

Data sheet

SM 321 (321-1BH01)

Technical data

Type	Order no.	321-1BH01
Note	Туре	SM 321
Note		
Features 16x DI DC 24 V POF 20 pole front connector SPEED-Bus		
DC 24 V For 20 pole front connector		
Current consumption/power loss Current consumption from backplane bus Some some some some some some some some s	Features	DC 24 V
Current consumption from backplane bus 25 mA Power loss 3.5 W Technical data digital inputs Number of inputs 16 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 current for signal "1" 7 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 1.5 mA Input delay of "0" to "1" 3 ms Input delay of "0" to "1" 3 ms Input delay of "0" a "1" 3 ms Number of simultaneously utilizable inputs horizontal configuration 16 Input characteristic curve IEC 61131-2, type 1 Initial data size 2 Byte Status display green LED per channel Interrupts no Diagnostic functions no	SPEED-Bus	-
Power loss 3.5 W Technical data digital inputs Number of inputs 16 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage - Current consumption from load voltage L+ (without load) - Rated value DC 20.5 V Input voltage for signal "0" 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 current for signal "1" 7 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 1.5 mA Input delay of "0" to "1" 3 ms Input delay of "1" to "0" 3 ms Number of simultaneously utilizable inputs vertical configuration 16 Input characteristic curve IEC 61131-2, type 1 Initial data size 2 Byte Status display green LED per channel Interrupts no Diagnostic functions no	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 - 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 - Signal logic input Sinking input Frequency range - Input current for signal "1" 7 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 1.5 mA Input delay of "0" to "1" 3 ms Input delay of "0" to "1" 3 ms Number of simultaneously utilizable inputs horizontal 16 Input of simultaneously utilizable inputs vertical configuration 16 Input characteristic curve IEC 61131-2, type 1 Initial data size 2 Byte Status information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic functions	Power loss	3.5 W
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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 - Signal logic input Sinking input Frequency range - Input resistance - Input current for signal "1" 7 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 1.5 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 2 Byte Status Information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic interrupt	Number of inputs	16
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 Signal logic input Sinking input Frequency range 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" 3 ms Input delay of "1" to "0" 3 ms Number of simultaneously utilizable inputs horizontal configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 2 Byte Status information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic interrupt 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 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" 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 2 Byte Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions	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 - Signal logic input Sinking input Frequency range - Input resistance - Input current for signal "1" 7 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 1.5 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 2 Byte Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic functions	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 current for signal "1" 7 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 1.5 mA Input delay of "0" to "1" 3 ms Input delay of "0" to "1" 10" 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 2 Byte Status information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic functions	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 current for signal "1" 7 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 1.5 mA Input delay of "0" to "1" 3 ms Input delay of "0" to "1" to "0" 3 ms Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration 16 Input characteristic curve IEC 61131-2, type 1 Initial data size 2 Byte Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic functions no	Rated value	DC 20.428.8 V
Input voltage hysteresis Signal logic input Sinking input Frequency range - Input resistance - Input current for signal "1" 7 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 1.5 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 2 Byte Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic functions no	Input voltage for signal "0"	DC 05 V
Signal logic input Frequency range 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" 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 2 Byte Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic functions no	Input voltage for signal "1"	DC 1528.8 V
Frequency range Input resistance Input current for signal "1" 7 mA Connection of Two-Wire-BEROs possible Max. permissible BERO quiescent current 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 2 Byte Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions	Input voltage hysteresis	-
Input current for signal "1" 7 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 1.5 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 2 Byte 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 current for signal "1" 7 mA Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 1.5 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 16 Input characteristic curve IEC 61131-2, type 1 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	Frequency range	-
Connection of Two-Wire-BEROs possible yes Max. permissible BERO quiescent current 1.5 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 Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 2 Byte Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no	Input resistance	-
Max. permissible BERO quiescent current Input delay of "0" to "1" Input delay of "1" to "0" Input delay of "1" to "0" 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 2 Byte Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions	Input current for signal "1"	7 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 2 Byte 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" 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 2 Byte Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions no	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 IEC 61131-2, type 1 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 16	Input delay of "0" to "1"	3 ms
Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 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	Input delay of "1" to "0"	3 ms
Input characteristic curve IEC 61131-2, type 1 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		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	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	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	2 Byte
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 none	Diagnostic functions	no
	Diagnostics information read-out	none
Supply voltage display none	Supply voltage display	none

YASKAWA VIPA CONTROLS

Between channels - Between channels of groups to 16 Between channels and backplane bus yes Insulation tested with DC 500 V Datasizes Input bytes 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 Net weight 220 g Weight including accessories - Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications	Group error display	none
Between channels - Between channels of groups to 16 Between channels and backplane bus yes Insulation tested with DC 500 V Datasizes Input bytes 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 Net weight 220 g Weight including accessories - Gross weight - Environmental conditions 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Channel error display	none
Between channels of groups to Between channels and backplane bus Insulation tested with DC 500 V Datasizes Input bytes 2 Output bytes 0 Parameter bytes 0 Diagnostic bytes 0 Housing Material PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) Net weight 220 g Weight including accessories Gross weight Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Isolation	
Between channels and backplane bus Insulation tested with DC 500 V Datasizes Input bytes 2 Output bytes 0 Parameter bytes 0 Diagnostic bytes 0 Housing Material PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) Net weight 220 g Weight including accessories Gross weight Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certifications VSC 10 00 V 2 Q C 10 00 V O V A O M M X 125 M M X 120 M M M M M X 125 M M X 120 M M M M M M M M M M M M M M M M M M M	Between channels	
Insulation tested with DC 500 V Datasizes Input bytes 2 Output bytes 0 Parameter bytes 0 Diagnostic bytes 0 Housing Material PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) A 0 mm x 125 mm x 120 mm Net weight 220 g Weight including accessories Gross weight Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Between channels of groups to	16
Datasizes Input bytes 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 Net weight 220 g Weight including accessories - Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Between channels and backplane bus	yes
Input bytes Output bytes Out	Insulation tested with	DC 500 V
Output bytes 0 Parameter bytes 0 Diagnostic bytes 0 Housing PPE Mounting Rail System 300 Mechanical data Vechanical data Dimensions (WxHxD) 40 mm x 125 mm x 120 mm Net weight 220 g Weight including accessories - Gross weight - Environmental conditions O°C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification UL certification yes	Datasizes	
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 Net weight 220 g Weight including accessories - Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Input bytes	2
Diagnostic bytes Housing Material PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) 40 mm x 125 mm x 120 mm Net weight 220 g Weight including accessories - Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Output bytes	0
Material PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) 40 mm x 125 mm x 120 mm Net weight 220 g Weight including accessories - Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Parameter bytes	0
Material PPE Mounting Rail System 300 Mechanical data Dimensions (WxHxD) 40 mm x 125 mm x 120 mm Net weight 220 g Weight including accessories - Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Diagnostic bytes	0
Mounting Rail System 300 Mechanical data Dimensions (WxHxD) 40 mm x 125 mm x 120 mm Net weight 220 g Weight including accessories - Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Housing	
Mechanical data Dimensions (WxHxD) 40 mm x 125 mm x 120 mm Net weight 220 g Weight including accessories - Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Material	PPE
Dimensions (WxHxD) 40 mm x 125 mm x 120 mm Net weight 220 g Weight including accessories - Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Mounting	Rail System 300
Net weight Weight including accessories Gross weight Environmental conditions Operating temperature O °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Mechanical data	
Weight including accessories Gross weight Environmental conditions Operating temperature O °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Dimensions (WxHxD)	40 mm x 125 mm x 120 mm
Gross weight - Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Net weight	220 g
Environmental conditions Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Weight including accessories	-
Operating temperature 0 °C to 60 °C Storage temperature -25 °C to 70 °C Certifications UL certification yes	Gross weight	-
Storage temperature -25 °C to 70 °C Certifications UL certification yes	Environmental conditions	
Certifications UL certification yes	Operating temperature	0 °C to 60 °C
UL certification yes	Storage temperature	-25 °C to 70 °C
	Certifications	
KC certification yes	UL certification	yes
	KC certification	yes