SIEMENS

## Data sheet 6ES7141-5AH00-0BA0

SIMATIC ET 200AL, DI 16x 24 V DC, 8x M12, Degree of protection IP67

| | |
|---|---|
| **General information** | |
| Product type designation | DI 16x24VDC |
| HW functional status | FS03 |
| Firmware version | V1.0.x |
| Product function | |
| ● I&M data | Yes; I&M0 to I&M3 |
| Engineering with | |
| ● STEP 7 TIA Portal configurable/integrated from version | STEP 7 V13 SP1 or higher |
| ● STEP 7 configurable/integrated from version | V5.5 SP4 Hotfix 7 or higher |
| ● PROFIBUS from GSD version/GSD revision | GSD as of Revision 5 |
| ● PROFINET from GSD version/GSD revision | GSDML V2.3.1 |
| **Supply voltage** | |
| power supply according to NEC Class 2 required | No |
| Load voltage 1L+ | |
| ● Rated value (DC) | 24 V |
| ● permissible range, lower limit (DC) | 20.4 V |
| ● permissible range, upper limit (DC) | 28.8 V |
| ● Reverse polarity protection | Yes; Against destruction; encoder power supply outputs applied with reversed polarity |
| **Input current** | |
| Current consumption (rated value) | 30 mA; without load |
| from load voltage 1L+ (unswitched voltage) | 4 A; Maximum value |
| from load voltage 2L+, max. | 4 A; Maximum value |
| **Encoder supply** | |
| Number of outputs | 8 |
| 24 V encoder supply | |
| ● Short-circuit protection | Yes; per module, electronic |
| ● Output current, max. | 1.4 A; Total current of all encoders |
| **Power loss** | |
| Power loss, typ. | 2.7 W |
| **Digital inputs** | |
| Number of digital inputs | 16 |
| Input characteristic curve in accordance with IEC 61131, type 3 | Yes |
| Number of simultaneously controllable inputs | |
| all mounting positions | |
| — up to 55 °C, max. | 16 |
| Input voltage | |
| ● Rated value (DC) | 24 V |
| ● for signal "0" | -30 to +5 V |
| ● for signal "1" | +11 to +30V |

| | |
|---|---|
| Input current | |
| ● for signal "1", typ. | 3.2 mA |
| Input delay (for rated value of input voltage) | |
| for standard inputs | |
| — at "0" to "1", min. | 1.2 ms |
| — at "0" to "1", max. | 4.8 ms |
| — at "1" to "0", min. | 1.2 ms |
| — at "1" to "0", max. | 4.8 ms |
| Cable length | |
| ● unshielded, max. | 30 m |
| **Encoder** | |
| Connectable encoders | |
| ● 2-wire sensor | Yes |
| — permissible quiescent current (2-wire sensor), max. | 1.5 mA |
| **Interrupts/diagnostics/status information** | |
| Alarms | |
| ● Diagnostic alarm | Yes; Parameterizable |
| Diagnoses | |
| ● Short-circuit | Yes; Sensor supply to M; module by module |
| Diagnostics indication LED | |
| ● Channel status display | Yes; green LED |
| ● for module diagnostics | Yes; green/red LED |
| **Potential separation** | |
| between the load voltages | Yes |
| Potential separation channels | |
| ● between the channels | No |
| ● between the channels and backplane bus | Yes |
| ● between the channels and the power supply of the electronics | No |
| **Isolation** | |
| Isolation tested with | 707 V DC (type test) |
| **Degree and class of protection** | |
| IP degree of protection | IP65/67 |
| **Standards, approvals, certificates** | |
| Suitable for safety-related tripping of standard modules | Yes; From FS01 |
| Highest safety class achievable for safety-related tripping of standard modules | |
| ● Performance level according to ISO 13849-1 | PL d |
| ● Category according to ISO 13849-1 | Cat. 3 |
| ● SIL acc. to IEC 62061 | SIL 2 |
| ● remark on safety-oriented shutdown | https://support.industry.siemens.com/cs/de/en/view/39198632 |
| **Ambient conditions** | |
| Ambient temperature during operation | |
| ● min. | -30 °C |
| ● max. | 55 °C |
| **connection method** | |
| Design of electrical connection for the inputs and outputs | M12, 5-pole |
| Design of electrical connection for supply voltage | M8, 4-pole |
| ET-Connection | |
| ● ET-Connection | M8, 4-pin, shielded |
| **Dimensions** | |
| Width | 45 mm |
| Height | 159 mm |
| Depth | 40 mm |
| **Weights** | |
| Weight, approx. | 184 g |

**last modified:** 5/22/2024