  Input voltage for signal "1" AC 79264 V  Input voltage for signal "1" AC 79264 V  Input voltage hysteresis - Frequency range 4763 Hz  Input resistance - Input current for signal "1" 7 mA  Connection of Two-Wire-BEROs possible   Max. permissible BERO quiescent current 1.5 mA  Input delay of "0" to "1" 25 ms  Input delay of "0" to "1" 25 ms  Input delay of "1" to "0" 25 ms  Number of simultaneously utilizable inputs horizontal configuration 16  Number of simultaneously utilizable inputs vertical configuration 16  Status information, alarms, diagnostics  Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no no Process alarm no Diagnostics information read-out none	SPEED-Bus	·
Power loss 5 W  Technical data digital inputs  Number of inputs 16 Cable length, shielded 1000 m  Cable length, unshielded 600 m  Rated load voltage AC 120/230 V  Current consumption from load voltage L+ (without load) - Rated value AC 120/230 V  Input voltage for signal "0" AC 040 V  Input voltage for signal "1" AC 79264 V  Input voltage for signal "1" AC 79264 V  Input voltage hysteresis - Frequency range 4763 Hz  Input resistance - Input current for signal "1" 7 mA  Connection of Two-Wire-BEROs possible   Max. permissible BERO quiescent current 1.5 mA  Input delay of "0" to "1" 25 ms  Input delay of "1" to "0" 25 ms  Number of simultaneously utilizable inputs horizontal configuration 16  Input characteristic curve - Initial data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts no Diagnostic functions no no e	Current consumption/power loss	
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Number of inputs 16 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage AC 120/230 V Current consumption from load voltage L+ (without load) - Rated value AC 120/230 V Input voltage for signal "0" AC 040 V Input voltage for signal "1" AC 79264 V Input voltage for signal "1" AC 79264 V Input voltage frysteresis - Frequency range 4763 Hz Input current for signal "1" 7 mA Connection of Two-Wire-BEROs possible ✔ Max. permissible BERO quiescent current 1.5 mA Input delay of "0" to "1" 25 ms Input delay of "0" to "1" 25 ms Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Input characteristic curve - Initial data size 2 Byte  Status information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic functions no Diagnostics information read-out none	Power loss	5 W
Cable length, shielded 600 m  Rated load voltage AC 120/230 V  Current consumption from load voltage L+ (without load) - Rated value AC 120/230 V  Input voltage for signal *0" AC 040 V  Input voltage for signal *1" AC 79264 V  Input voltage for signal *1" AC 79264 V  Input voltage hysteresis - Frequency range 4763 Hz  Input resistance - Input resistance input current for signal *1" 7 mA  Connection of Two-Wire-BEROs possible   Max. permissible BERO quiescent current 1.5 mA  Input delay of *0" to "1" 25 ms  Input delay of *1" to "0" 25 ms  Number of simultaneously utilizable inputs horizontal configuration 16  Input characteristic curve - Initial data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts no no  Diagnostic functions no no  Diagnostics information read-out none	Technical data digital inputs	
Cable length, unshielded 600 m  Rated load voltage AC 120/230 V  Current consumption from load voltage L+ (without load) -  Rated value AC 120/230 V  Input voltage for signal "0" AC 040 V  Input voltage for signal "1" AC 79264 V  Input voltage hysteresis -  Frequency range 4763 Hz  Input resistance Input current for signal "1" 7 mA  Connection of Two-Wire-BEROs possible   Max. permissible BERO quiescent current 1.5 mA  Input delay of "0" to "1" 25 ms  Input delay of "1" to "0" 25 ms  Number of simultaneously utilizable inputs horizontal configuration 16  Input characteristic curve -  Initial data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts no no  Process alarm no  Diagnostic functions no no	Number of inputs	16
Rated load voltage  Current consumption from load voltage L+ (without load)  Rated value  AC 120/230 V  Input voltage for signal "0" AC 040 V  Input voltage for signal "1" AC 79264 V  Input voltage hysteresis  Frequency range 4763 Hz  Input current for signal "1" 7 mA  Connection of Two-Wire-BEROs possible Max. permissible BERO quiescent current 1.5 mA  Input delay of "0" to "1" 25 ms  Input delay of "1" to "0" 25 ms  Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration  Input characteristic curve - Initial data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts no  Process alarm no  Diagnostic functions no  Diagnostics information read-out	Cable length, shielded	1000 m
Current consumption from load voltage L+ (without load)  Rated value  AC 120/230 V  Input voltage for signal "0"  AC 040 V  Input voltage for signal "1"  AC 79264 V  Input voltage hysteresis  - Frequency range  4763 Hz  Input current for signal "1"  7 mA  Connection of Two-Wire-BEROs possible  Max. permissible BERO quiescent current  1.5 mA  Input delay of "0" to "1"  25 ms  Input delay of "1" to "0"  25 ms  Number of simultaneously utilizable inputs horizontal configuration  Number of simultaneously utilizable inputs vertical configuration  Input characteristic curve  - Initial data size  2 Byte  Status display  green LED per channel  Interrupts  no  Process alarm  no  Diagnostic interrupt  no  Diagnostics information read-out	Cable length, unshielded	600 m
Rated value AC 120/230 V  Input voltage for signal "0" AC 040 V  Input voltage for signal "1" AC 79264 V  Input voltage hysteresis -  Frequency range 4763 Hz  Input resistance -  Input current for signal "1" 7 mA  Connection of Two-Wire-BEROs possible   Max. permissible BERO quiescent current 1.5 mA  Input delay of "0" to "1" 25 ms  Input delay of "1" to "0" 25 ms  Number of simultaneously utilizable inputs horizontal configuration 16  Input characteristic curve -  Initial data size 2 Byte  Status display green LED per channel  Interrupts no  Process alarm no  Diagnostic interrupt no  Diagnostics information read-out none	Rated load voltage	AC 120/230 V
Input voltage for signal "10" AC 040 V Input voltage for signal "1" AC 79264 V Input voltage hysteresis - Frequency range 4763 Hz Input resistance - Input current for signal "1" 7 mA Connection of Two-Wire-BEROs possible   Max. permissible BERO quiescent current 1.5 mA Input delay of "0" to "1" 25 ms Input delay of "1" to "0" 25 ms Number of simultaneously utilizable inputs horizontal configuration 16 Input characteristic curve - Initial data size 2 Byte  Status information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic functions no Diagnostic functions no Diagnostics information read-out none	Current consumption from load voltage L+ (without load)	-
Input voltage for signal "1" AC 79264 ∨ Input voltage hysteresis - Frequency range 4763 Hz Input resistance - Input current for signal "1" 7 mA  Connection of Two-Wire-BEROs possible   Max. permissible BERO quiescent current 1.5 mA Input delay of "0" to "1" 25 ms Input delay of "1" to "0" 25 ms Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Input characteristic curve - Initial data size 2 Byte  Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic functions no Diagnostic functions no Diagnostic functions none	Rated value	AC 120/230 V
Input voltage hysteresis  Frequency range  4763 Hz  Input resistance  - Input current for signal "1"  7 mA  Connection of Two-Wire-BEROs possible  Max. permissible BERO quiescent current  1.5 mA  Input delay of "0" to "1"  25 ms  Input delay of "1" to "0"  25 ms  Number of simultaneously utilizable inputs horizontal configuration  Number of simultaneously utilizable inputs vertical configuration  Input characteristic curve  - Initial data size  2 Byte  Status information, alarms, diagnostics  Status display  green LED per channel  Interrupts  no  Process alarm  no  Diagnostic functions  no  Diagnostic functions  no  Diagnostics information read-out  none	Input voltage for signal "0"	AC 040 V
Frequency range 4763 Hz  Input resistance - Input current for signal "1" 7 mA  Connection of Two-Wire-BEROs possible   Max. permissible BERO quiescent current 1.5 mA  Input delay of "0" to "1" 25 ms  Input delay of "1" to "0" 25 ms  Number of simultaneously utilizable inputs horizontal configuration 16  Input characteristic curve - Initial data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts no  Process alarm no  Diagnostic interrupt no  Diagnostic functions no  Diagnostics information read-out none	Input voltage for signal "1"	AC 79264 V
Input current for signal "1" 7 mA  Connection of Two-Wire-BEROs possible  Max. permissible BERO quiescent current 1.5 mA  Input delay of "0" to "4" 25 ms  Input delay of "1" to "0" 25 ms  Number of simultaneously utilizable inputs horizontal configuration  Number of simultaneously utilizable inputs vertical configuration  Number of simultaneously utilizable inputs vertical configuration  Input characteristic curve  Initial data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel  Interrupts no  Process alarm no  Diagnostic interrupt no  Diagnostic functions no  Diagnostics information read-out none	Input voltage hysteresis	-
Input current for signal "1" 7 mA  Connection of Two-Wire-BEROs possible  Max. permissible BERO quiescent current  1.5 mA  Input delay of "0" to "1"  25 ms  Input delay of "1" to "0"  25 ms  Number of simultaneously utilizable inputs horizontal configuration  Number of simultaneously utilizable inputs vertical configuration  Number of simultaneously utilizable inputs vertical configuration  Input characteristic curve  - Initial data size  2 Byte  Status information, alarms, diagnostics  Status display  green LED per channel  Interrupts  no  Process alarm  no  Diagnostic interrupt  no  Diagnostic functions  no  Diagnostics information read-out  none	Frequency range	4763 Hz
Connection of Two-Wire-BEROs possible ✓   Max. permissible BERO quiescent current 1.5 mA   Input delay of "0" to "1" 25 ms   Input delay of "1" to "0" 25 ms   Number of simultaneously utilizable inputs horizontal configuration 16   Number of simultaneously utilizable inputs vertical configuration 16   Input characteristic curve -   Initial data size 2 Byte   Status information, alarms, diagnostics   Status display green LED per channel   Interrupts no   Process alarm no   Diagnostic interrupt no   Diagnostic functions no   Diagnostics information read-out none	Input resistance	-
Max. permissible BERO quiescent current  Input delay of "0" to "1"  25 ms  Input delay of "1" to "0"  25 ms  Number of simultaneously utilizable inputs horizontal configuration  Number of simultaneously utilizable inputs vertical configuration  Input characteristic curve  Initial data size  2 Byte  Status information, alarms, diagnostics  Status display  green LED per channel  Interrupts  no  Process alarm  no  Diagnostic interrupt  no  Diagnostic functions  no  Diagnostics information read-out  none	Input current for signal "1"	7 mA
Input delay of "0" to "1"  25 ms  Input delay of "1" to "0"  25 ms  Number of simultaneously utilizable inputs horizontal configuration  Number of simultaneously utilizable inputs vertical configuration  Input characteristic curve  Initial data size  2 Byte  Status information, alarms, diagnostics  Status display  green LED per channel  Interrupts  no  Process alarm  no  Diagnostic interrupt  no  Diagnostics information read-out  none	Connection of Two-Wire-BEROs possible	<b>₹</b>
Input delay of "1" to "0"  Number of simultaneously utilizable inputs horizontal configuration  Number of simultaneously utilizable inputs vertical configuration  Input characteristic curve  Initial data size  Status information, alarms, diagnostics  Status display  green LED per channel  Interrupts  no  Process alarm  no  Diagnostic interrupt  no  Diagnostic functions  no  Diagnostics information read-out  none	Max. permissible BERO quiescent current	1.5 mA
Number of simultaneously utilizable inputs horizontal configuration  Number of simultaneously utilizable inputs vertical configuration  Input characteristic curve  Initial data size  Status information, alarms, diagnostics  Status display  green LED per channel  Interrupts  no  Process alarm  no  Diagnostic interrupt  no  Diagnostic functions  Diagnostics information read-out  none	Input delay of "0" to "1"	25 ms
Number of simultaneously utilizable inputs vertical configuration Input characteristic curve - Initial data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions no Diagnostics information read-out none	Input delay of "1" to "0"	25 ms
Input characteristic curve Initial data size  Status information, alarms, diagnostics  Status display  green LED per channel Interrupts  no  Process alarm  no  Diagnostic interrupt  no  Diagnostic functions  no  Diagnostics information read-out  none		16
Initial data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts no  Process alarm no Diagnostic interrupt no Diagnostic functions no Diagnostics information read-out none	Number of simultaneously utilizable inputs vertical configuration	16
Status information, alarms, diagnostics  Status display green LED per channel Interrupts no  Process alarm no  Diagnostic interrupt no  Diagnostic functions no  Diagnostics information read-out none	Input characteristic curve	
Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions no Diagnostics information read-out none	Initial data size	2 Byte
Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions no Diagnostics information read-out none	Status information, alarms, diagnostics	
Process alarm no Diagnostic interrupt no Diagnostic functions no Diagnostics information read-out none	Status display	green LED per channel
Diagnostic interrupt     no       Diagnostic functions     no       Diagnostics information read-out     none	Interrupts	no
Diagnostic functions     no       Diagnostics information read-out     none	Process alarm	no
Diagnostics information read-out none	Diagnostic interrupt	no
	Diagnostic functions	no
Supply voltage display none	Diagnostics information read-out	none
	Supply voltage display	none



Group error display	none	A YASKAWA COMPANY	
Channel error display	none		
Isolation			
Between channels	✓		
Between channels of groups to	4		
Between channels and backplane bus	✓		
Insulation tested with	DC 4000 V		
Datasizes			
Input bytes	2	2	
Output bytes	0		
Parameter bytes	0		
Diagnostic bytes	0		
Housing			
Material	PPE		
Mounting	Rail System 300		
Mechanical data			
Dimensions (WxHxD)	40 mm x 125 mm x 120 mm		
Weight	240 g		
Environmental conditions			
Operating temperature	0 °C to 60 °C	0 °C to 60 °C	
Storage temperature	-25 °C to 70 °C		
Certifications			
UL508 certification	yes		