

HIMatrix

Safety-Related Controller

F2 DO 16 02 Manual



HIMA Paul Hildebrandt GmbH + Co KG
Industrial Automation

3.5 Product Data

General	
Response time	≥ 10 ms
Ethernet interfaces	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. 0.6 A
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: 255 mm (with enclosure screws) Height: 114 mm (with fixing bolt) Depth: 113 mm (with earthing rail)
Weight	2 kg

Table 11: Product Data

Relay outputs	
Relay types for each channel	2 safety relays with forcibly guided contacts, 1 standard relay
Number of outputs	16 potential-free normally open contacts
Switching voltage	≥ 5 V, ≤ 30 VAC / 60 VDC
Switching current	≥ 10 mA, ≤ 3 A internally fused with 3.15 A fuse breaking capacity: 100 A
Switching capacity AC	UL: 30 VAC at 3 A TÜV: max. 50 VA, $\cos \varphi \geq 0.5$, at max. 30 VAC max. 90 VA, $\cos \varphi = 1$, at max. 30 VAC
Switching capacity DC (induction free)	UL: 24 VDC at 1 A ohmic load TÜV: up to 30 VDC: max. 90 W (3.5 A) up to 60 VDC: max. 24 W (0.4 A) (adjust external fusing)
Contact material	Silver alloy
Switching time	approx. 30 ms
Reset time	approx. 10 ms
Bounce time	approx. 15 ms
Product life: mechanical electrical	$\geq 3 \times 10^6$ switching operations $\geq 2.5 \times 10^5$ switching operations at ohmic full load and ≤ 0.1 switching operations per second

Table 12: Specifications for the Relay Outputs

3.6 Certified HIMatrix F2 DO 16 02

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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 13: Certificates