

SAFEMASTER Interface Module HC 3096N, HL 3096N



0270331



Your Advantages

- Simple contact extension and re-inforcement also of safety modules
- Cost and space saving alternative compared to contactors
- Simple contact monitoring via forcibly guided NC contact
- large wire cross section 0.5 - 2.5 mm² (12-24 AWG) reduces thermal load on wires

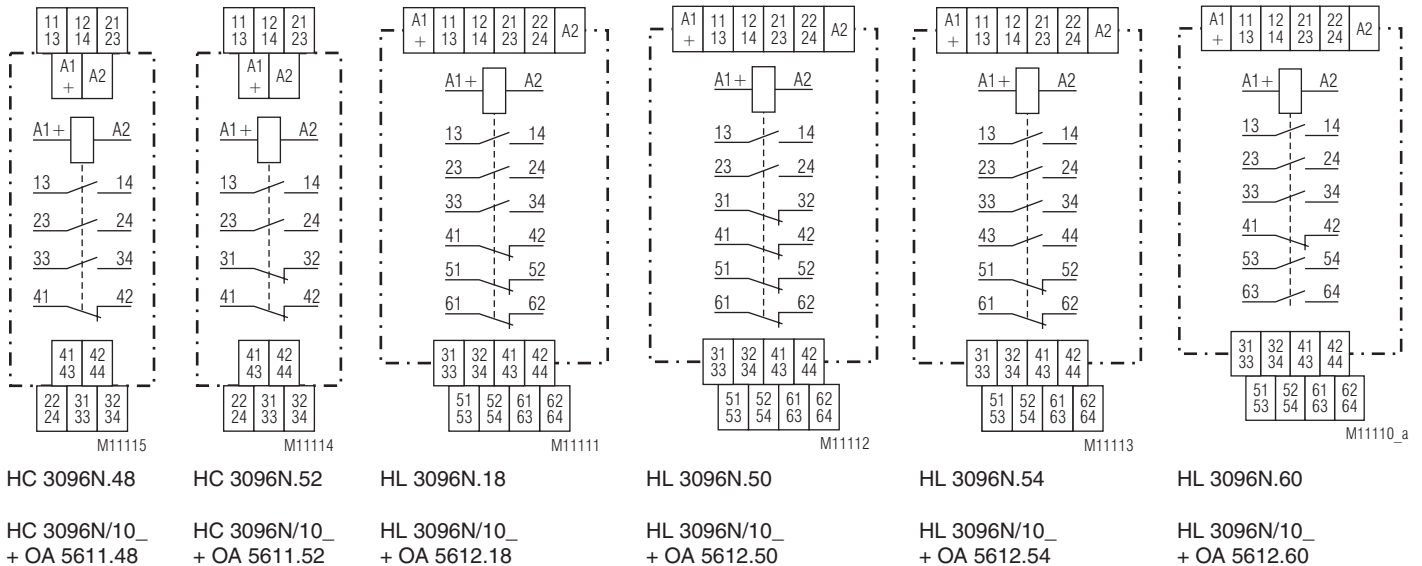
Features

- According to DIN EN 61810-1, IEC 60664-1, IEC/EN 60 947-5-1
- With forcibly guided contacts according to DIN EN 50205
- Models with soldered in or plug-in PCB safety relay consisting of:
 - plug in socket HC 3096N and safety relay OA 5611
 - plug in socket HL 3096N and safety relay OA 5612
- With polarity protected diode
- Optionally with free-wheeling diode across A1+ and A2
- Optionally AgNi + 0,2 µm Au or AgNi + 5 µm Au
- For DIN rail mounting according IEC/EN 60715
- HC 3096N: width 18 mm
- HL 3096N: width 36 mm

Approvals and Markings



Circuit Diagrams



Technical Data

Input

Nominal voltage U_N:	DC 24, 60, 110 V other voltages on request
Voltage range:	0.8 ... 1.1 U_N
Nominal consumption	
HC 3096N:	0.6 W
HL 3096N:	0.8 W
HL 3096N.50:	1.0 W

Output

Contacts:	
HC 3096N.52, OA 5611.52:	2 NO and 2 NC contacts
HC 3096N.48, OA 5611.48:	3 NO and 1 NC contacts
HL 3096N.18, OA 5612.18:	3 NO and 3 NC contacts
HL 3096N.50, OA 5612.50:	2 NO and 4 NC contacts
HL 3096N.54, OA 5612.54:	4 NO and 2 NC contacts
HL 3096N.60, OA 5612.60:	5 NO and 1 NC contacts
Contact material:	AgNi + 0,2 μ m Au, AgNi + 5 μ m Au other on request

Contact type:	spring contact
Operate time:	typical 20 ms
Release time:	typical 6 ms
Nominal output voltage:	AC 250 V

Thermal current I_{th}	
HC 3096N:	3 x 5 A
HL 3096N:	4 x 5 A

Switching capacity

to AC 15		
NO contact:	3 A / AC 230 V	IEC/EN 60 947-5-1
NC contact:	2 A / AC 230 V	IEC/EN 60 947-5-1
to DC 13		
NO contact:	2 A / DC 24 V	IEC/EN 60 947-5-1
NC contact:	2 A / DC 24 V	IEC/EN 60 947-5-1
according to DC 13		
NO contact:	4 A / 24 V at 0.1 Hz	
NC contact:	4 A / 24 V at 0.1 Hz	

Electrical life

HC 3096N	
to AC 230 V / 5 A $\cos\phi = 1$:	$\geq 2 \times 10^5$ switching cycles
HL 3096N	
at DC 24 V / 5 A ohmic:	$\geq 2 \times 10^5$ switching cycles

Permissible switching

frequency:	10 switching cycles / s
Switching voltage min./max.:	AC/DC 10 V / DC 250 V, AC 400 V ²⁾ (100 mV / AC/DC 60 V) ¹⁾
Switching current min./max.:	10 mA (typical values) / 5 A (1 mA / 0,3 A) ¹⁾
Switching power min./max.:	0.3 VA / 200 VA (1 mVA / 7 VA) ¹⁾ 0.1 W / 200 W (1 mW / 7 W) ¹⁾

¹⁾ Values for AgNi-Contacts + 5 μ m Au

²⁾ AC 250 V at HC 3096

Short circuit strength

max. fuse rating:	6 A gL	IEC/EN 60 947-5-1
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Mechanical life:	$\geq 50 \times 10^6$ switching cycles
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General Data

Operating mode:	Continuous operation
Temperature range:	- 40 ... + 55°C

Clearance and creepage distances

rated impulse voltage / pollution degree	
HC 3096N:	2.5 kV / 2 (basis insulation) IEC 60 664-1
HL 3096N:	4 kV / 2 (basis insulation) IEC 60 664-1

EMC

Electrostatic discharge:	8 kV (air)	IEC/EN 61 000-4-2
HF irradiation:	10 V / m	IEC/EN 61 000-4-3
Fast transient:	4 kV	IEC/EN 61 000-4-4
Surge voltages between wires for power supply:	1 kV	IEC/EN 61 000-4-5
between wire and ground:	2 kV	IEC/EN 61 000-4-5
HF-wire guided:	10 V	IEC/EN 61 000-4-6
Interference suppression:	Limit value class B	EN 55 011

Technical Data

Degree of protection

Housing:	IP 40	IEC/EN 60 529
Terminals:	IP 20	IEC/EN 60 529
Housing:	Thermoplastic	
Vibration resistance:	Amplitude 0.35 mm	
	Frequency 10 ... 55 Hz, IEC/EN 60 068-2-6	
Climate resistance:	Humid heat	IEC/EN 60 068-2-30

Terminal designation:

Terminal designation:	EN 50 005	
Wire connection:	0.5 ... 2,5 mm ² solid 0.5 ... 2,5 mm ² flexible	
Wire fixing:	Captive slotted screw	
Mounting:	DIN rail	IEC/EN 60 715

Weight

HC 3096N:	approx. 71 g
HL 3096N:	approx. 90 g

Dimensions

Width x height x depth

HC 3096N:	18 x 106 x 65 mm
HL 3096N:	36 x 106 x 65 mm

Classification to DIN EN 50155

Vibration and shock resistance:	Category 1, Class B	IEC/EN 61 373
Protective coating of the PCB:	No	

Standard Type

HC 3096N.48/400	DC 24 V
Article number:	0066000
• Output:	3 NO, 1 NC contact
• Contact material:	AgNi + 0.2 μ m Au
• Width:	18 mm
HL 3096N.54/400	DC 24 V
Artikelnummer:	0066040
• Output:	4 NO, 2 NC contact
• Contact material:	AgNi + 0.2 μ m Au
• Width:	36 mm

Ordering example

H_3096N. / /61 DC 24 V	
	Nominal voltage
	with UL approval
	0: Ag Ni
	1: AgNi + 5 μ m Au
	0: Standard
	4: with LED
	9: with free-wheeling diode and LED
	Contacts
	C: 4 Contacts; width: 18 mm
	L: 6 Contacts; width: 36 mm

Variants

Plug in socket

H_ 3096N /102:

Plug in socket with
free-wheeling diode and LED

H_ 3096N /103:

Plug in socket with LED

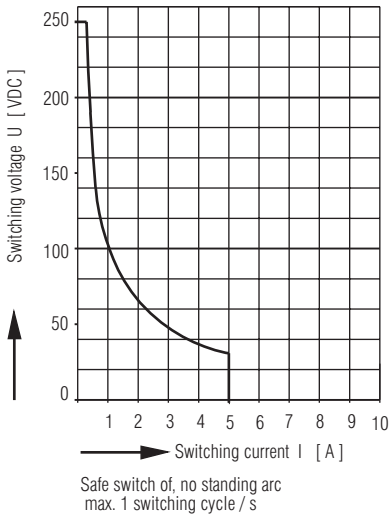
further variants on request

Ordering example for variants

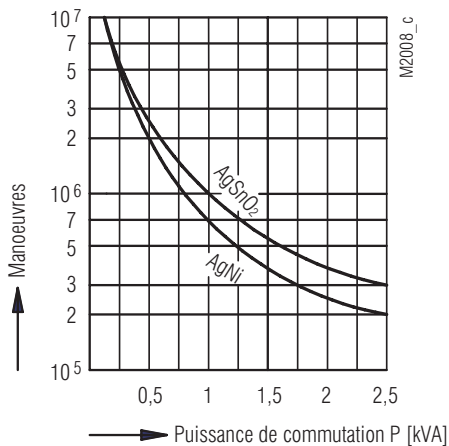
H_ 3096N / 10 _ /61 DC 24 V

- Nominal voltage
- with UL-approval
- 2: Plug in socket with
free-wheeling diode and LED
- 3: Plug in socket with LED
- 0: Standard
- 1: Plug in socket
- C: 4 Contacts; width: 18 mm
- L: 6 Contacts; width: 36 mm

Characteristic



Arc limit curve under resistive load



Contact service life

Connection example for HC 3096N/10_/61

Relay: OA 5611.52 \approx 2 NO contacts and 2 NC contacts (Standard)

Terminal	Contact	Contact-type	Connection
11, 13, 12, 14	1	NO contact	13, 14
21, 23, 22, 24	2	NO contact	23, 24
41, 43, 42, 44	3	NC contact	31, 32
31, 33, 32, 34	4	NC contact	41, 42

The terminal assignment is according to the diagram on the installed relay

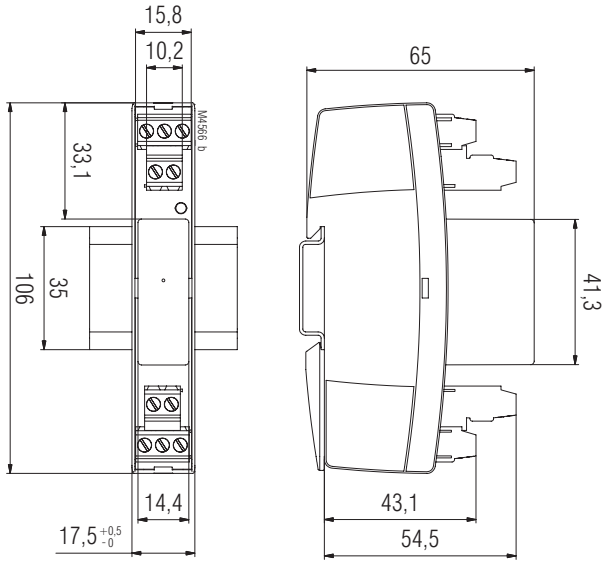
Connection example for HC 3096N/10_/61

Relay: OA 5612.18 \approx 3 NO contacts and 3 NC contacts (Standard)

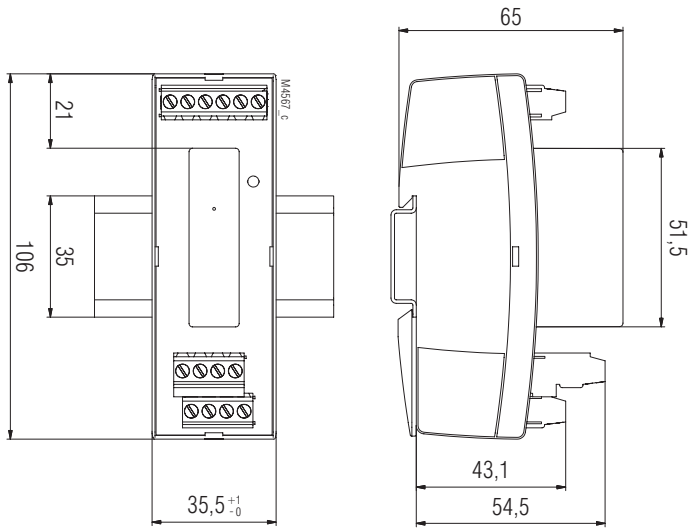
Terminal	Contact	Contact-type	Connection
11, 13, 12, 14	1	NO contact	13, 14
21, 23, 22, 24	2	NO contact	23, 24
41, 43, 42, 44	3	NO contact	33, 34
31, 33, 32, 34	4	NC contact	41, 42
51, 53, 52, 54	5	NC contact	51, 52
61, 63, 62, 64	6	NC contact	61, 62

The terminal assignment is according to the diagram on the installed relay

Dimensions with safety relay

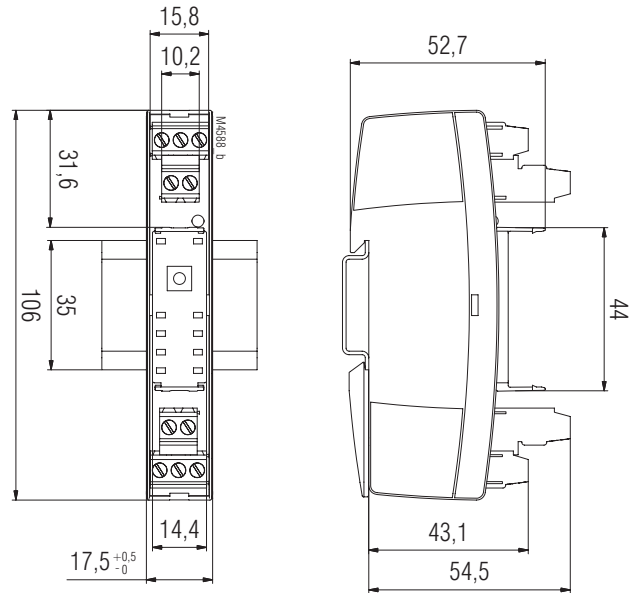


HC 3096N

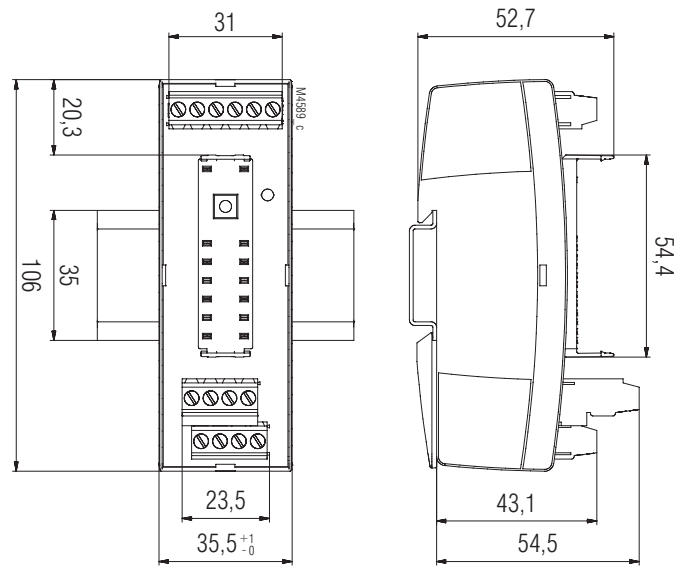


HL 3096N

Dimensions with plug in socket



HC 3096N



HL 3096N