

## Data sheet

SM 221 (221-1FF50)

## Technical data

Type	Order no.	221-1FF50
Note	Туре	SM 221
Features 8x DI AC/DC 180265 V  Current consumption/power loss  Current consumption from backplane bus 80 mA  Power loss 3 W  Technical data digital inputs  Number of inputs 8  Cable length, shielded 600 m  Rated load voltage  Current consumption from load voltage L+ (without load)  Rated value AC/DC 180265 V  Input voltage for signal '1' AC/DC 0150 V  Input voltage for signal '1" AC/DC 180265	General information	
Current consumption/power loss Current consumption from backplane bus 80 mA Power loss 3 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 AC/DC 180265 V Input voltage for signal "0" AC/DC 180265 V Input voltage for signal "1" AC/DC 180	Note	
Current consumption from backplane bus 3 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 AC/DC 180265 V Input voltage for signal "0" AC/DC 180265 V Input voltage for signal "1" AC/DC 180265 V Input voltage hysteresis - Signal logic input Bipolar Frequency range 5060 Hz Input resistance 136 KOhm Input current for signal "1" - Connection of Two-Wire-BEROs possible - Max. permissible BERO quiescent current - Input delay of "0" to "1" 25 ms Input delay of "0" to "0" 25 ms Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic interrupt no Diagnostic interrupt none Channel error display none	Features	
Power loss 3 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 AC/DC 180265 V Input voltage for signal "0" AC/DC 180265 V Input voltage for signal "1" AC/DC 180265 V Input delay of "1" AC/DC 180265 V Input delay of "0" To "1" AC/DC 180265 V Input delay of "0" to "1" AC/DC 180265 V Input delay of "0"	Current consumption/power loss	
Technical data digital inputs   8	Current consumption from backplane bus	80 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 AC/DC 180265 V Input voltage for signal "0" AC/DC 0150 V Input voltage for signal "1" AC/DC 180265 V Input voltage for signal "1" AC/DC 180265 V Input voltage for signal "1" AC/DC 180265 V Input voltage hysteresis - Signal logic input Bipolar Frequency range 5060 Hz Input resistance 136 kOhrn Input current for signal "1" - Connection of Two-Wire-BEROs possible - Max. permissible BERO quiescent current - Input delay of "0" to "1" 25 ms Input delay of "0" to "1" 25 ms Input delay of "1" to "0" 25 ms Input delay of "1" to "0" 25 ms Input delay of "1" to "1" 18 pyte Status display utilizable inputs vertical configuration 8 Input characteristic curve - Initial data size 1 byte Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic interrupt no Diagnostic interrupt no Diagnostic interrupt no Diagnostic information read-out none Supply voltage display none Group error display none	Power loss	3 W
Cable length, shielded 1000 m  Cable length, unshielded 600 m  Rated load voltage -  Current consumption from load voltage L+ (without load) -  Rated value AC/DC 180265 V  Input voltage for signal "0" AC/DC 0150 V  Input voltage for signal "1" AC/DC 180265 V  Input voltage for signal "1" AC/DC 180265 V  Input voltage hysteresis -  Signal logic input Bipolar  Frequency range 5060 Hz  Input resistance 136 kOhm  Input current for signal "1" -  Connection of Two-Wire-BEROs possible -  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 8  Input characteristic curve -  Initial data size 1 Byte  Status information, alarms, diagnostics  Status display green LED per channel  Interrupts no  Diagnostic interrupt no  Diagnostic interrupt no  Diagnostic interrupt no  Diagnostics information read-out none  Supply voltage display none  Channel error display none	Technical data digital inputs	
Cable length, unshielded 600 m Rated load voltage - Current consumption from load voltage L+ (without load) - Rated value AC/DC 180265 V Input voltage for signal *0° AC/DC 0150 V Input voltage for signal *11° AC/DC 180265 V Input voltage for signal *11° AC/DC 180265 V Input voltage for signal *11° AC/DC 180265 V Input voltage hysteresis - Signal logic input Bipolar Frequency range 5060 Hz Input current for signal *11° - Connection of Two-Wire-BEROs possible - Input delay of *10° to *11° 25 ms Input delay of *10° to *11° 15 ms Input characteristic curve - Initial data size 1 byte  Status display green LED per channel Interrupts no Diagnostic interrupt 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 AC/DC 180265 V Input voltage for signal "0" AC/DC 0150 V Input voltage for signal "1" AC/DC 180265 V Input voltage for signal "1" AC/DC 180265 V Input voltage for signal "1" AC/DC 180265 V Input voltage hysteresis - Signal logic input Bipolar Frequency range 5060 Hz Input resistance 136 kOhm Input current for signal "1" - Connection of Two-Wire-BEROs possible - Max. permissible BERO quiescent current - Input delay of "0" to "1" 25 ms Input delay of "0" to "1" 25 ms Input delay of "1" to "0" 25 ms Input delay of "1" to "0" 25 ms Input delay of "1" to "0" 125 ms Input characteristic curve - Initial data size 1 Byte Status information, alarms, diagnostics Itaus 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 Channel error display none	Cable length, shielded	1000 m
Rated load voltage - Current consumption from load voltage L+ (without load) - Rated value AC/DC 180265 V Input voltage for signal "0" AC/DC 0150 V Input voltage for signal "1" AC/DC 180265 V Input voltage for signal "1" AC/DC 180265 V Input voltage for signal "1" AC/DC 180265 V Input voltage hysteresis - Signal logic input Bipolar Frequency range 5060 Hz Input resistance 136 kOhm Input current for signal "1" - Connection of Two-Wire-BEROs possible - Max. permissible BERO quiescent current - Input delay of "0" to "1" 25 ms Input delay of "0" to "1" 25 ms Input delay of "1" to "0" 25 ms Input delay of "1" to "0" 25 ms Input delay of "1" to "0" 125 ms Input characteristic curve - Initial data size 1 Byte Status information, alarms, diagnostics Itaus 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 Channel error display none		600 m
Rated value AC/DC 180265 V Input voltage for signal "0" AC/DC 0150 V Input voltage for signal "1" AC/DC 180265 V Input voltage hysteresis - Signal logic input Bipolar Frequency range 5060 Hz Input resistance 136 kOhm Input current for signal "1" - Connection of Two-Wire-BEROs possible - 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 vertical configuration 8 Input characteristic curve - Initial data size 1 Byte  Status information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic interrupt none Channel error display none Channel error display none Channel error display none		-
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Input voltage for signal "1" AC/DC 180265 V Input voltage hysteresis - Signal logic input Bipolar Frequency range 5060 Hz Input resistance 136 kOhm Input current for signal "1" - Connection of Two-Wire-BEROs possible - 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 Number of simultaneously utilizable inputs vertical configuration  Input characteristic curve - Initial data size 1 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic functions no Diagnostic information read-out none Supply voltage display none Group error display none		AC/DC 180265 V
Input voltage for signal "1" AC/DC 180265 V Input voltage hysteresis - Signal logic input Bipolar Frequency range 5060 Hz Input resistance 136 kOhm Input current for signal "1" - Connection of Two-Wire-BEROs possible - 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 Number of simultaneously utilizable inputs vertical configuration  Input characteristic curve - Initial data size 1 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts 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"	AC/DC 0150 V
Signal logic input Bipolar  Frequency range 5060 Hz  Input resistance 136 kOhm  Input current for signal "1" -  Connection of Two-Wire-BEROs possible -  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 8  Input characteristic curve -  Initial data size 1 Byte  Status information, alarms, diagnostics  Status display green LED per channel  Interrupts no  Diagnostic interrupt no  Diagnostic functions no  Diagnostic functions no  Diagnostics information read-out none  Supply voltage display none  Group error display none  Channel error display none	Input voltage for signal "1"	AC/DC 180265 V
Frequency range 5060 Hz Input resistance 136 kOhm Input current for signal "1" - Connection of Two-Wire-BEROs possible - 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 8 Number of simultaneously utilizable inputs vertical configuration 8 Input characteristic curve - 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 Diagnostic functions no Diagnostics information read-out none Supply voltage display none Group error display none		-
Input resistance 136 kOhm  Input current for signal "1" -  Connection of Two-Wire-BEROs possible -  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  Number of simultaneously utilizable inputs vertical configuration  Residunt of simultaneously utilizable inputs vertical configuration  Input characteristic curve -  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  Diagnostic information read-out none  Supply voltage display none  Channel error display none	Signal logic input	Bipolar
Input current for signal "1" -  Connection of Two-Wire-BEROs possible -  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  Number of simultaneously utilizable inputs vertical configuration  Input characteristic curve - 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  Channel error display none	Frequency range	5060 Hz
Connection of Two-Wire-BEROs possible  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  Number of simultaneously utilizable inputs vertical configuration  8  Input characteristic curve  - 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 sinformation read-out  none  Supply voltage display  none  Channel error display  none	Input resistance	136 kOhm
Max. permissible BERO quiescent current Input delay of "0" to "1" Input delay of "0" to "1" Input delay of "1" to "0" Input characteristic curve Input characteristic curve Initial data size Input characteristic curve Input c	Input current for signal "1"	-
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  Rumber of simultaneously utilizable inputs vertical configuration  Input characteristic curve -  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  Supply voltage display none  Group error display none  Channel error display none	Connection of Two-Wire-BEROs possible	-
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  - 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  Channel error display  none	Max. permissible BERO quiescent current	-
Number of simultaneously utilizable inputs horizontal configuration  Number of simultaneously utilizable inputs vertical configuration  Input characteristic curve  - 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  Channel error display  none	Input delay of "0" to "1"	25 ms
Number of simultaneously utilizable inputs vertical configuration  Input characteristic curve  Initial data size  I Byte  Status information, alarms, diagnostics  Status display  Interrupts  Inco  Process alarm  Inco  Diagnostic interrupt  Diagnostic functions  Diagnostics information read-out  Supply voltage display  Channel error display  Number of simultaneously utilizable inputs vertical configuration  Process  I Byte  Status display  Green LED per channel  no  no  no  no  Diagnostic interrupt  no  Diagnostic functions  no  Diagnostic functions  no  Channel error display  none	Input delay of "1" to "0"	25 ms
Input characteristic curve - 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 Channel error display none		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  Channel 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  Channel error display 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 Supply voltage display none Group error display none Channel 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 Channel 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  Channel 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  Channel error display none	Interrupts	no
Diagnostic functions no  Diagnostics information read-out none  Supply voltage display none  Group error display none  Channel error display none	Process alarm	no
Diagnostics information read-out none Supply voltage display none Group error display none Channel error display none	Diagnostic interrupt	no
Supply voltage display none Group error display none Channel error display none		no
Supply voltage display none  Group error display none  Channel error display none	Diagnostics information read-out	none
Group error display none Channel error display none		none
Channel error display none		
		none



Between channels	
Between channels of groups to	8
Between channels and backplane bus	yes
Insulation tested with	DC 500 V
Datasizes	
Input bytes	1
Output bytes	0
Parameter bytes	0
Diagnostic bytes	0
Housing	
Material	PPE / PA 6.6
Mounting	Profile rail 35 mm
Mechanical data	
Dimensions (WxHxD)	25.4 mm x 76 mm x 88 mm
Net weight	90 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
KC certification	-