

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 the simultaneously utilizable inputs vertical configuration 16 Input characteristic curve Indicate the simultaneously utilizable inputs vertical configuration 16 Input characteristic curve Indicate the simultaneously utilizable inputs vertical configuration 16 Input characteristic curve Indicate the simultaneously utilizable inputs vertical configuration 16 Input characteristic curve Indicate the simultaneously utilizable inputs vertical configuration 16 Input characteristic curve Indicate the simultaneously utilizable inputs vertical configuration 16 Input characteristic curve Indicate the simultaneously utilizable inputs vertical configuration 16 Input characteristic curve Indicate the simultaneously utilizable inputs vertical configuration 16 Input characteristic curve Indicate the simultaneously utilizable inputs vertical configuration 16 Input characteristic curve Indicate the simultaneously utilizable inputs vertical configuration 16 Input characteristic curve Indicate the simultaneously utilizable inputs vertical configuration 16 Input characteristic curve Indicate the simultaneously utilizable inputs vertical configuration 16 Input characteristic curve Indicate the simultaneously utilizable Inputs vertical configuration 16 Input characterist | Note | |
| 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 "1" DC 1528.8 V Input voltage for signal "1" DC 1528.8 V Input voltage for signal "1" TO 1528.8 V Input v | Features | 32 inputs |
| 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 hysteresis Frequency range Input rent 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 16 Input characteristic curve IEC 61131-2, type 1 Interrupts no Diagnostics information read-out none Supply voltage display none | Current consumption/power loss | |
| 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 Input delay 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 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 | 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 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 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 | - |
| 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 interrupt no Diagnostics information read-out none Supply voltage display none Group error 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 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 |
| 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 | 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 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 | 4 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 |



| isolation | | | |
|------------------------------------|-------------------------|--|--|
| 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 | - | | |
| | | | |