




SIMATIC S7-1200, Digital input SM 1221, 16 DI, 24 V DC, Sink/Source

| General information | |
|--|---|
| Product type designation | SM 1221, DI 16x24 V DC |
| Supply voltage | |
| Rated value (DC) | 24 V |
| permissible range, lower limit (DC) | 20.4 V |
| permissible range, upper limit (DC) | 28.8 V |
| Input current | |
| from backplane bus 5 V DC, max. | 130 mA |
| Digital inputs | |
| <ul style="list-style-type: none"> from load voltage L+ (without load), max. | 4 mA; per channel |
| output voltage / header | |
| supply voltage of the transmitters / header | |
| <ul style="list-style-type: none"> product function / supply voltage for transmitters | Yes |
| Power loss | |
| Power loss, typ. | 2.5 W |
| Digital inputs | |
| Number of digital inputs | 16 |
| <ul style="list-style-type: none"> in groups of | 4 |
| Input characteristic curve in accordance with IEC 61131, type 1 | Yes |
| Number of simultaneously controllable inputs | |
| all mounting positions | |
| — up to 40 °C, max. | 16 |
| horizontal installation | |
| — up to 40 °C, max. | 16 |
| — up to 50 °C, max. | 16 |
| vertical installation | |
| — up to 40 °C, max. | 16 |
| Input voltage | |
| <ul style="list-style-type: none"> Rated value (DC) for signal "0" for signal "1" | 24 V 5 V DC at 1 mA 15 V DC at 2.5 mA |
| Input current | |
| <ul style="list-style-type: none"> for signal "0", max. (permissible quiescent current) for signal "1", min. for signal "1", typ. | 1 mA 2.5 mA 4 mA |
| Input delay (for rated value of input voltage) | |
| for standard inputs | |
| — parameterizable | Yes; 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four |
| for interrupt inputs | |

| | |
|--|--|
| — parameterizable | Yes |
| Cable length | |
| • shielded, max. | 500 m |
| • unshielded, max. | 300 m |
| Interrupts/diagnostics/status information | |
| Alarms | |
| • Diagnostic alarm | Yes |
| Diagnostics indication LED | |
| • for status of the inputs | Yes |
| Potential separation | |
| Potential separation digital inputs | |
| • between the channels, in groups of | 4 |
| Degree and class of protection | |
| IP degree of protection | IP20 |
| Standards, approvals, certificates | |
| CE mark | Yes |
| CSA approval | Yes |
| UL approval | Yes |
| cULus | Yes |
| FM approval | Yes |
| RCM (formerly C-TICK) | Yes |
| KC approval | Yes |
| Marine approval | Yes |
| Ambient conditions | |
| Free fall | |
| • Fall height, max. | 0.3 m; five times, in product package |
| Ambient temperature during operation | |
| • min. | -20 °C |
| • max. | 60 °C |
| • permissible temperature change | 5°C to 55°C, 3°C / minute |
| Ambient temperature during storage/transportation | |
| • min. | -40 °C |
| • max. | 70 °C |
| Air pressure acc. to IEC 60068-2-13 | |
| • Storage/transport, min. | 660 hPa |
| • Storage/transport, max. | 1 080 hPa |
| Relative humidity | |
| • Operation at 25 °C without condensation, max. | 95 % |
| connection method / header | |
| required front connector | Yes |
| Mechanics/material | |
| Enclosure material (front) | |
| • Plastic | Yes |
| Dimensions | |
| Width | 45 mm |
| Height | 100 mm |
| Depth | 75 mm |
| Weights | |
| Weight, approx. | 210 g |
| last modified: | 4/1/2022  |