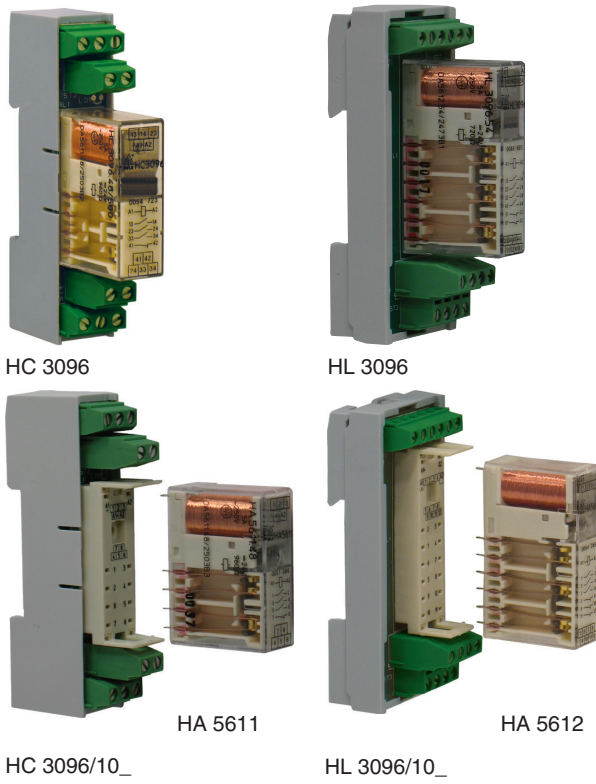


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- According to DIN EN 61810-1, IEC 60664-1, IEC/EN 60 947-5-1
- With forcibly guided contacts according to IEC 61810-3
- Safety relay soldered on PCB
- Max. 6 output contacts
- Contact material AgNi + 0.2 µm Au
- Option plug-in type
  - HA/OA 5611 on socket HC 3096/10\_
  - HA/OA 5612 on socket HL 3096/10\_
- Optional with free-wheeling diode across A1/A2
- Optional AgNi + 5 µm Au or AgSNO + 0.2 µm Au
- DIN rail or screw mounting
- Width HC 3096: 18 mm  
HL 3096: 38 mm

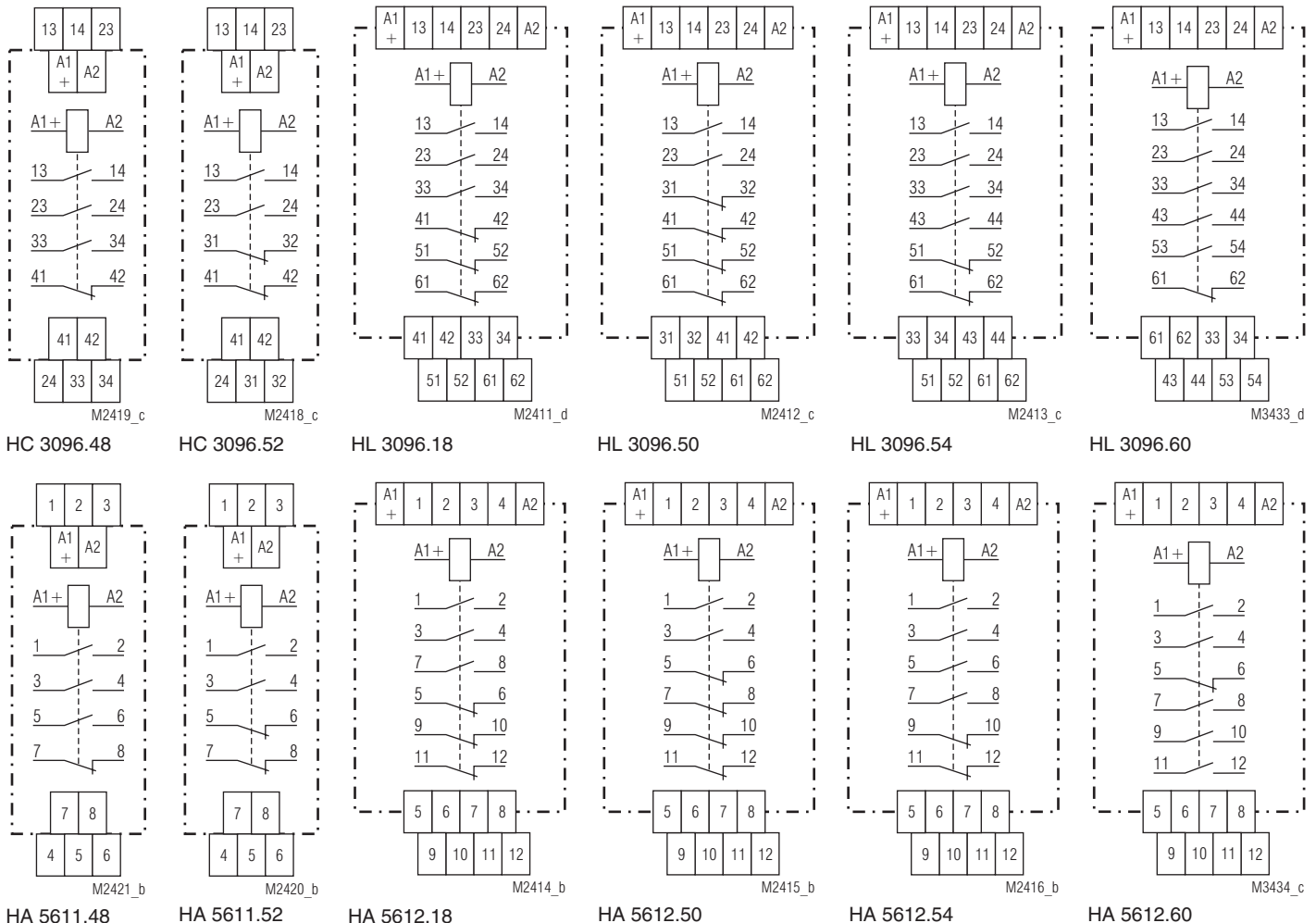
**Approvals and Markings**



**Connection Terminals**

Terminal designation	Signal description
A1+	L / +
A2	N / -
HC 3096: 41, 42 / 7, 8 HL 3096: 61, 62 / 11, 12	NC contact
All other contacts see relevant circuit diagram	NC contacts / or NO contacts

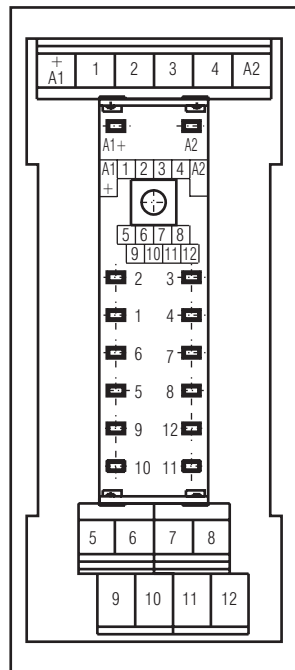
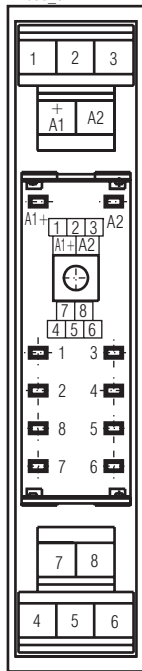
**Circuit Diagrams**



All technical data in this list relate to the state at the moment of edition. We reserve the right for technical improvements and changes at any time.

## Socket Labeling

M2358\_b



M2417\_b

HC 3096/10\_

HL 3096/10\_

## Technical Data

### Input

<b>Nominal voltage <math>U_N</math>:</b>	DC 6, 12, 24, 48, 60, 110 V (other voltages on request)
<b>Voltage range:</b>	0.8 ... 1.1 $U_N$
<b>Nominal consumption</b>	
HC 3096:	0.6 W
HL 3096:	0.8 W (at HL 3096.50, HA 5612.50: 1 W)

### Output

<b>Contacts:</b>	
HC 3096.52, HA 5611.52:	2 NO and 2 NC contacts
HC 3096.48, HA 5611.48:	3 NO and 1 NC contacts
HL 3096.18, HA 5612.18:	3 NO and 3 NC contacts
HL 3096.50, HA 5612.50:	2 NO and 4 NC contacts
HL 3096.54, HA 5612.54:	4 NO and 2 NC contacts
HL 3096.60, HA 5612.60:	5 NO and 1 NC contacts
<b>Contact material:</b>	AgNi + 0.2 $\mu\text{m Au}$
<b>Measured nominal voltage:</b>	AC 250 V
<b>Contact type:</b>	spring contact
<b>Operate time:</b>	typical 20 ms
<b>Release time:</b>	typical 15 ms
<b>Nominal output voltage:</b>	AC 250 V
<b>Thermal current <math>I_{th}</math></b>	
HC 3096:	3 x 5 A
HL 3096:	4 x 5 A
<b>Switching capacity</b>	
to AC 15:	
NO contact:	2 A / AC 230 V IEC/EN 60 947-5-1
NC contact:	1 A / AC 230 V IEC/EN 60 947-5-1
<b>Electrical life</b>	
NO contact:	
to AC 15 at 3 A, AC 230 V:	1.5 x 10 <sup>5</sup> switching cycles / AgNi
NO contact:	
to AC 15 at 2 A, AC 230 V:	3 x 10 <sup>5</sup> switching cycles / AgNi
NC contact:	
to AC 15 at 2 A, AC 230 V:	1 x 10 <sup>5</sup> switching cycles / AgNi
<b>Permissible switching frequency:</b>	10 switching cycles / s
<b>Switching voltage min./max.:</b>	AC/DC 10 V / DC 250 V, AC 400 V (100 mV / AC/DC 60 V for AgNi-Contacts + 5 $\mu\text{m Au}$ )
<b>Switching current min./max.:</b>	10 mA / 5 A (2 mA / 0.3 A for AgNi-Contacts + 5 $\mu\text{m Au}$ )

## Technical Data

<b>Switching power min./max.:</b>	0.1 VA / 1250 VA (10 mVA / 7 VA for AgNi-Contacts + 5 $\mu\text{m Au}$ )
	0.1 W / 200 W (10 mW / 7 W for AgNi-Contacts + 5 $\mu\text{m Au}$ )
<b>Short circuit strength</b>	
<b>max. fuse rating:</b>	6 A gG / gL IEC/EN 60 947-5-1
<b>Mechanical life:</b>	$\geq 50 \times 10^6$ switching cycles

## General Data

<b>Operating mode:</b>	Continuous operation
<b>Temperature range:</b>	
Operation:	- 40 ... + 55 °C
Storage:	- 40 ... + 70 °C
<b>Relative air humidity:</b>	93 % at 40 °C
<b>Altitude:</b>	< 2.000 m
<b>Clearance and creepage distances</b>	
rated impulse voltage / pollution degree	
Input / output:	2.5 kV / 2 IEC 60 664-1
output / output:	2.5 kV / 2 IEC 60 664-1
<b>Overvoltage category:</b>	II
<b>Insulation test voltage, type test:</b>	2.5 kV; 1 min
<b>EMC</b>	
<b>Electrostatic discharge:</b>	8 kV (air) IEC/EN 61 000-4-2
<b>HF-irradiation</b>	
80 MHz ... 1 GHz:	10 V / m IEC/EN 61 000-4-3
1 GHz ... 2,7 GHz:	10 V / m IEC/EN 61 000-4-3
<b>Fast transients:</b>	4 kV IEC/EN 61 000-4-4
<b>Surge voltages</b>	
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
<b>Interference suppression:</b>	Limit value class B EN 55 011
<b>Degree of protection</b>	
Housing:	IP 40 IEC/EN 60 529
Terminals:	IP 20 IEC/EN 60 529
<b>Housing:</b>	Thermoplastic
<b>Vibration resistance:</b>	Amplitude 0.35 mm IEC/EN 60 068-2-6 frequency 10 ... 55 Hz
<b>Climate resistance:</b>	Humid heat IEC/EN 60 068-2-30
<b>Terminal designation:</b>	EN 60 947-1
<b>Wire connection:</b>	0.14 ... 1.5 mm <sup>2</sup> solide 0.14 ... 1.5 mm <sup>2</sup> flexible Captive slotted screw
<b>Wire fixing:</b>	0.4 Nm
<b>Fixing torque:</b>	DIN rail mounting (IEC/EN 60715) or screw mounting M4, 90 mm hole pattern, with additional clip available as accessory
<b>Mounting:</b>	

## Weight

HC 3096:	61 g
HC 3096/100:	33 g
HL 3096:	74 g
HL 3096/100:	51 g
HA 5611:	29 g
HA 5612:	32 g

## Dimensions

<b>Width x height x depth</b>	
HC 3096:	18 x 88 x 48.6 mm
HL 3096:	37.8 x 88 x 41.3 mm
<b>Socket HC 3096 with safety relay HA 5611:</b>	18 x 88 x 57.2 mm
<b>Socket HL 3096 with safety relay HA 5612:</b>	37.8 x 88 x 49.4 mm

## Classification to DIN EN 50155

**Vibration and shock resistance:** Category 1, Class B IEC/EN 61 373  
**Ambient temperature:** T1 and T2 compliant  
 T3 and TX with operational limitations  
**Voltage range:** 0.7 ... 1.25  $U_N$  with operational limitations  
**Protective coating of the PCB:** No

## Standard Type

HL 3096.18 DC 24 V  
 Article number: 0048894  
 • Output: 3 NO, 3 NC contacts  
 • Contact material: AgNi + 0.2  $\mu$ m Au  
 • Width: 38 mm

HC 3096.52 DC 24 V  
 Article number: 0049269  
 • Output: 2 NO, 2 NC contacts  
 • Contact material: AgNi + 0.2  $\mu$ m Au  
 • Width: 18 mm

## Variants

Socket  
 H\_ 3096 /100: Socket  
 H\_ 3096 /101: Socket with free-wheeling diode  
 H\_ 3096 /102: Socket with free-wheeling diode and LED  
 H\_ 3096 /103: Socket with LED

Safety relay:  
 HA 5611.\_\_\_, HA 5612.\_\_\_: Contact material AgNi + 0.2  $\mu$ m Au  
 HA 5611.\_\_\_/001, HA 5612.\_\_\_/001: Contact material AgNi + 5  $\mu$ m Au  
 HA 5611.\_\_\_/002, HA 5612.\_\_\_/002: Contact material AgSnO + 0.2  $\mu$ m Au

other variants on request

## Ordering example for variants

H\_ 3096. \_\_ / \_\_ \_\_ DC 24 V

Nominal voltage

0: AgNi  
 1: AgNi + 5  $\mu$ m Au  
 2: AgSnO

0: standard  
 1: wash proof

0: standard  
 4: with LED  
 5: with free-wheeling diode  
 8: with LED and rectifier (for AC)  
 9: with free-wheeling diode and LED

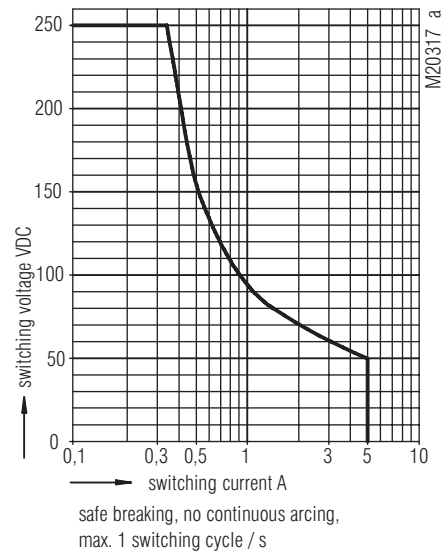
Contacts

C: 4 Contacts; Width: 18 mm  
 L: 6 Contacts; Width: 38 mm

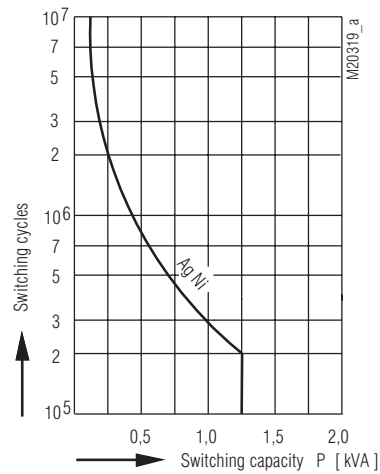
## Accessories

ET 4086-0-2: Additional clip for screw mounting  
 Article number: 0046578

## Characteristics



Arc limit curve under resistive load



Contact service life

