



H 4135: Relay in an electronic housing

safety-related, for circuits up to SIL 3 according to IEC 61508

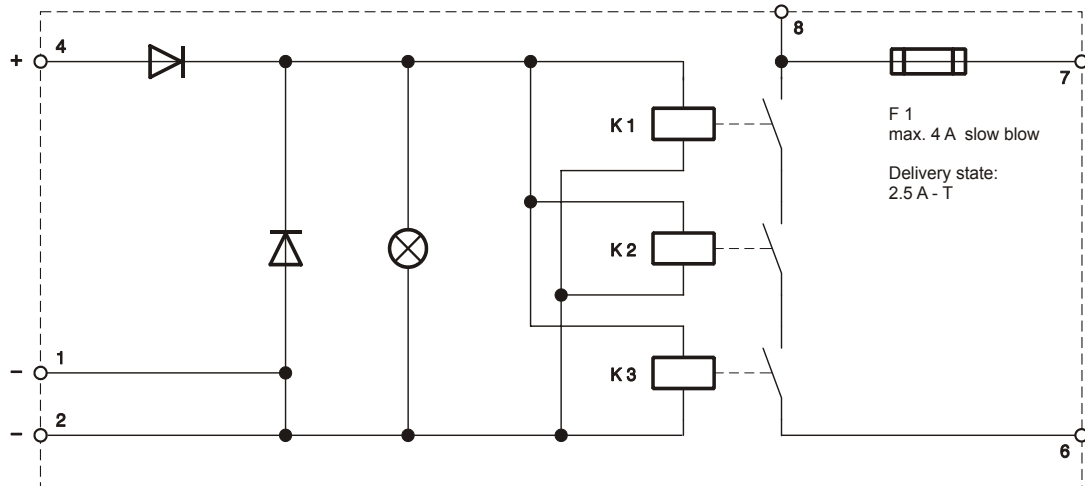


Figure 1: Block diagram

The module is tested according to

- IEC 61508 / SIL 3,
- EN 298,
- DIN VDE 0116, EN 50156,
- NFPA 8501, NFPA 8502,
- EN 60664, DIN EN 50178 (VDE 0160),
- EN 6100-6-2, EN 50082-2, EN 61000-6-4,
- (DIN V 19250 / RC 1...6, DIN VDE 0801 incl. A1)

The relay is suitable for the switching of safety-related circuits. Thus the relay can be used for safety shutdowns, e. g. to cut off the entire fuel supply for combustion plants.

The module is equipped with relays in diversity.

Note The connection terminal 8 may be used only for monitoring the fuse F1, but not to supply a voltage for the contact!

Input	24 VDC / -15...+20 %, ≤ 40 mA
Output	floating NO contact
	Relay data: cf. reverse
Switching time	approx. 8 ms
Reset time	approx. 6 ms
Ambient conditions	-25...+60 °C
Degree of protection	IP 20 according to IEC/EN 60529 (VDE 0470 part 1)

The relay has a **safe isolation** according to DIN EN 50178 between the output contact and the input. The clearance in air and the creepage distance are dimensioned for overvoltage class III up to 300 V.

Relay data

Contact material	AgNi, hard gold-plated
Switching voltage	≥ 5 V, ≤ 250 VAC / ≤ 127 VDC
Switching current	≥ 10 mA, ≤ 4 A
Switching capacity AC	≤ 500 VA, cos φ > 0.5 ≤ 830 VA, cos φ > 0.9
Switching capacity DC	up to 30 V: ≤ 120 W up to 70 V: ≤ 50 W up to 127 V: ≤ 25 W
Bounce time	approx. 1 ms
Life	
mechanical	≥ 30 x 10 ⁶ cycles
electrical	≥ 2.5 x 10 ⁵ cycles (with full resistive load and ≤ 0.1 cycles per second)

Restrictions

- For SIL 3 applications (according to IEC 61508) function checks have to be made within a period of three years (offline proof test).
- The replacement of components must be made only by the manufacturer regarding the valid standards and TÜV restrictions.

Mechanical design and dimensions

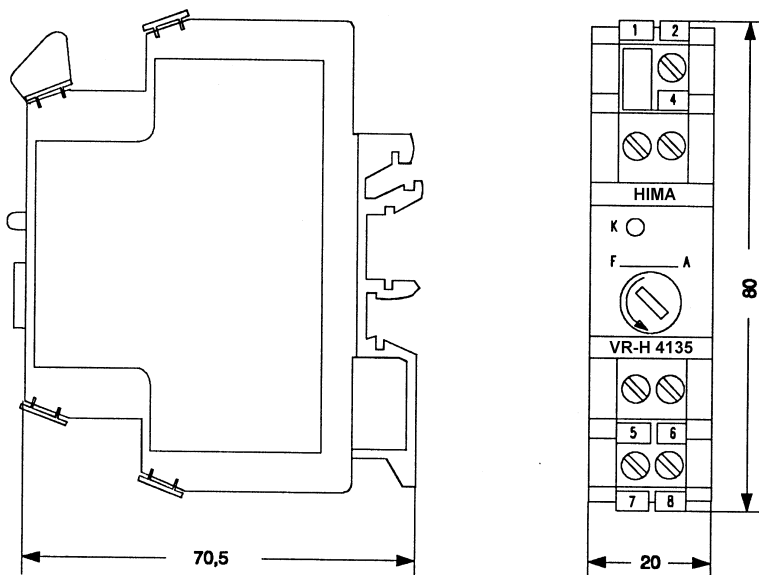


Figure 2: Mechanical design and dimensions

Cross section of connecting wires	≤ 2.5 mm ² (AWG 14)
Mounting	on DIN rail 35 mm or on C profile
Mounting position	horizontal or vertical
Assembling distance	not required



TÜV Rheinland Group

TÜV Industrie Service GmbH
Automation, Software und Informationstechnologie

ZERTIFIKAT
CERTIFICATE

Nr./No. 968/EZ 165.00/04

Prüfgegenstand Product tested	Safety Related Electronic System	Hersteller Manufacturer	HIMA Paul Hildebrandt GmbH + Co. KG Albert-Bossermann-Straße 28 68782 Brühl bei Mannheim
Typbezeichnung Type designation	Modules for Planar F System H 4116 (SIL 2, AK 4) H 4135 (SIL 3, AK 5, 6) H 4136 (SIL 3, AK 5, 6)	Verwendungszweck Intended application	Safety Related Electronic Modules for use in process control, Burner Management (BMS), emergency shut down, where the safe state is the de-energized state.
Prüfgrundlagen Codes and standards forming the basis of testing	IEC 61508, Part 1 - 7:2000 VDE 0801:1990 and Amendment A1:1994 DIN V 19250:1994 DIN VDE 0116:1989, prEN 50156-1:CDV 2000 EN 60664-1:2003 EN 50178:1997 EN 298:1994 NFPA 8501:1997; NFPA 8502:1999 EN 61000-6-2:2000, EN 61000-6-4:2002		
Prüfungsergebnis Test results	The modules are suitable for safety related applications up to SIL 2 or SIL 3 (IEC 61508), RC 4, 5, 6 (DIN V 19250).		
Besondere Bedingungen Specific requirements	For the use of the Planar F-Modules, the Safety Manual, the User Manual and the actual revision of the official list of product documentation, hardware modules and software components released by HIMA and TÜV Rheinland have to be considered.		



Der Prüfbericht-Nr. 968/EZ 165.00/04 vom 2004-04-14 ist Bestandteil dieses Zertifikates.
Der Inhaber eines für den Prüfgegenstand gültigen Genehmigungs-Ausweises ist berechtigt, die mit dem Prüfgegenstand übereinstimmenden Erzeugnisse mit dem abgebildeten Prüfzeichen zu versehen.

The test report-no. 968/EZ 165.00/04 dated 2004-04-14 is an integral part of this certificate.
The holder of a valid licence certificate for the product tested is authorised to affix the test mark shown opposite to products which are identical with the product tested.

TÜV Industrie Service GmbH
Geschäftsfeld ASI
Automation, Software und Informationstechnologie
Am Grauen Stein, 51105 Köln
Postfach 91 09 51, 51101 Köln

2004-04-14
Datum/Date

Firmenstempel/Company seal

Unterschrift/Signature

