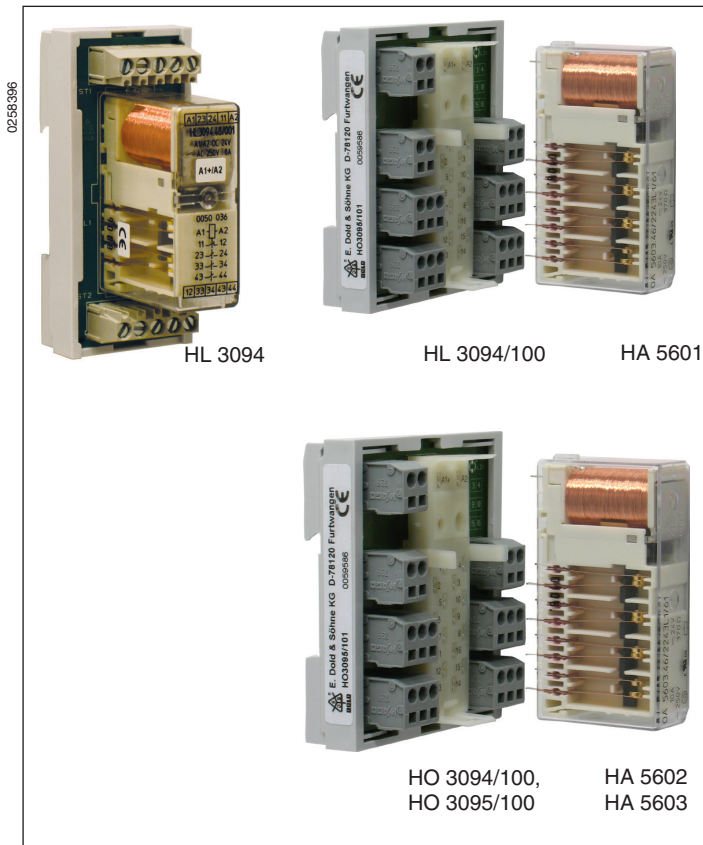


**SAFEMASTER**  
Interface Module  
HL 3094, HO 3094, HO 3095

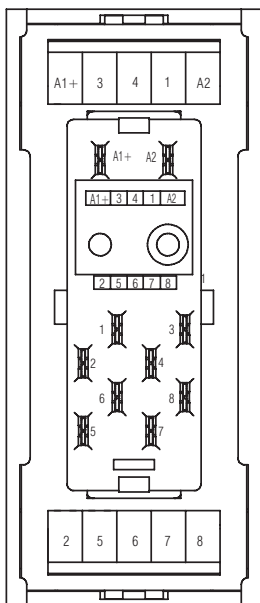


- According to IEC/EN 60255, IEC/EN 61810-1
- With **positively guided** contacts according to EN 50 205
- Low nominal consumption: 0.75 W / 1 W / 1.25 W
- Max. 8 output contacts
- Contact material AgNi + 0.2 µm Au
- High thermal current  $I_{th} = 8$  A
- Large temperature range: -25 ... +55°C
- Safety relay soldered on board
- Optionally AgNi + 5 µm Au or AgSnO + 0.2 µm Au
- Optionally with free-wheeling diode across A1/A2
- Optionally plug-in type  
HA 5601 on socket HL 3094/10\_  
HA 5602 on socket HO 3094/10\_  
HA 5603 on socket HO 3095/10\_
- HL: 38 mm width  
HO: 73.3 mm width

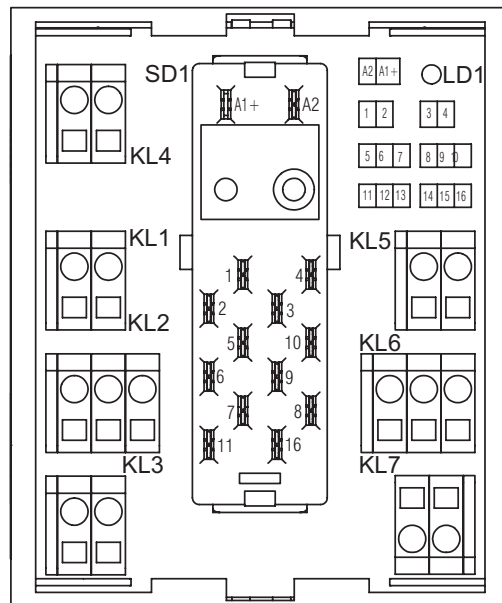
Approvals and Marking



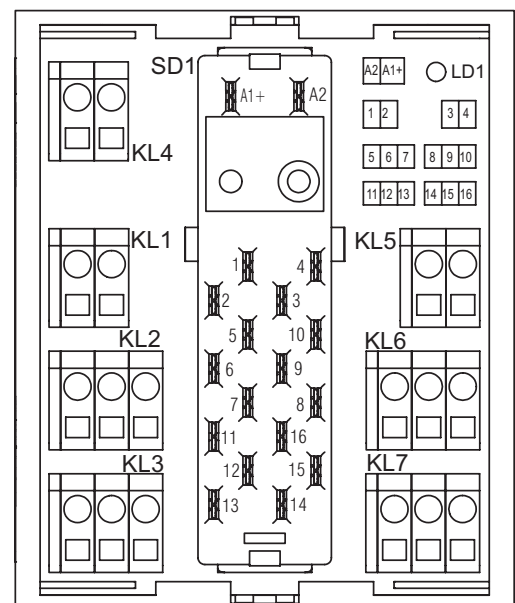
Socket Labeling



HL 3094/100, HL 3094/101

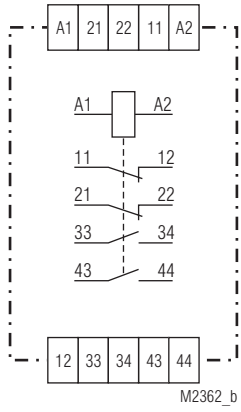


HO 3094/100, HO 3094/101  
HO 3094/102, HO 3094/103

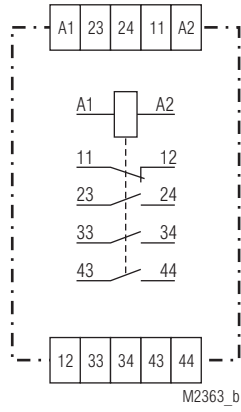


HO 3095/100, HO 3095/101  
HO 3095/102, HO 3095/103

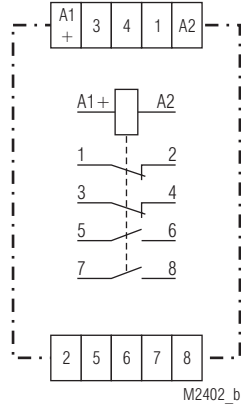
Circuit Diagrams



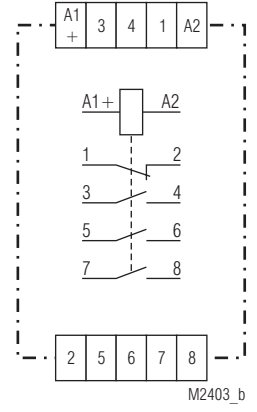
HL 3094.52



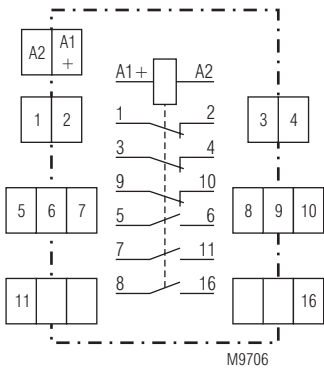
HL 3094.48



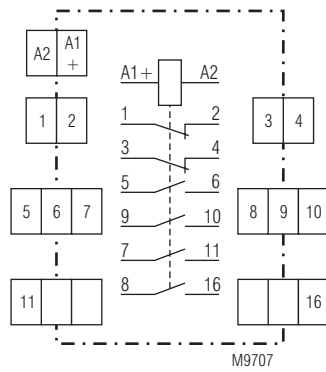
HA 5601.52



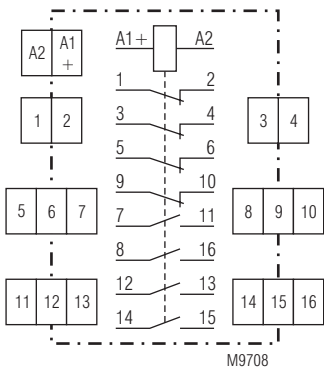
HA 5601.48



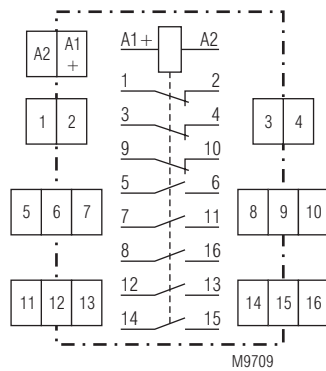
HA 5602.18



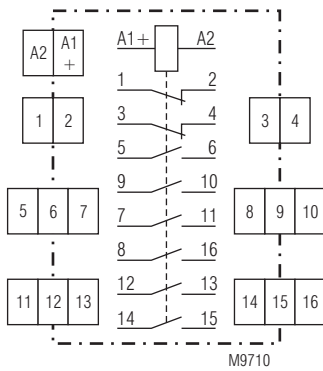
HA 5602.54



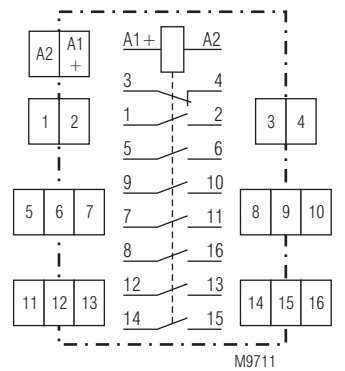
HA 5603.57



HA 5603.58



HA 5603.59



HA 5603.63

Technical Data	
<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>	
HL 3094:	0.75 W
HO 3094:	1 W
HO 3095:	1.25 W
<b>Output</b>	
<b>Contacts</b>	
HL 3094.52, HA 5601.52:	2 NO, 2 NC contacts
HL 3094.48, HA 5601.48:	3 NO, 1 NC contacts
HO 3094.18, HA 5602.18:	3 NO, 3 NC contacts
HO 3094.54, HA 5602.54:	4 NO, 2 NC contacts
HO 3095.57, HA 5603.57:	4 NO, 4 NC contacts
HO 3095.58, HA 5603.58:	5 NO, 3 NC contacts
HO 3095.59, HA 5603.59:	6 NO, 2 NC contacts
HO 3095.63, HA 5603.63:	7 NO, 1 NC contacts
<b>Contact material:</b>	AgNi + 0.2 $\mu$ m Au
<b>Contact type:</b>	spring contact
<b>Operate time:</b>	typical 27 ms
<b>Release time:</b>	typical 5 ms
<b>Nominal output voltage:</b>	AC 250 V
<b>Thermal current <math>I_{th}</math>:</b>	3 x 8 A
<b>Switching capacity</b>	
to AC 15	
NO contact:	5 A / AC 230 V IEC/EN 60 947-5-1
NC contact:	2 A / AC 230 V IEC/EN 60 947-5-1
<b>Electrical life</b>	IEC/EN 60 947-5-1
at 1 s x On, 1 s Off	
at AC 230 V 5 A cos $\varphi$ = 1:	> 7 x 10 <sup>5</sup> switching cycles / AgSnO > 5 x 10 <sup>5</sup> switching cycles / AgNi
at AC 230 V 8 A cos $\varphi$ = 1:	> 3 x 10 <sup>5</sup> switching cycles / AgSnO > 2 x 10 <sup>5</sup> switching cycles / AgNi
to AC 15 at 1 A, AC 230 V:	1.5 x 10 <sup>6</sup> switching cycles
<b>Permissible switching frequency:</b>	10 switching cycles / s
<b>Switching voltage min./max.:</b>	AC/DC 10 V / DC 250 V, AC 380 V (100 mV / AC/DC 60 V for AgNi-contacts + 5 $\mu$ m Au)
<b>Switching current min./max.:</b>	0.3 A / 8 A (1 mA / 0.3 A for AgNi-contacts + 5 $\mu$ m Au)
<b>Switching power min./max.:</b>	3 VA / 2000 VA (1 mVA / 7 VA for AgNi-contacts + 5 $\mu$ m Au) 3 W / 240 W (1 mW / 7 W for AgNi-contacts + 5 $\mu$ m Au)
<b>Mechanical life:</b>	> 30 x 10 <sup>6</sup> switching cycles
<b>General Data</b>	
<b>Operating mode:</b>	Continuous operation
<b>Temperature range:</b>	- 25 ... + 55°C
<b>Clearance and creepage distances</b>	
rated impuls voltage / pollution degree:	2.5 kV / 2 (basis insulation) IEC 60 664-1
<b>EMC</b>	
Electrostatic discharge:	8 kV (air) IEC/EN 61 000-4-2
HF-irradiation:	10 V / m IEC/EN 61 000-4-3
Fast transients:	4 kV IEC/EN 61 000-4-4
Surge voltages between	
wires for power supply:	2 kV IEC/EN 61 000-4-5
between wire and ground:	4 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
<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 50 005

Technical Data	
<b>Wire connection:</b>	0.14 ... 4 mm <sup>2</sup> solide 0.14 ... 2.5 mm <sup>2</sup> flexible
<b>Wire fixing</b>	
HL 3094:	box terminals
HO 3094, HO 3095:	cage clamp terminals
<b>Mounting:</b>	DIN rail IEC/EN 60 715
<b>Weight:</b>	
HL 3094 (incl. relay):	approx. 120 g
HL 3094/100:	approx. 58 g
HO 3094 (incl. relay):	approx. 173 g
HO 3095 (incl. relay):	approx. 183 g
HO 3094/100, HO 3095/100:	approx. 93 g
HA 5601:	approx. 78 g
HA 5602:	approx. 85 g
HA 5603:	approx. 95 g

Dimensions	
<b>Width x height x depth</b>	
Interface module HL 3094:	37.8 x 88 x 55.2 mm
Interface module HO 3094:	73.8 x 88 x 51.9 mm
Interface module HO 3095:	73.8 x 88 x 51.9 mm
Socket HL 3094 with safety relay HA 5601:	37.8 x 88 x 65.5 mm
Socket HO 3094 with safety relay HA 5602:	73.8 x 88 x 59.9 mm
Socket HO 3095 with safety relay HA 5603:	73.8 x 88 x 59.9 mm

## Standard Type

HL 3094.52 DC 24 V

Article number:	0047426	stock item
• 2 NO, 2 NC contacts		
• Contact material:	AgNi10 + 0.2 µm Au	
• Nominal voltage U <sub>N</sub> :	DC 24 V	
• Width:	38 mm	

## Variants

Interface module:

H_309_/100:	Socket
H_309_/101:	Socket with free-wheeling diode
H_309_/102:	Socket with free-wheeling diode + LED
H_309_/103:	Socket with LED

Safety relay

HA 5601.___, HA 5602.___, HA 5603.___:	Contact material AgNi + 0.2 µm Au
HA 5601.___/001, HA 5602.___/001, HA 5603.___/001:	Contact material AgNi + 5 µm Au
HA 5601.___/002, HA 5602.___/002, HA 5603.___/002:	Contact material AgSnO + 0.2 µm Au

other variants on request

## Ordering example for variants

H_309_._._ / _._._	DC 24 V
	Nominal voltage
	0: Ag Ni
	1: AgNi + 5 µm 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
	4: HL 3094: 4 contacts HO 3094: 6 contacts
	5: HO 3095: 8 contacts
	L: Width: 38 mm
	O: Width: 74 mm