

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 mm<sup>2</sup> (12-24 AWG) reduces thermal load on wires

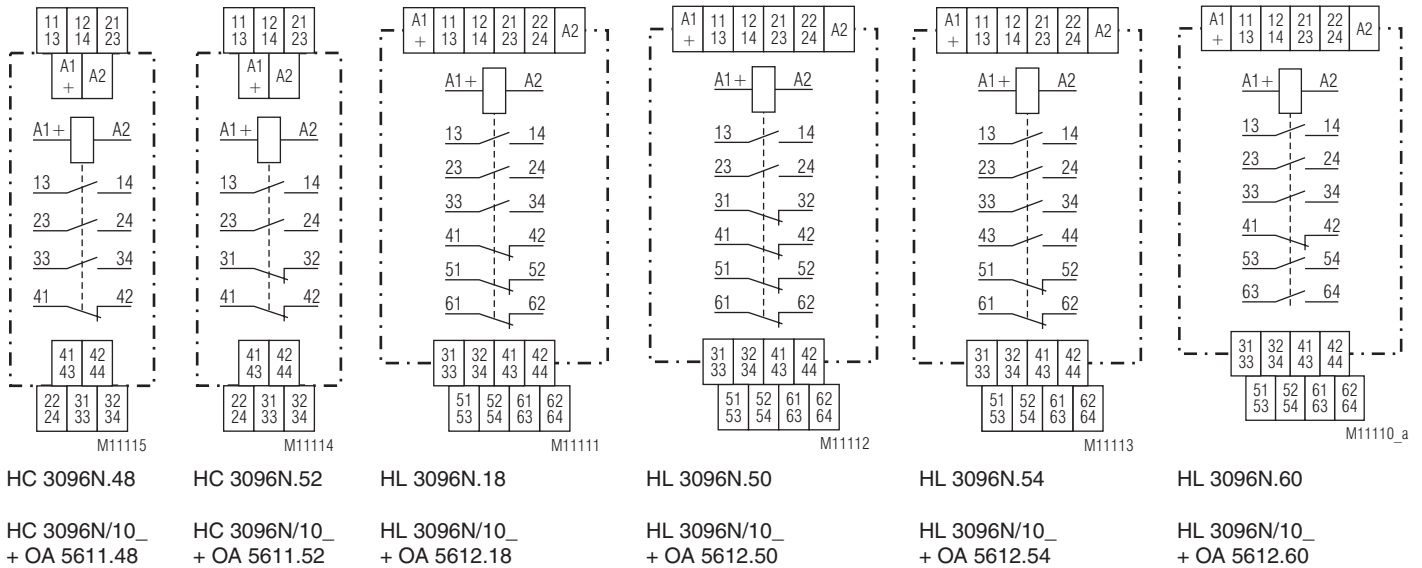
**Features**

- 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

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

### Output

<b>Contacts:</b>	
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
<b>Contact material:</b>	AgNi + 0,2 $\mu$ m Au, AgNi + 5 $\mu$ m Au other on request

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

<b>Thermal current <math>I_{th}</math></b>	
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:

frequency:	10 switching cycles / s
<b>Switching voltage min./max.:</b>	AC/DC 10 V / DC 250 V, AC 400 V <sup>2)</sup> (100 mV / AC/DC 60 V) <sup>1)</sup>

<b>Switching current min./max.:</b>	10 mA (typical values) / 5 A (1 mA / 0,3 A) <sup>1)</sup>
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<b>Switching power min./max.:</b>	0.3 VA / 200 VA (1 mVA / 7 VA) <sup>1)</sup> 0.1 W / 200 W (1 mW / 7 W) <sup>1)</sup>
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<sup>1)</sup> Values for AgNi-Contacts + 5  $\mu$ m Au

<sup>2)</sup> AC 250 V at HC 3096

### Short circuit strength

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

<b>Operating mode:</b>	Continuous operation
<b>Temperature range:</b>	- 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:

<b>Housing:</b>	Thermoplastic
<b>Vibration resistance:</b>	Amplitude 0.35 mm Frequency 10 ... 55 Hz, IEC/EN 60 068-2-6
<b>Climate resistance:</b>	Humid heat IEC/EN 60 068-2-30

### Terminal designation:

<b>Terminal designation:</b>	EN 50 005
<b>Wire connection:</b>	0.5 ... 2,5 mm <sup>2</sup> solid 0.5 ... 2,5 mm <sup>2</sup> flexible

### Wire fixing:

<b>Wire fixing:</b>	Captive slotted screw
<b>Mounting:</b>	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

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

### Standard Type

HC 3096N.48/400 DC 24 V	
Article number:	0066000
• Output:	3 NO, 1 NC contact
• Contact material:	AgNi + 0.2 $\mu$ 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 $\mu$ m Au
• Width:	36 mm

### Ordering example

H_3096N. / /61 DC 24 V	
_____	Nominal voltage
_____	with UL approval
_____	0: Ag Ni
_____	1: AgNi + 5 $\mu$ 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

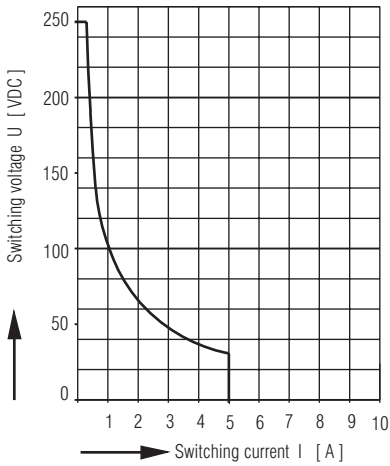
0: Standard

1: Plug in socket

C: 4 Contacts; width: 18 mm

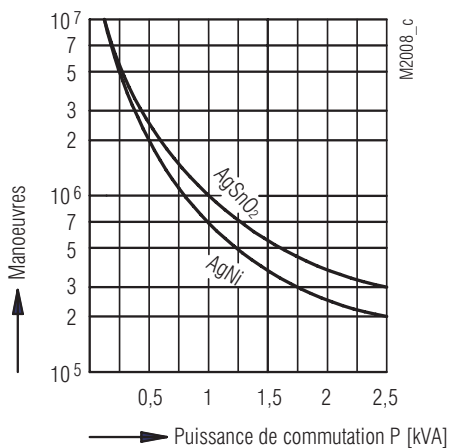
L: 6 Contacts; width: 36 mm

## Characteristic



Safe switch of, no standing arc  
max. 1 switching cycle / s

## Arc limit curve under resistive load



## Contact service life

## Connection example for HC 3096N/10\_/61

Relay: OA 5611.52 ≅ 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

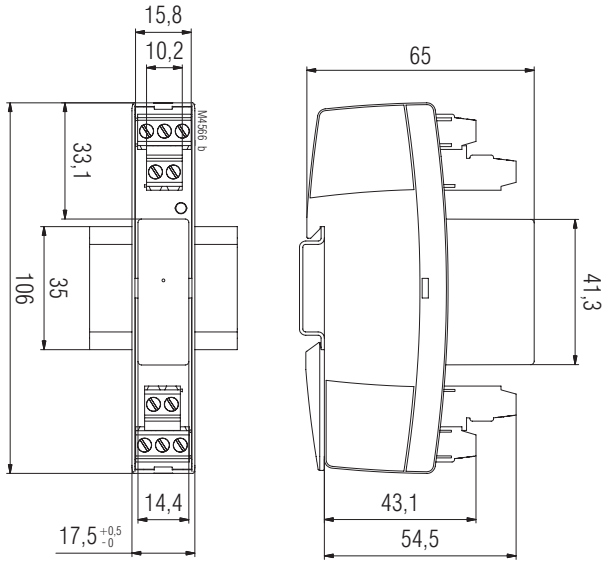
## Connection example for HC 3096N/10\_/61

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

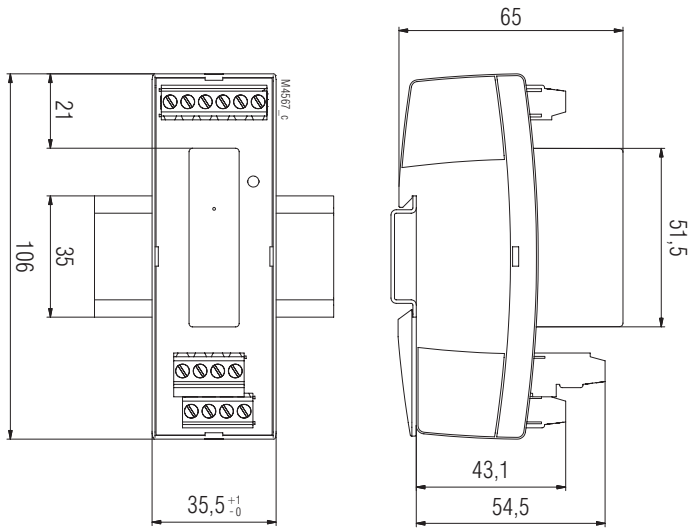
Terminal	Contact	Contact-type	Connection
11, 13, 12, 14	1	NO contact	13, 14
21, 23, 22, 24	2	NO contact	23, 24
41, 43, 42, 44	3	NO contact	33, 34
31, 33, 32, 34	4	NC contact	41, 42
51, 53, 52, 54	5	NC contact	51, 52
61, 63, 62, 64	6	NC contact	61, 62

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

Dimensions with safety relay

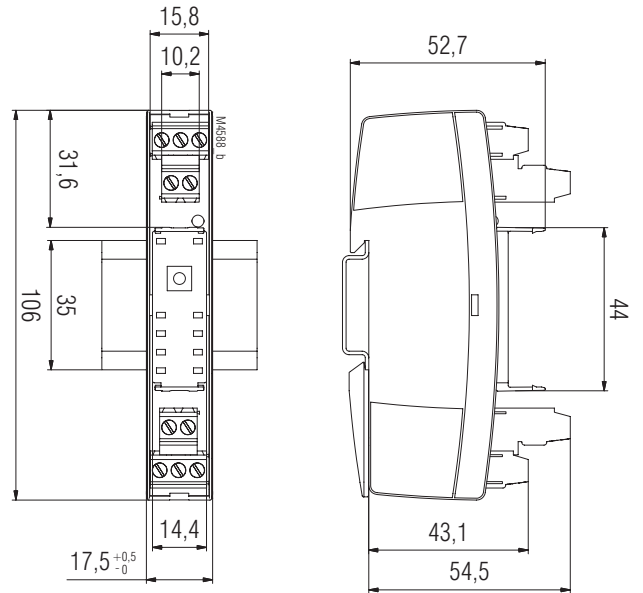


HC 3096N

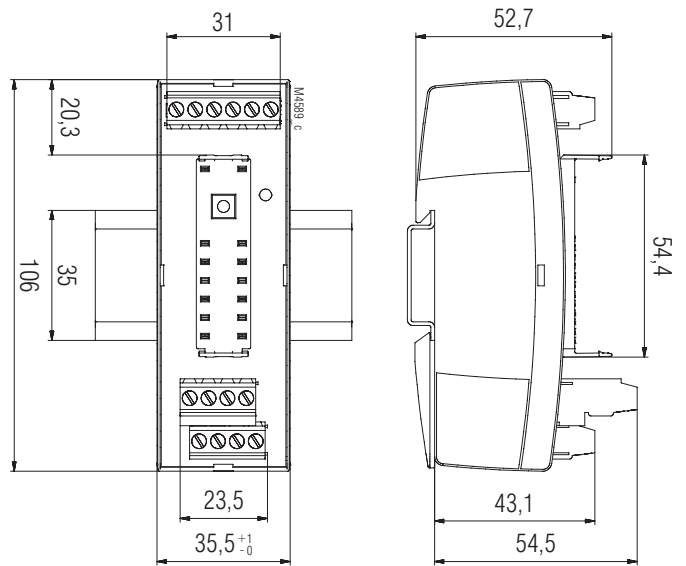


HL 3096N

Dimensions with plug in socket



HC 3096N



HL 3096N