

HIMatrix

Safety-Related Controller

F3 DIO 20/8 02 Manual



HIMA Paul Hildebrandt GmbH + Co KG
Industrial Automation

3.5 Product Data

| General | |
|-----------------------------------|---|
| Response time | ≥ 10 ms |
| Interfaces: Ethernet | 2 x RJ-45, 10/100BaseT (with 100 Mbit/s) with integrated switch |
| Operating voltage | 24 VDC, -15 %...+20 %, $w_{ss} \leq 15 \%$, from a power supply unit with safe insulation in accordance with IEC 61131-2. |
| Current input | max. 8 A (with maximum load) Idle: approx. 0.4 A at 24 V |
| Fuse (external) | 10 A time-lag (T) |
| Back-up battery | None |
| Operating temperature | 0 °C...+60 °C |
| Storage temperature | -40 °C...+85 °C |
| Type of protection | IP20 |
| Max. dimensions (without plug) | Width: 207 mm (with enclosure screws) Height: 114 mm (with fixing bolt) Depth: 66 mm (with earthing screw) |
| Weight | 1.0 kg |

Table 11: Product Data

| Digital inputs | |
|---------------------|--|
| Number of inputs | 20 (non-galvanically isolated) |
| High level: Voltage | 15...30 VDC |
| Current input | ≥ 2 mA at 15 V |
| Low level: Voltage | max. 5 VDC |
| Current input | max. 1.5 mA (1 mA at 5 V) |
| Switching point | typ. 7.5 V |
| Supply | 5 x 20 V / 100 mA (at 24 V), short-circuit-proof |

Table 12: Specifications for the Digital Inputs

| Digital outputs (DO+ and DO-) | |
|-------------------------------|---|
| Number of outputs | 8 (non-galvanically isolated) |
| Output voltage | ≥ L+ minus 2 V |
| Output current | Channels 1...3 and 5...7: 0.5 A at 60 °C Channels 4 and 8: 1 A at 60 °C, 2 A at 50 °C) |
| Minimum load | 2 mA for each channel |
| Internal voltage drop | max. 2 W at 2 A |
| Behavior with overload | The affected output is switched off and re-started cyclically. |
| Total output current | max. 7 A, upon overload, all outputs are switched off and cyclically switched on again |

Table 13: Specifications for the Digital Outputs

3.5.1 Product Data of F3 DIO 20/8 02 021 (-20 °C)

The F3 DIO 20/8 02 021 (-20 °C) model variant is intended for use at the extended temperature range of -20...+60 °C. The electronic components are coated with a protective lacquer.

| General | |
|-----------------------|-----------------|
| Operating temperature | -20 °C...+60 °C |
| Weight | 1.2 kg |

Table 14: Product Data of F3 DIO 20/8 021

3.6 Certified HIMatrix F3 DIO 20/8 02

| HIMatrix F3 DIO 20/8 02 | |
|-----------------------------------|--|
| CE | EMC, ATEX Zone 2 |
| TÜV | IEC 61508 1-7:2000 up to SIL 3 IEC 61511:2004 EN 954-1:1996 up to Cat. 4 |
| TÜV ATEX | 94/9/EG EN 1127-1 EN 61508 |
| UL Underwriters Laboratories Inc. | ANSI/UL 508, NFPA 70 – Industrial Control Equipment CSA C22.2 No.142 UL 1998 Software Programmable Components NFPA 79 Electrical Standard for Industrial Machinery IEC 61508 |
| FM Approvals | Class I, DIV 2, Groups A, B, C and D Class 3600, 1998 Class 3611, 1999 Class 3810, 1989 Including Supplement #1, 1995 CSA C22.2 No 142 CSA C22.2 No 213 |

Table 15: Certificates