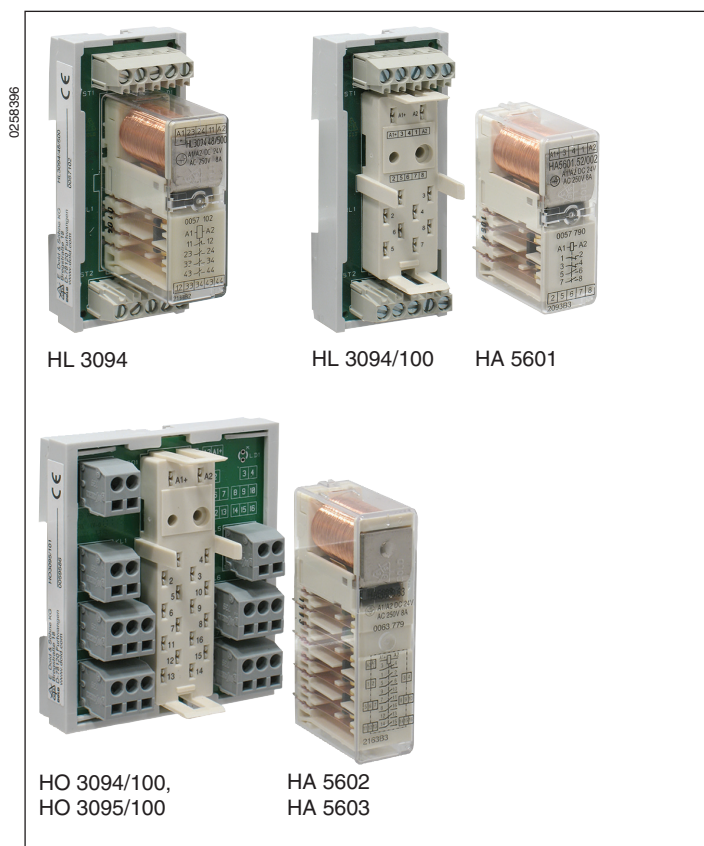


SAFEMASTER Interface Module HL 3094, HO 3094, HO 3095

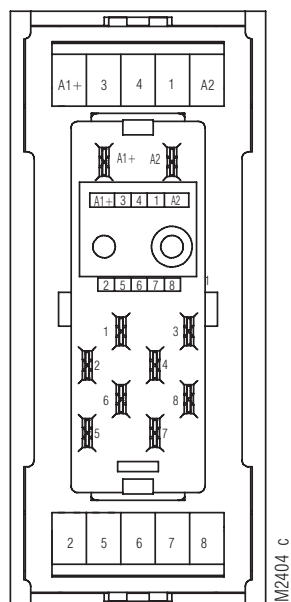


- According to DIN EN 61810-1, IEC 60664-1, IEC/EN 60947-5-1
- With forcibly guided contacts according to IEC 61810-3
- Low nominal consumption: 0.75 W / 1 W / 1.25 W
- Max. 8 output contacts
- Contact material AgNi + 0.2 µm Au
- High thermal current $I_{th} = 8$ A
- Large temperature range: - 40 ... + 55°C
- Safety relay soldered on PCB
- Optional AgNi + 5 µm Au or AgSnO + 0.2 µm Au
- Optional with free-wheeling diode across A1/A2
- Plug in relay option
 - HA 5601 on socket HL 3094/10_
 - HA 5602 on socket HO 3094/10_
 - HA 5603 on socket HO 3095/10_
- DIN rail or screw mounting
- HL: 38 mm width
- HO: 73.3 mm width

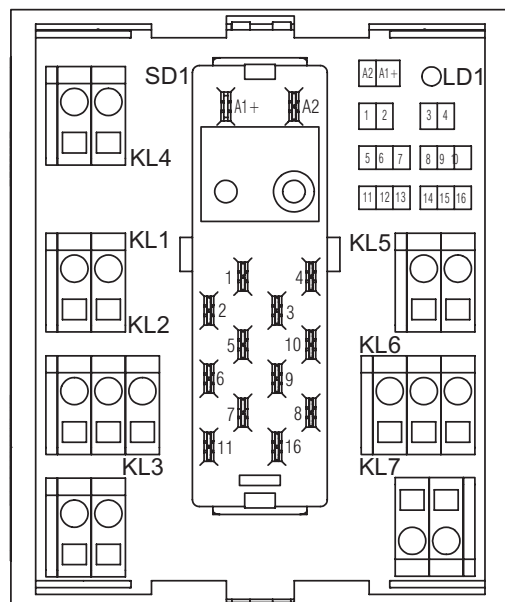
Approvals and Markings



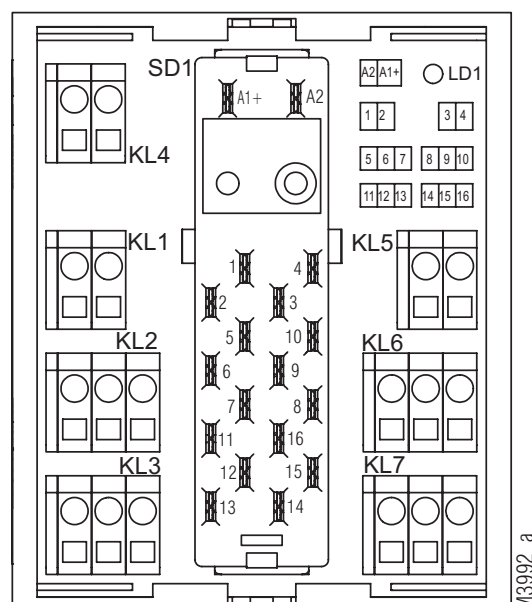
Socket Labeling



HL 3094/100, HL 3094/101

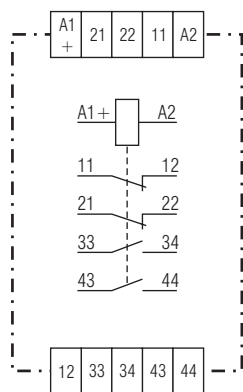


HO 3094/100, HO 3094/101
HO 3094/102, HO 3094/103

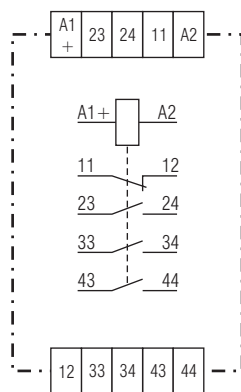


HO 3095/100, HO 3095/101
HO 3095/102, HO 3095/103

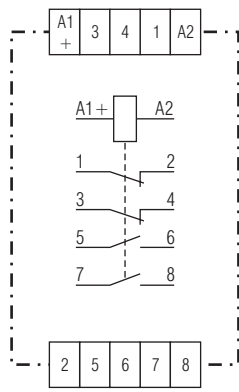
Circuit Diagrams



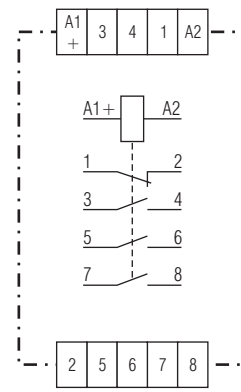
HL 3094.52



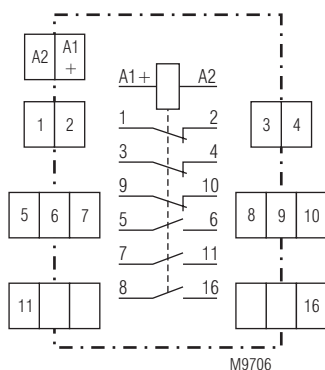
HL 3094.48



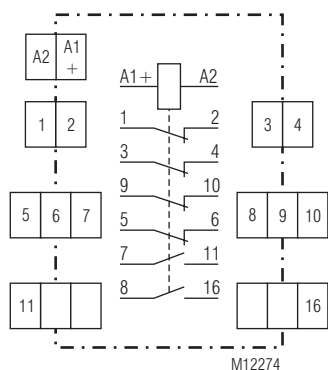
HA 5601.52



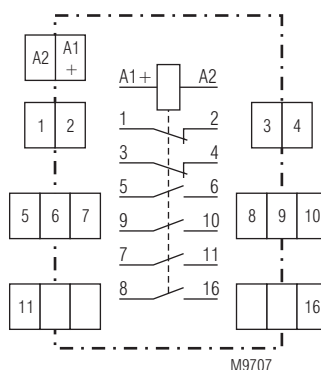
HA 5601.48



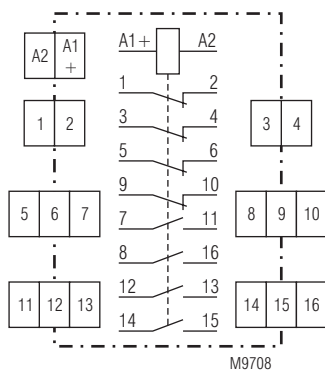
HA 5602.18



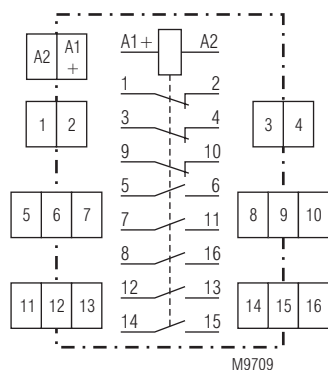
HA 5602.50



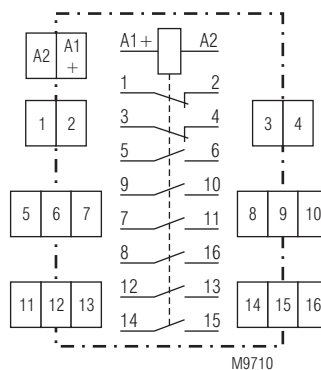
HA 5602.54



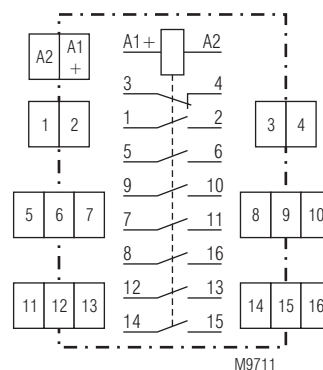
HA 5603.57



HA 5603.58



HA 5603.59



HA 5603.63

Connection Terminals

Terminal designation	Signal description
A1+	L / +
A2	N / -
11, 12 / 1, 2	NC contact
Contacts see relevant circuit diagram	NC contacts / or NO contacts

Technical Data		
Input		
Nominal voltage U _N :	DC 6, 12, 24, 48, 60, 110 V other voltages on request	
Voltage range:	0.8 ... 1.1 U _N	
Nominal consumption:		
HL 3094:	0.75 W	
HO 3094:	1 W	
HO 3095:	1.25 W	
Output		
Contacts		
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	
Contact material:	AgNi + 0.2 µm Au	
Measured nominal voltage:	AC 250 V	
Contact type:	spring contact	
Operate time:	≤ 40; typical 27 ms	
Release time:	≤ 10; typical 5 ms	
Thermal current I _{th} :	3 x 8 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
Electrical life	IEC/EN 60 947-5-1	
at 1 s x On, 1 s Off		
at AC 230 V 5 A cos φ = 1:	> 7 x 10 ⁵ switching cycles / AgSnO > 5 x 10 ⁵ switching cycles / AgNi > 3 x 10 ⁵ switching cycles / AgSnO > 2 x 10 ⁵ switching cycles / AgNi	
at AC 230 V 8 A cos φ = 1:	1.5 x 10 ⁶ switching cycles	
to AC 15 at 1 A, AC 230 V:		
Permissible switching frequency:	10 switching cycles / s	
Switching voltage min./max.:	AC/DC 10 V / DC 250 V, AC 400 V (100 mV / AC/DC 60 V for AgNi-contacts + 5 µm Au)	
Switching current min./max.:	10 mA / 8 A (2 mA / 0.3 A for AgNi-contacts + 5 µm Au)	
Switching power min./max.:	0.1 VA / 2000 VA (10 mVA / 7 VA for AgNi-contacts + 5 µm Au) 0,1 W / 240 W (10 mW / 7 W for AgNi-contacts + 5 µm Au)	
Short circuit strength		
max. fuse rating:	6 A gG / gL	IEC/EN 60 947-5-1
Mechanical life:	> 30 x 10 ⁶ switching cycles	
General Data		
Operating mode:	Continuous operation	
Temperature range:		
Operation:	- 40 ... + 55 °C	
Storage:	- 40 ... + 70 °C	
Relative air humidity:	93 % at 40 °C	
Altitude:	< 2.000 m	
Clearance and creepage distances		
rated impulse voltage / pollution degree:		
Input / Output:	4 kV / 2 (basis insulation)	IEC 60 664-1
Output / Output:	4 kV / 2 (basis insulation)	IEC 60 664-1
Overvoltage category:	III	
Insulation test voltage, type test:	2.5 kV; 1 min	

Technical Data		
EMC		
Electrostatic discharge:	8 kV (air)	IEC/EN 61 000-4-2
HF-irradiation		
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
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
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 IEC/EN 60 068-2-6 frequency 10 ... 55 Hz	
Climate resistance:	Humid heat IEC/EN 60 068-2-30	
Terminal designation:	EN 60 947-1	
Wire connection:	0.14 ... 4 mm ² solide 0.14 ... 2.5 mm ² flexible	
Wire fixing		
HL 3094:	box terminals	
HO 3094, HO 3095:	cage clamp terminals	
Fixing torque:	0.4 Nm	
Mounting:	DIN rail mounting (IEC/EN 60715) or screw mounting M4, 90 mm hole pattern, with additional clip available as accessory	
Weight:		
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		
Width x height x depth		
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	

Classification to DIN EN 50155

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

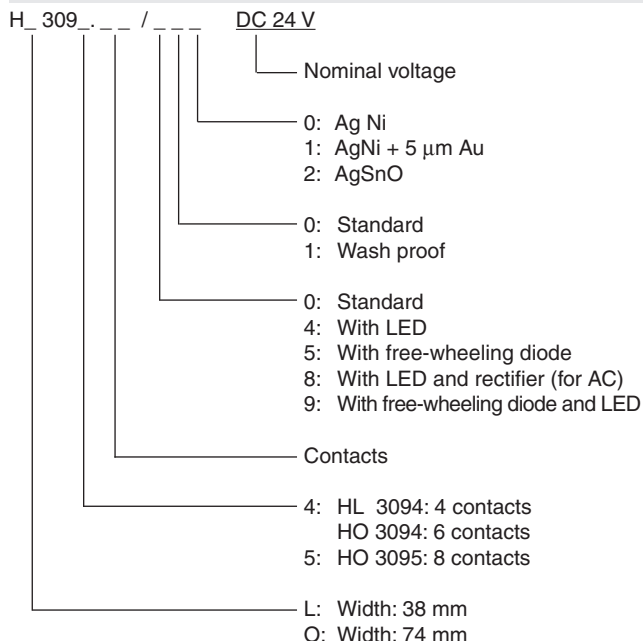
Standard Types with Soldered Relay

HL 3094.52 DC 24 V

Article number:: 0047426

- 2 NO, 2 NC contact
- Contact material: AgNi + 0,2 µm Au
- Nominal voltage U_N : DC 24 V
- Width: 38 mm

Ordering Example



Standard Types for Plug In Relay

Plug in socket

HL 3094/102 DC 24 V:

With free-wheeling diode and LED
Article number: 0059750

Suitable relay:

HA 5601.48 DC 24V
3 NO, 1 NC contact
Contact material: AgNi + 0,2 µm Au
Article number: 0052286
or
HA 5601.52 DC 24 V
2 NO, 2 NC contact
Contact material: AgNi
Article number: 0051359

Plug in socket

HO 3094/102 DC 24 V:

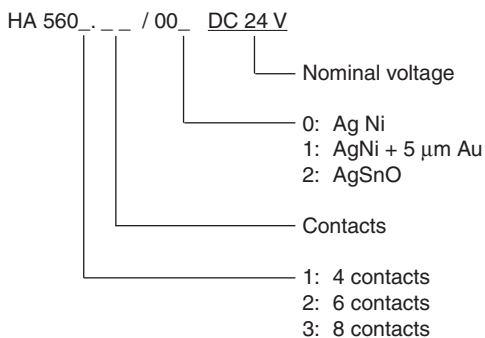
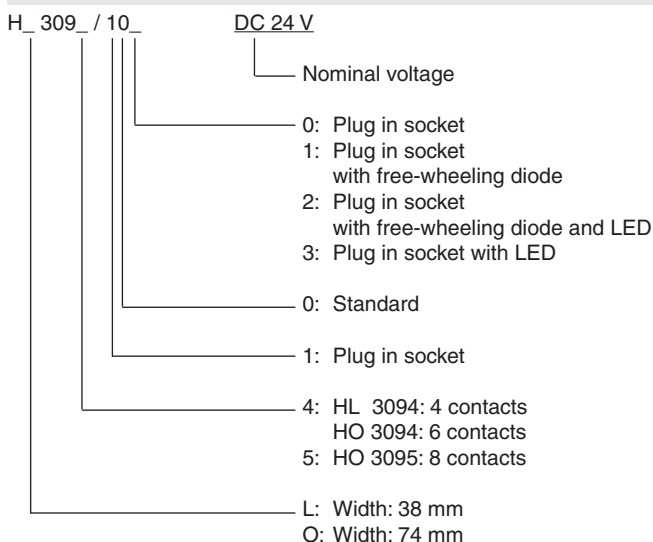
With free-wheeling diode and LED
Article number: 0060806

Suitable relay:

HA 5602.18 DC 24 V
3 NO, 3 NC contact
Contact material: AgNi + 0,2 µm Au
Article number: 0063130

Further variantes on request

Ordering Example



Accessories

ET 4086-0-2:

Additional clip for screw mounting
Article number: 0046578