

## Data sheet

SM 221 (221-1BF00)

## Technical data

Type SM 221  General Information  Note - Features 8 inputs  Current consumption/power loss  Current consumption from backplane bus 25 mA  Power loss 2W  Technical data digital inputs  Number of inputs 8 8  Cable length, shielded 1000 m  Cable length, shielded 600 m  Rated load voltage length, shielded 600 m  Rated load voltage 1 - Current consumption from load voltage L+ (without load) - Cable length, shielded 1000 m  Cable length, shielded 600 m  Rated voltage for signal "1" DC 05 V  Input voltage for signal "1" DC 1528.8 V  Input voltage for signal "1" TM A  Connection of Two-Wire-BEROs possible yes  Max. permissible BERO quiescent current 1.5 mA  Input delay of "1" to "0" 3 ms  Number of simultaneously utilizable inputs vertical configuration 8  Number of simultaneously utilizable inputs vertical configuration 8  Status information, alarms, diagnostics  Status display green LED per channel interrupts no Diagnostic interrupt none  Channel error display none  Channel error display none  Channel error display none	Order no.	221-1BF00
Note - Features 8 inputs  Current consumption/power loss  Current consumption from backplane bus 25 mA Power loss 2 W  Technical data digital inputs  Number of inputs 8 S 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 15	Туре	SM 221
Note - Features 8 inputs  Current consumption/power loss  Current consumption from backplane bus 25 mA Power loss 2 W  Technical data digital inputs  Number of inputs 8 S 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 15		
Features 8 inputs  Current consumption/power loss  Current consumption from backplane bus 25 mA  Power loss 2 W  Technical data digital inputs  Number of inputs 8  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  Number of simu		
Current consumption/power loss  Current consumption from backplane bus  2 5 mA  Power loss  2 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 backplane bus 25 mA Power loss 2 W  Technical data digital inputs  Number of inputs 8 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 "1" DC 1528.8 V Input voltage for signal "1" DC 1528.8 V Input voltage for signal "1" T 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" to "0" 3 ms Input delay of "1" to "0" 3 ms Input delay of simultaneously utilizable inputs horizontal configuration 8 Input characteristic curve IEC 61131-2, type 1 Initial data size 1 byte Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic interrupt no Diagnostic interrupt none Supply voltage display none	Features	8 inputs
Power loss 2 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 hysteresis  Frequency range  Input resistance  Input remarksistance 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 8  Input characteristic curve IEC 61131-2, type 1  Initial data size 1 Byte  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	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 "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" 10 "0" 3 ms Number of simultaneously utilizable inputs horizontal configuration 8 Input characteristic curve IEC 61131-2, type 1 Initial data size 1 Byte  Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic interrupt none Diagnostics information read-out none Supply voltage display none Group error display none	Current consumption from backplane bus	25 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 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 Input delay of "1" to "0" 3 ms Input delay of simultaneously utilizable inputs horizontal configuration 8 Input characteristic curve IEC 61131-2, type 1 Initial data size 1 Byte  Status information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostics information read-out none Supply voltage display none Group error display none	Power loss	2 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  Number of simultaneously utilizable inputs vertical configuration  Input characteristic curve IEC 61131-2, type 1  Initial data size 1 byte  Status display green LED per channel  Interrupts no  Diagnostic interrupt no  Diagnostic interrupt no  Diagnostic interrupt none  Group error display none  Group error display  DC 20.428.8 V  DC 20.428.8 V  Input delay of *10° to *10°	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 8 Input characteristic curve IEC 61131-2, type 1 Initial data size 1 Byte  Status information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic information read-out none Supply voltage display none Group error display none	Number of inputs	8
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 8 Input characteristic curve IEC 61131-2, type 1 Initial data size 1 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"  Input voltage for signal *1"  DC 1528.8 V  Input voltage hysteresis  Frequency range  Input resistance  Input current for signal "1"  T mA  Connection of Two-Wire-BEROs possible  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  8  Input characteristic curve  IEC 61131-2, type 1  Initial data size  1 Byte  Status display  green LED per channel  Interrupts  no  Process alarm  no  Diagnostic interrupt  no  Diagnostics information read-out  none  Group error display  none  Group error display  DC 20.428.8 V  DC 1528.8 V  Input voltage for signal *1*  T mA  Con28.8 V  Input voltage for signal *1*  T mA  Input characteristic curve  IEC 61131-2, type 1  Interrupts  no  Diagnostic interrupt  no  Diagnostic interrupt  no  Diagnostic information read-out  none  Group error display  none	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 8 Number of simultaneously utilizable inputs vertical configuration 8 Input characteristic curve IEC 61131-2, type 1 Initial data size 1 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 8 Input characteristic curve IEC 61131-2, type 1 Initial data size 1 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	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 8 Input characteristic curve IEC 61131-2, type 1 Initial data size 1 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  Recompleted to the simultaneously utilizable inputs vertical configuration  Input characteristic curve IEC 61131-2, type 1 Initial data size 1 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic interrupt no Diagnostic functions no Diagnostics 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 8  Input characteristic curve IEC 61131-2, type 1  Initial data size 1 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 8  Input characteristic curve IEC 61131-2, type 1  Initial data size 1 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 8  Number of simultaneously utilizable inputs vertical configuration 8  Input characteristic curve IEC 61131-2, type 1  Initial data size 1 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	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 8  Number of simultaneously utilizable inputs vertical configuration 8  Input characteristic curve IEC 61131-2, type 1  Initial data size 1 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	Input resistance	-
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  Reconstruction  Input characteristic curve  IEC 61131-2, type 1  Initial data size  1 Byte  Status information, alarms, diagnostics  Status display  green LED per channel  Interrupts  no  Process alarm  no  Diagnostic interrupt  no  Diagnostic functions  no  Diagnostics functions  no  Diagnostics information read-out  none  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  Rumber of simultaneously utilizable inputs vertical configuration  Input characteristic curve IEC 61131-2, type 1  Initial data size 1 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" 3 ms  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 1 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	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  1 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  1 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  1 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	Number of simultaneously utilizable inputs horizontal configuration	8
Initial data size 1 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	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 Diagnostics information read-out none Supply voltage display none Group error display none	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 Diagnostics information read-out none Supply voltage display none Group error display none	Initial data size	1 Byte
Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions no Diagnostics information read-out none Supply voltage display none Group error display none	Status information, alarms, diagnostics	
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



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8
yes
DC 500 V
1
0
0
0
PPE / PA 6.6
Profile rail 35 mm
25.4 mm x 76 mm x 88 mm
60 g
0 °C to 60 °C
-25 °C to 70 °C
yes