



SDO204 Safety Digital Output Module

The SDO204 module adds an additional 4 output channels to the SLC284 safety processor module and a homogeneous overall system is created through the independent and safe inclusion in the M1 controller. Through the free choice of the slot – either directly beside the safety controller, through bus expansion, or several hundred meters away through the FASTBUS – the safety system can be optimally adapted to the distributed requirements and existing infrastructure of the system.

The SDO204 safety digital output module is approved under the latest safety standard IEC61508. The SDO204 can be easily integrated in the overall safety application, comparable with a standard I/O module – as the proven »SolutionCenter« development platform offers the easiest configuration, most flexible type of programming, and a safe simulation via easily combinable PLC-Open function modules. All variables and states of the SDO204 safety digital output module are accessible in other machine program languages (PLC, C/C++), however the visualization is also available and makes bothersome parallel wiring unnecessary.

- 8 digital outputs – can be used redundantly in pairs (PL e/SIL3/Cat 4)
- Each output with emergency delay is configurable in the event of communication lost
- Safe monitoring of the inputs with redundant 32-bit microcontrollers
- Several SDO208 units per controller possible
- All safety I/O states can be used by M1 controller
- Safety programming via SolutionCenter
- Galvanic isolation between the groups
- Galvanic isolation from the system
- Operating state display »SAFE«
- Status display for each channel via LED

| Item | Item-No. |
|-----------|-------------|
| SDO204 | 00014545-00 |
| SDO204 CC | 00017462-00 |

| SDO204 | |
|--|--|
| Digital Outputs | |
| Quantity | 8 digital outputs – can be used redundantly in pairs (PL e/SIL3/Cat 4) |
| Output voltage range | 18 to 34 V DC |
| Output current per channel | 2 A nominal |
| Total current per group (max.) | 8 A ¹⁾ |
| Delay 0 to 1 | Max. 35 µs at full load |
| Delay 1 to 0 | Max. 155 µs at full load |
| Output groups | 2, electronic fuse |
| Status display (LED) | Green |
| Switching frequency (max., ohmic load) | 500 Hz |
| Error monitoring | Short circuit, overload, inadequate or excess voltage of the power supply |
| Time-delayed emergency shut-off | Each output individual from 0 to 1800 s configurable (resolution 100 ms); Emergency shut-off is activated in the event of communication lost e.g. failure in the supply voltage |
| Internal Power Supply | |
| Galvanic isolation from the system | 500 V |
| Galvanic isolation between groups | 500 V |
| Internal power supply | Backplanes BS2xx |
| Current consumption internal | 5 V / 250 mA via backplane |
| External Power Supply | |
| Reverse polarity protection | Yes |
| Input voltage | 24 V DC (18 to 34 V) |
| Voltage range | 18 to 34 V DC |
| Current consumption | Normally 70 mA at +24 VDC + Σ current consumption of the encoders |
| Connection Technology | |
| I/O connection | Connector RM3.5 with flange |
| Power supply connection | Connector RM5.08 with flange |
| Connection technology | Screw or spring terminal Writable and codable plug |
| Standards | |
| Machine safety | IEC 61508:2010: Functional safety – Design of complex E/E/PE safety components |
| Approved for | ISO 13849: Safety of Machinery IEC 62061: Functional safety machine-related E/E/PE systems IEC 61511: Functional safety equipment and process industry |
| Product standard | IEC 61131-2 UL 508 |

1) Derating from 40 °C ambient temperature

SDO204**Additional Features**

Status display via LEDs

| Approvals / Certificates | | Standard | ColdClimate (✳) |
|--------------------------------|--|--|-----------------------------------|
| General | | CE, cULus, CCC | |
| Marine | | - | DNV GL, LR, ABS, BV, NK, KR, RINA |
| Ambient Conditions | | Standard | ColdClimate (✳) |
| Operating temperature | | -30 to +60 °C fanless | -30 to +60 °C fanless |
| Relative humidity operation | | 5 to 95 % without condensation | 5 to 95 % with condensation |
| Storage temperature | | -40 to +85 °C | -40 to +85 °C |
| Relative humidity storage | | 5 to 95 % without condensation | 5 to 95 % with condensation |
| Maximum altitude ¹⁾ | | 4,500 m above sea level | |
| Pollution degree | | 2 (without condensation; according to IEC 60664-1) | 2 (according to IEC 60664-1) |
| Protection class | | 3 | |

1) For operation at an altitude of 2,000 m above sea level, a derating of -0.5 Kelvin per 100 m to a maximum altitude of 4,500 m above sea level must be taken into account.

Order Codes

| Item | Item No. | Description |
|---------------|-------------|---|
| SDO204 | 00014545-00 | Safety digital output module; SIL3/PLe: 4x DO 24V / 2A; (SIL2/PLd: 8x DO) |
| SDO204 CC | 00017462-00 | Like SDO204; ColdClimate (✳) |
| Accessories | | |
| KZ-SDO204 B+C | 00014772-50 | Terminal set Phoenix cage clamp (1x KZ 51/05; 2x KZ 35/08) with labeling strips and coding elements |

