

## Data sheet

SM 221 (221-2BL10)

## Technical data

Type SM 221  General Information  Note - Features 32 inputs  Current consumption/power loss  Current consumption from backplane bus 40 mA Power loss 6.5 W  Technical data digital inputs  Number of inputs 32 Cable length, shielded 1000 m Cable length, shielded 600 m Rated load voltage length, shielded 600 m Rated load voltage in puts 600 m Rated voltage for signal "0" DC 05 V Input voltage for signal "1" DC 1528.8 V Input voltage for signal "1" DC 15	Order no.	221-2BL10
Note	Туре	SM 221
Note		
Features 32 inputs  Current consumption/power loss  Current consumption from backplane bus 40 mA  Power loss 6.5 W  Technical data digital inputs  Number of inputs 32  Cable length, shielded 1000 m  Cable length, shielded 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 1528.8V  Input voltage hysteresis -  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 "1" to "0" 3 ms  Number of simultaneously utilizable inputs horizontal configuration  Number of simultaneously utilizable inputs vertical configuration  Process alarm no  Diagnostic interrupt no  Diagnostic interrupt no  Diagnostic interrupt no  Diagnostic information read-out none  Supply voltage display none  Group error display		
Current consumption/power loss Current consumption from backplane bus 40 mA Power loss 6.5 W  Technical data digital inputs  Number of inputs 32 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 for signal "1" TMA 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 vertical configuration 16 Input characteristic curve Indicate Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic interrupt none Supply voltage display none Group error display none	Note	
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Number of inputs 32 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 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 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 "1" 5 mA Input delay of "1" 15 mA Input delay of "10 multipaneously utilizable inputs horizontal configuration 16 Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic interrupt no Diagnostic interrupt no Diagnostic interrupt none Diagnostic interrupt none Gupply voltage display none Group error display none	Current consumption from backplane bus	40 mA
Number of inputs 32 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 systeresis - 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 Input delay of "1" to "0" 3 ms Vumber of simultaneously utilizable inputs horizontal configuration 16 Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Byte  Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostics interrupt no Diagnostics information read-out none Supply voltage display none Group error display none	Power loss	6.5 W
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 *11° DC 1528.8 V  Input voltage hysteresis -  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  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 Byte  Status display green LED per channel  Interrupts no  Diagnostic interrupt no  Diagnostic interrupt no  Diagnostic information read-out none  Supply voltage display none	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 for signal "1" DC 1528.8 V Input voltage hysteresis - 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 "1" to "0" 3 ms Number of simultaneously utilizable inputs horizontal configuration 16 Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Byte  Status information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic functions no Diagnostics information read-out none Supply voltage display none Group error display none	Number of inputs	32
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" 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 16 Input characteristic curve IEC 61131-2, type 1 Initial data size 4 Byte  Status information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic interrupt no Diagnostics information read-out none Supply voltage display none Group error display none	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 1528.8 V  Input voltage for signal *1"  DC 1528.8 V  Input voltage hysteresis	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 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 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 Byte  Status information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic interrupt no Diagnostic information read-out none Supply voltage display none	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* 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 4 Byte  Status information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic functions no Diagnostics information read-out none Supply voltage display none Group error display	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" 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 4 Byte  Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions no Diagnostic functions no Diagnostics information read-out none Supply voltage display none Group error display none	Rated value	DC 20.428.8 V
Input voltage hysteresis - 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 4 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic interrupt no Diagnostic functions no Diagnostic information read-out none Supply voltage display none Group error display none	Input voltage for signal "0"	DC 05 V
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 16  Input characteristic curve IEC 61131-2, type 1  Initial data size 4 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  Supply voltage display none  Group error display none	Input voltage for signal "1"	DC 1528.8 V
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 16  Input characteristic curve IEC 61131-2, type 1  Initial data size 4 Byte  Status information, alarms, diagnostics  Status display green LED per channel  Interrupts no  Process alarm no  Diagnostic interrupt no  Diagnostic functions no  Diagnostic functions no  Diagnostics information read-out none  Supply voltage display none  Group error display none	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 16  Number of simultaneously utilizable inputs vertical configuration 16  Input characteristic curve IEC 61131-2, type 1  Initial data size 4 Byte  Status information, alarms, diagnostics  Status display green LED per channel  Interrupts no  Process alarm no  Diagnostic interrupt no  Diagnostic functions no  Diagnostic functions no  Diagnostics information read-out none  Supply voltage display none  Group error display none	Frequency range	-
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Max. permissible BERO quiescent current  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 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  Supply voltage display  none  Group error display  none	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 4 Byte  Status information, alarms, diagnostics  Status display green LED per channel  Interrupts no  Process alarm no  Diagnostic interrupt no  Diagnostic interrupt no  Diagnostic functions no  Diagnostics information read-out none  Supply voltage display none  Group error display none	Connection of Two-Wire-BEROs possible	yes
Input delay of "1" to "0"  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 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  Supply voltage display  green LED per channel  none  Group error display  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  IEC 61131-2, type 1  Initial data size  4 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  Supply voltage display  none  Group error display  none	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  4 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  Supply voltage display  none  Group error display  none	Input delay of "1" to "0"	3 ms
Input characteristic curve  IEC 61131-2, type 1  Initial data size  4 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  Supply voltage display  Group error display  none		16
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Process alarm no  Diagnostic interrupt no  Diagnostic functions no  Diagnostics information read-out none  Supply voltage display none  Group error display none	Status display	green LED per channel
Diagnostic interrupt no Diagnostic functions no Diagnostics information read-out none Supply voltage display none Group error display none	Interrupts	no
Diagnostic functions no  Diagnostics information read-out none  Supply voltage display none  Group error display none	Process alarm	no
Diagnostics information read-out none Supply voltage display none Group error display none	Diagnostic interrupt	no
Supply voltage display none Group error display none	Diagnostic functions	no
Group error display none	Diagnostics information read-out	none
	Supply voltage display	none
Channel error display none	Group error display	none
	Channel error display	none



1001011011		
Between channels	-	
Between channels of groups to	16	
Between channels and backplane bus	yes	
Insulation tested with	DC 500 V	
Datasizes		
Input bytes	4	
Output bytes	0	
Parameter bytes	0	
Diagnostic bytes	0	
Housing		
Material	PPE / PA 6.6	
Mounting	Profile rail 35 mm	
Mechanical data		
Dimensions (WxHxD)	50.8 mm x 76 mm x 88 mm	
Weight	140 g	
Environmental conditions		
Operating temperature	0 °C to 60 °C	
Storage temperature	-25 °C to 70 °C	
Certifications		
UL certification	yes	
KC certification	-	