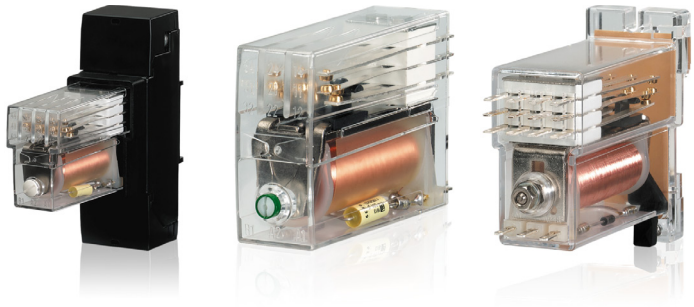
Data Sheet 10/86-2.36-EN

All-or-nothing relay RH(M) 1000 in plug-in case and case for top-hat rail or wall mounting



Compact robust power relay
- Type RH(M) 1003: 3 changeover contacts
- Type RH(M) 1004: 4 changeover contacts

Choice of contact material
- Silver, gold-bloomed (standard material)
- Silver-palladium
- Silver-cadmium oxide
- Gold

All-or-nothing relay in plug-in case RH 1000 for direct connection (2.8 mm tab connector or soldering) or plug into
- Flush-mounting socket for PCB-mounting
- Flush-mounting socket for soldering
- Flush-mounting socket for crimping
- Surface-mounting socket for wall-mounting with threaded terminals
- Surface-mounting socket for top-hat-rail-mounting with threaded terminals

All-or-nothing relay for top-hat rail mounting RHM 1000 for direct connection (2.8 mm tab connector or soldering)

DC voltage operation (also available for DC current operation) or

AC voltage operation (40 ... 70 Hz)
- At f > 70 Hz: Operate value rising
  Release value falling

With jog/latch button as standard for manual operation and for position indication

LED indication in the coil circuit (optional)

Technical notes

All-or-nothing relay
An applied energizing quantity (current or voltage) within the guaranteed range produces a magnetic field which in turn causes the relay to operate. The operate function is ensured from the lowest guaranteed value onwards (but may also occur for lower values). The relay remains in operate condition while the energizing quantity is within the guaranteed range.

The assured release takes place from 5 % (DC) or 15 % (AC) of the highest reference value within the permitted range of the energizing quantity (but may also occur for higher values).

All-or-nothing relay RH 1000
This relay plugs into a matching socket. It can also be mounted directly.

All-or-nothing relay RHM 1000
This relay is snap-fastened onto a top-hat rail or mounted directly onto a mounting plane using two bolts.

Coil for DC voltage only
(Coil without auxiliary circuit)
The energizing quantity is applied directly to the coil. There is no auxiliary circuit as protection from transient overvoltages or for the limitation of overvoltages on switch-off. The relay itself is resistent towards transient overvoltages within the guaranteed range. Connection to A1 and A2.

Coil with simple winding and free-wheeling diode
The coil is additionally fitted with a free-wheeling diode for voltage limitation when the coil is switched off. Connect + to A1 or A2 as per order. There is no reverse-polarity protection. Reverse polarity will destroy the free-wheeling diode! Connection to A1 and A2.

Coil with simple winding, reverse-polarity protection, LED indicator and free-wheeling diode (+ on A1)
The coil is additionally fitted with a diode as reverse-polarity protection and an LED indicator for coil current indication. The free-wheeling diode limits the voltage as the coil is switched off. Caution: external connection to A1 and B1; A2 is internally assigned and must not be connected externally!

Coil with simple winding
For all-or-nothing relays, a coil with simple winding is the standard design. One energizing quantity only may be applied.

Coil with tap
In addition to both ends of the coil, a coil point in between is connected to a pin (for example for coil current monitoring for interruption).

Coil with double winding
For all-or-nothing relays with double winding, triggering by two independent energizing quantities is possible. Both coils have a common connection point at one end.

Coil for DC or AC voltage
(Coil with auxiliary circuit)
The energizing quantity is applied to the coil via a diode (+ on A1). The coil circuit is thereby reverse-polarity-protected. A free-wheeling diode is connected in parallel to the coil. The relay is additionally protected by protective circuitry. For AC voltage, the coil is loaded by the energizing quantity during part of the cycle only. During the other part of the cycle, the magnetic system is buffered by the free-wheeling diode. For AC operation, the r.m.s. value needs to be double the value for DC voltage operation. Connection to A1 and A2; B1 is internally assigned and must not be connected externally!

Coil for DC or AC voltage and LED Indicator
(Coil with auxiliary circuit)
Design as for the coils for DC or AC voltage (coil with auxiliary circuit) with additional LED for operation indication. Connection to A1 and A2; B1 is internally assigned and must not be connected externally!

Contact material
Our standard contact material is silver that is gold-bloomed for protection during storage. Other contact materials are offered for selection. Please see the Guide Sheet for details.

Mounting bracket
Used for individual mounting of one RH1000 on a mounting plane. Available in packs of 25.

Retaining clip
Each socket is supplied with a retaining clip that will hold an RH1000 firmly inside the socket. Retaining clips are available separately in packs of 25.

Sockets
Sockets are available for RH1003 and RH1004. Each flush-mounting socket is supplied with a retaining clip.

- Flush-mounting socket for PCB-mounting:
  Flush-mounting socket with soldering pins (0.5 mm x 1 mm) for mounting in printed circuit boards.
- Flush-mounting socket for soldered connection:
  Flush-mounting socket with soldering tag.
- Flush-mounting socket for crimping:
  Flush-mounting socket with crimp contacts.
- Surface-mounting socket with threaded terminals:
  Surface-mounting sockets are available for RH1003 (one standard design for all RH1003 versions) and for RH1004 (premium type and special designs). They are mounted with two bolts on a mounting plane.
- Surface-mounting socket with threaded terminals and snap fixing for top-hat rail: Identical to the surface-mounting socket with threaded terminals except that it is not bolt-mounted but snap-fixed onto a top-hat rail. The arrow on the snap fixing should point down during installation.

Spare cover caps for surface-mounting sockets
As replacement for damaged or lost cover caps. Available in sets of 2.

Snap fixing for a top-hat rail
Snap fixing for a top-hat rail on a mounting plate, suitable for a surface-mounting socket with threaded terminals. It is used preferentially for the retrofitting of such sockets.

Technical data (Please note the general hints in the Data Sheet 86-1.00 EN)

General data	**RH 1000** (Relay in plug-in case)	**RHM 1000** (Relay for top-hat rail and wall-mounting)
Degree of protection		
Relay (without connection area)	IP 40	IP 40
Relay (terminals with covering)	IP 00	IP 00
Flush-mounting socket	IP 00	–
Surface-mounting socket with covering	IP 20	–
Installation		
Relay	bolt	bolt, snap
Flush-mounting socket	bolt	–
Surface-mounting socket	bolt, snap	–
Weight		
Relay	approx. 150 g	approx.150 g
Flush-mounting socket	approx. 35 g	–
Surface-mounting socket	approx. 100 g	–
Surface-mounting socket with snap fixing	approx. 170 g	–
Electrical connections (see also “circuit diagrams“) Caution: For direct connection of the RH(M) 1000 please take into account the basic insulation between contact circuits and operating circuit!		
Relay (ensure shock protection during installation)	plugging: max. 0.75 mm^2 flexible with tab connector 2.8 x 0.8 mm soldering: max. 0.75 mm^2 solid	plugging: max. 0.75 mm^2 flexible with tab connector 2.8 x 0.8 mm soldering: max. 0.75 mm^2 solid
Flush-mounting socket (ensure shock protection dur. install.) for PCB-mounting for soldering for crimping	soldering pin 1 x 0.5 mm max. 0.75 mm^2 solid max. 0.75 mm^2 flexible	–
Surface-mounting socket	threaded terminals max. 2.5 mm^2 solid max. 2.5 mm^2 flexible (use wire end ferrules!)	–
Mounting orientation	arbitrary	arbitrary
Mechanical service life	20 x 10^6 switching operations	20 x 10^6 switching operations
Permissible switching frequency	200 switching operations/min.	200 switching operations/min.
Climate class	3K3 max. 85 % relative humidity max. 25 g/m^3 abs. humidity	3K3 max. 85 % relative humidity max. 25 g/m^3 abs. humidity
Permissible temperature ranges for coils	DC / DC/AC	DC / DC/AC
Transport and storage temperatures	-45...+100 °C / -45...+100 °C	-45...+100 °C / -45...+100 °C
Ambient temperature	-25...+ 70 °C / -25...+ 65 °C	-25...+ 70 °C / -25...+ 65 °C
Maximum surface temperature (with all maximum permissible values for ambient temperature, coil voltage, contact rating)	+85 °C / +80 °C	+85 °C / +80 °C

Technical data (Please note the general hints in the Data Sheet 86-1.00 EN)

Coil circuit Nominal voltage	Nominal range	Resistance R_{coil} (±10 % at 20 °C)	$R_{ser.}$	Nominal consumption	max. permissible operating range $V_{min.}$ to $V_{max.}$ at ambient temperature		
RH 1000 and RHM 1000 (specified operate value 260 AW)							
Coil for DC voltage only					-25 °C...+40 °C	-5 °C...+40 °C	-25 °C...+70 °C
12 V DC	9.6... 13.2 V	78 Ω	–	1.85 W	7.9... 15.1 V	7.9... 16.4 V	8.6... 15.1 V
24 V DC	19.2... 26.4 V	270 Ω	–	2.13 W	14.2... 27.3 V	14.2... 29.8 V	15.6... 27..3 V
48 V DC	38.4... 52.8 V	1200 Ω	–	1.92 W	31.7... 60.6 V	31.7... 66.2 V	34.9... 60.6 V
60 V DC	48.0... 66.0 V	2150 Ω	–	1.67 W	40.4... 77.6 V	40.4... 84.7 V	44.4... 77.6 V
110/125 V DC	88.0...137.5 V	7700 Ω	–	1.57 W	80.1...153.2 V	80.1...167.2 V	88.1...153.2 V
220/250 V DC	176.0...242.0 V	26000 Ω	–	1.86 W	154.7...294.3 V	154.7...321.3 V	170.2...294.3 V
others per order from 5...250 V							
RH 1000 and RHM 1000 (specified operate value 260 AW)							
Coil for DC/AC voltage (f = 40...70 Hz)					-25 °C...+40 °C	-5 °C...+40 °C	-25 °C...+65 °C
Without LED indicator							
12 V DC/ 24 V AC	9.6... 13.2 V 19.2... 26.4 V	78 Ω	–	1.85 W	9.1... 16.3 V 16.9... 31.3 V	9.1... 17.7 V 16.9... 34.1 V	9.6... 14.6 V 18.2... 27.9 V
24 V DC/ 42/48 V AC	19.2... 26.4 V 33.6... 52.8 V	270 Ω	–	2.13 W	15.4... 28.5 V 29.6... 55.5 V	15.4... 31.0 V 29.6... 60.7 V	16.6... 26.6 V 31.9... 52.8 V
48 V DC/ 100 V AC	38.4... 52.8 V 80.0...121.0 V	1200 Ω	–	1.92 W	32.9... 61.8 V 64.6...122.4 V	32.9... 67.4 V 64.6...133.5 V	35.5... 55.3 V 69.9...110.0 V
60 V DC 115/130 V AC	48.0... 66.0 V 92.0...143.0 V	2150 Ω	–	1.67 W	41.6... 78.8 V 81.9...156.3 V	41.6... 85.9 V 81.9...170.5 V	44.9... 73.8 V 88.0...146.5 V
110/125 V DC/ 220/230/250 V AC	88.0...137.5 V 176.0...275.0 V	7700 Ω	–	1.57 W	81.3...154.4 V 161.4...307.6 V	81.3...168.4 V 161.4...335.7 V	88.0...139.2 V 174.8...277.2 V
220 V DC	176.0...242.0 V	26000 Ω	–	1.86 W	155.9...295.5 V	155.9...322.5 V	168.8...255.3 V
others per order from 12...250 V							
With LED indicator							
12 V DC/ 24 V AC	9.6... 13.2 V 19.2... 26.4 V	78 Ω	–	1.85 W	9.1... 16.3 V 16.9... 31.3 V	9.1... 17.7 V 16.9... 34.1 V	9.6... 14.6 V 18.2... 27.9 V
24 V DC/ 42/48 V AC	19.2... 26.4 V 33.6... 52.8 V	270 Ω	–	2.13 W	15.4... 28.5 V 29.6... 55.5 V	15.4... 31.0 V 29.6... 60.7 V	16.6... 26.6 V 31.9... 52.8 V
48 V DC/ 100 V AC	38.4... 52.8 V 80.0...121.0 V	1200 Ω	–	1.92 W	34.9... 63.8 V 66.6...124.4 V	34.9... 69.4 V 66.6...135.5 V	37.5... 56.3 V 71.9...110.0 V
60 V DC 115/130 V AC	48.0... 66.0 V 92.0...143.0 V	2150 Ω	–	1.67 W	43.6... 80.8 V 83.9...153.8 V	43.6... 87.9 V 83.9...172.5 V	46.9... 74.9 V 88.0...146.5 V
110/125 V DC/ 220/230/250 V AC	88.0...137.5 V 176.0...275.0 V	7700 Ω	–	1.57 W	83.3...156.4 V 163.4...309.6 V	83.3...170.4 V 163.4...337.7 V	88.0...140.2 V 176.0...277.2 V
220 V DC	176.0...242.0 V	26000 Ω	–	1.86 W	157.9...297.5 V	157.9...324.5 V	170.8...256.3 V
others per order from 12...250 V							

⚠ The insulation between coil circuit and contact circuit complies with the specifications for basic insulation.

Technical data (Please note the general hints in the Data Sheet 86-1.00 EN)

Contact circuit

Comp. fitted	RH(M) 1003	RH(M) 1004
	3 changeover cont.	4 changeover contacts

Switching times for DC voltage operation (at reference value)

	w/o free-wh. diode		with free-wheeling diode	
	make contact	break contact	make contact	break contact
Operate time	< 30 ms	< 30 ms	< 30 ms	< 30 ms
Release time	< 30 ms	< 30 ms	< 40 ms	< 40 ms

Switching times for AC voltage operation (at reference value)

			with free-wheeling diode	
			make contact	break contact
Operate time	–	–	< 30 ms	< 30 ms
Release time	–	–	< 55 ms	< 60 ms

Contacts	Contact material	Contact diameter
Standard	silver, gold-bloomed	3.5 mm
choices	silver-palladium	3.5 mm
	silver-cadmium oxide	3.5 mm
	gold	2.5 mm

Limit values

(Please note restrictions on contact materials and rated voltage)

Clearance/creepage dist.:	Clearance	Creepage distance
Open contact	≥ 0.9 mm	≥ 4.0 mm
Between contact sets	≥ 3.0 mm	≥ 4.0 mm
Contact/coil	≥ 3.0 mm	≥ 4.0 mm
Contact/mass	≥ 3.0 mm	≥ 4.0 mm
Coil/mass	≥ 3.0 mm	≥ 4.0 mm

Switching voltage	400 V AC/450 V DC
Making current	10 A AC/DC
Continuous current	6 A AC/DC

Breaking capacity	Current	Power
230 V AC cosφ = 0.4...1	6 A	1380 VA
220 V DC L/R = 0 ms	0.4 A	88 W
110 V DC L/R = 0 ms	0.7 A	77 W
60 V DC L/R = 0 ms	2 A	120 W
220 V DC L/R = 40 ms	0.2 A	44 W
110 V DC L/R = 40 ms	0.35 A	38 W
60 V DC L/R = 40 ms	1 A	60 W
(see also diagrams 1 and 2)		

Electrical service life > 10^4 switching operations

CE classification

Overvoltage category
III

Pollution degree
3

Rated impulse voltage
4 kV

Nominal voltage
250 V AC/DC

E.g. for switching in TN and TT systems
230/400 V

For special designs, the technical data may differ.

Explosion protection[1)]

Explosion protection with PTB certificate
(special feature for RH1003 and RH1004 only)

Intra-plant ID 49 Ex 86-5
Design ID PTB-Nr. III B/E - 26627 U

Protection type
Ex i G5

Coil circuit
1 to 220 V DC,
1 to 220 V AC

Contact circuit
to 220 V DC,
to 0.2 A at L/R ≤ 200 ms
to 220 V AC,
to 6 A at cos φ ≥ 0.7

The sum of the voltages at the coil circuit and the contact circuit must not exceed 250 V. The relay provides electrical isolation of circuits that are intrinsically safe from circuits that are not.

Either the contact circuit or the coil circuit can be designed to protection type “intrinsically safe” Ex i G5. Due to the design of the device, the coil circuit is separated reliably from the contact circuit.

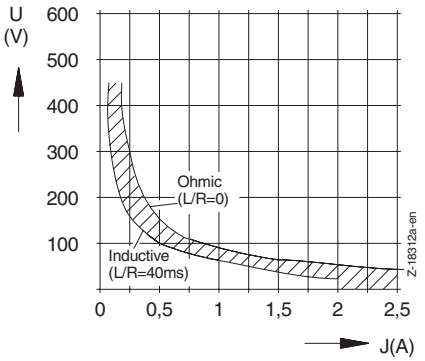


Diagram 1: Breaking capacity for DC current

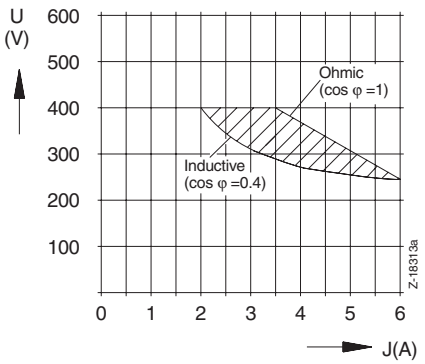


Diagram 2: Breaking capacity for AC current

[1)] This version will be phased out at the end of 2001!

Circuit diagrams

All-or-nothing relay RH(M) 1003

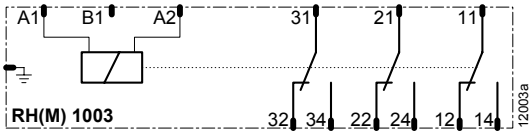


Diagram 1
All-or-nothing relay RH(M) 1003 for DC
with simple winding without auxiliary circuit

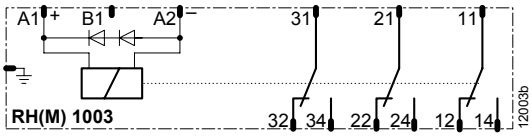


Diagram 2
All-or-nothing relay RH(M) 1003 for DC
with simple winding and free-wheeling diodes, + on A1

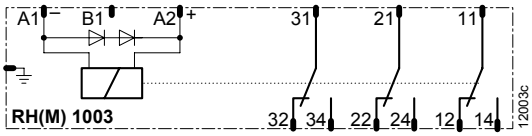


Diagram 3
All-or-nothing relay RH(M) 1003 for DC
with simple winding and free-wheeling diodes, + on A2

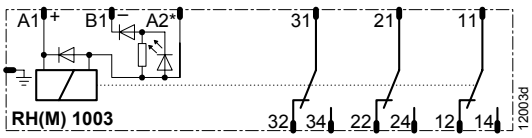


Diagram 4
All-or-nothing relay RH(M) 1003 for DC
with simple winding, reverse-polarity protection, free-wheeling diode and LED indicator. * External connection to A2 not permissible!

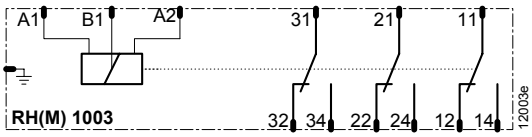


Diagram 5
All-or-nothing relay RH(M) 1003 for DC
simple winding with tap

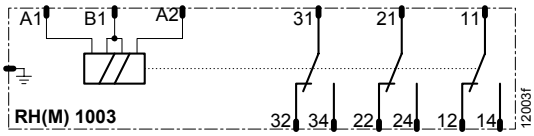


Diagram 6
All-or-nothing relay RH(M) 1003 for DC
with double winding without auxiliary circuit

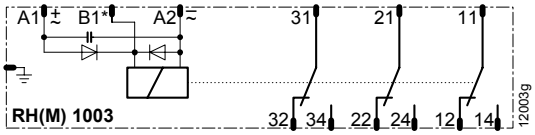


Diagram 7
All-or-nothing relay RH(M) 1003 for DC/AC
* External connection to B1 not permissible!

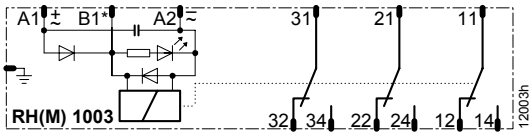


Diagram 8
All-or-nothing relay RH(M) 1003 for nominal voltage ≤ 24 V DC, 42/48 V AC
with LED indicator
* External connection to B1 not permissible!
!

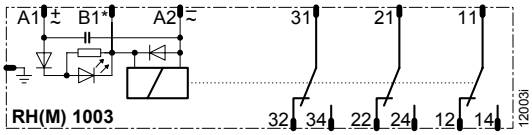


Diagram 9
All-or-nothing relay RH(M) 1003 for nominal voltage ≥ 48 V DC, 100 V AC
with LED indicator
* External connection to B1 not permissible!

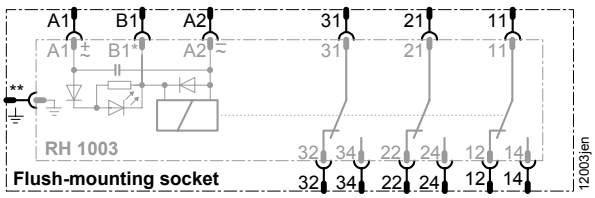


Diagram 10
Flush-mounting socket for RH 1003
with relay plugged in as example (grey)
** Grounding connection obviated with flush-mounting socket for PCB

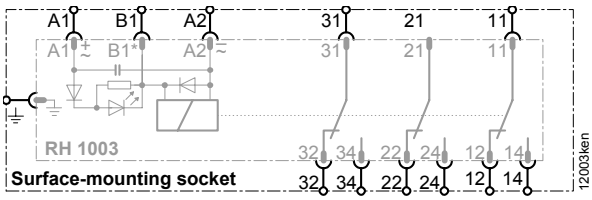


Diagram 11
Surface-mounting socket for RH 1003
with relay plugged in as example (grey)

Circuit diagrams

All-or-nothing relay RH(M) 1004

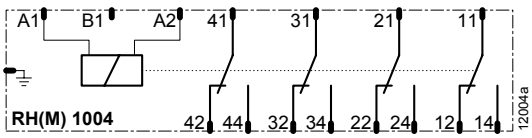


Diagram 12
All-or-nothing relay RH(M) 1004 for DC
with simple winding without auxiliary circuit

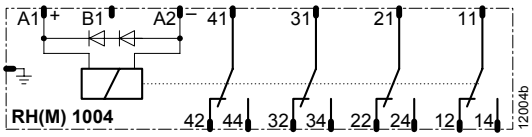


Diagram 13
All-or-nothing relay RH(M) 1004 for DC
with simple winding and free-wheeling diodes, + on A1

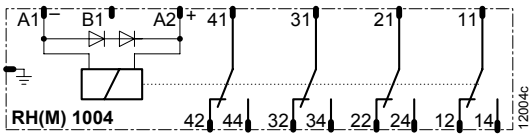


Diagram 14
All-or-nothing relay RH(M) 1004 for DC
with simple winding and free-wheeling diodes, + on A2

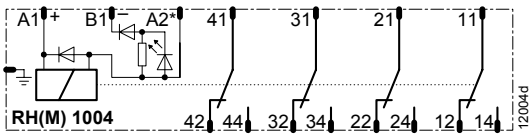


Diagram 15
All-or-nothing relay RH(M) 1004 for DC
with simple winding, reverse-polarity protection, free-wheeling diode and
LED indicator * External connection to A2 not permissible!

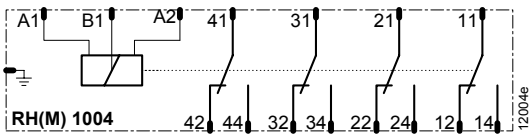


Diagram 16
All-or-nothing relay RH(M) 1004 for DC
simple winding with tap

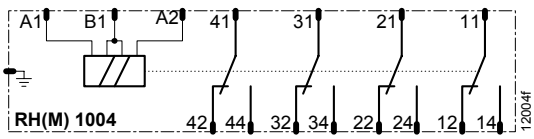


Diagram 17
All-or-nothing relay RH(M) 1004 for DC
with double winding without auxiliary circuit

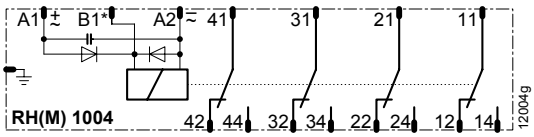


Diagram 18
All-or-nothing relay RH(M) 1004 for DC/AC
* External connection to B1 not permissible!

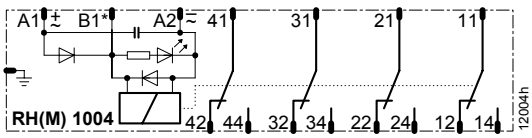


Diagram 19
All-or-nothing relay RH(M) 1004 for nominal voltage ≤ 24 V DC, 42/48 V AC
with LED indicator
* External connection to B1 not permissible!

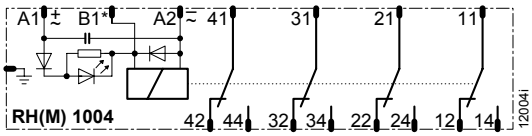


Diagram 20
All-or-nothing relay RH(M) 1004 for nominal voltage ≥ 48 V DC, 100 V AC
with LED indicator
* External connection to B1 not permissible!

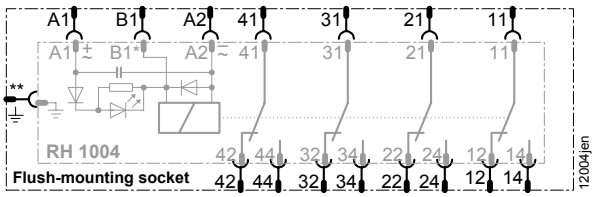


Diagram 21
Flush-mounting socket for RH 1004
with relay plugged in as example (grey)
** No grounding connection for flush-mounting socket for PCB's

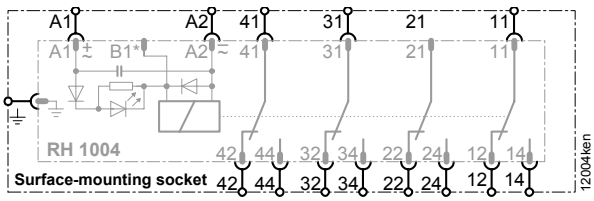


Diagram 22
Surface-mounting socket (standard version) for RH 1004
with relay plugged in as example (grey)

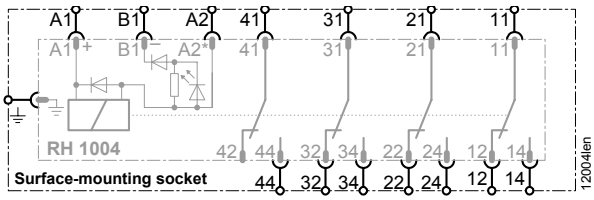


Diagram 23
Surface-mounting socket (B1 on terminal 42) for RH 1004
with relay plugged in as example (grey)

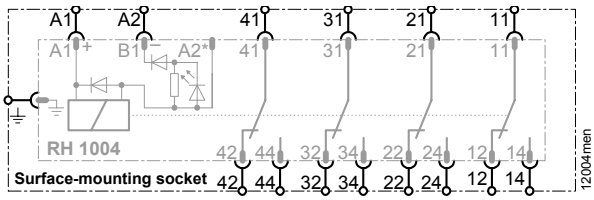
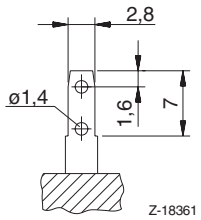
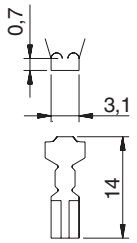


Diagram 24
Surface-mounting socket (B1 on terminal A2) for RH 1004
with relay plugged in as example (grey)

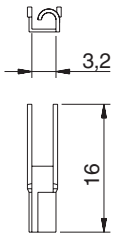
Dimensional drawings (dimensions in mm)



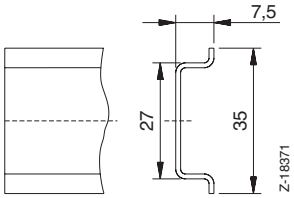
Drawing 1
Solder/plug pin
on RH(M) 1000



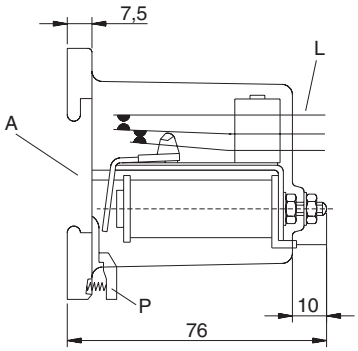
Drawing 2
Plug-in sleeve
for RH(M) 1000



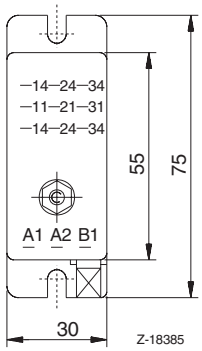
Drawing 3
Plug distributor
for RH(M) 1000



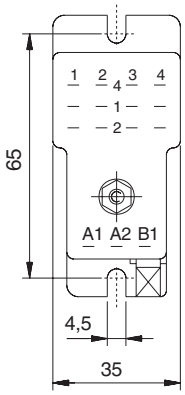
Drawing 4
Top-hat rail



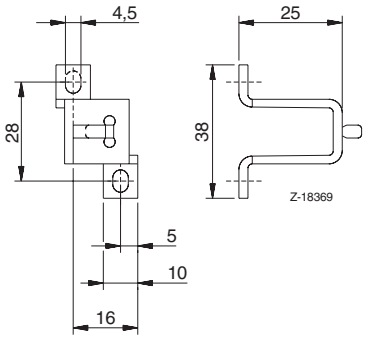
Drawing 5
RHM 1000 (side view)



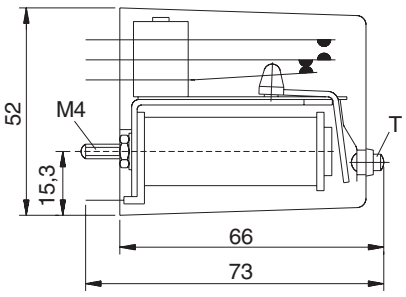
Rear view
RHM 1003



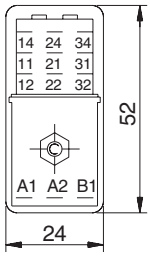
Rear view
RHM 1004



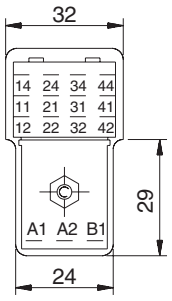
Drawing 7
Mounting bracket



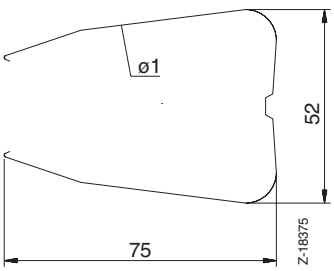
Drawing 8
RH 1000 (side view)



Rear view
RH 1003

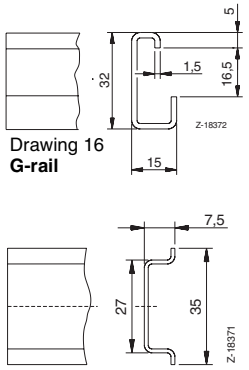


Rear view
RH 1004



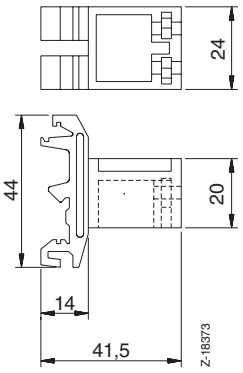
Drawing 9
Retainer clip for flush- and surface mounting sockets

Dimensional drawings (dimensions in mm)

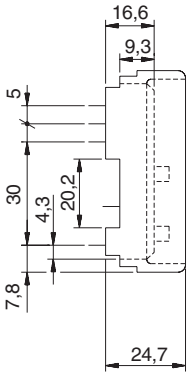


Drawing 16
G-rail

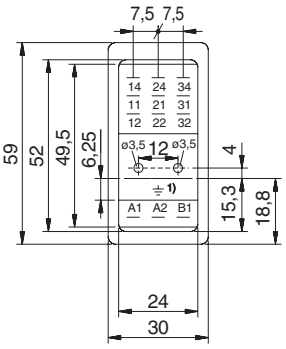
Drawing 4
Top-hat rail



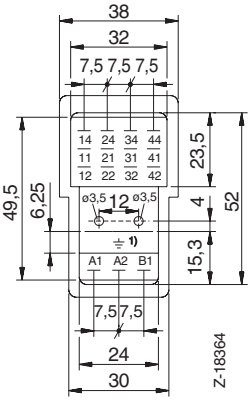
Drawing 14
Adapter for flush-mounting socket
for mounting on top-hat rail or G-rail



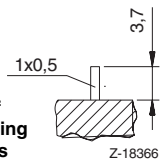
Drawing 15
Flush-mounting socket (side view)



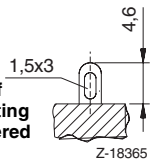
Rear view of
flush-mounting socket
for RH 1003



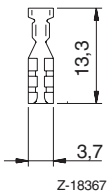
Rear view of
flush-mounting socket
for RH 1004



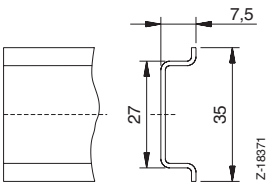
Drawing 11
Soldering pin of the flush-mounting socket for PCB's



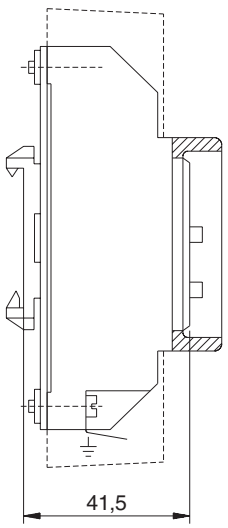
Drawing 12
Soldering pin of the flush-mounting socket for soldered connection



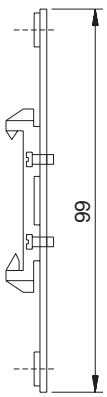
Drawing 13
Clip contact for crimping



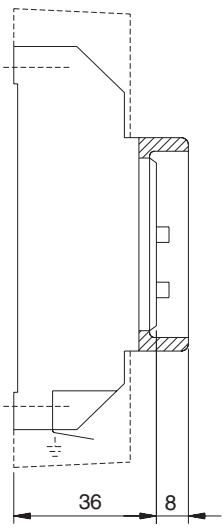
Drawing 4
Top-hat rail



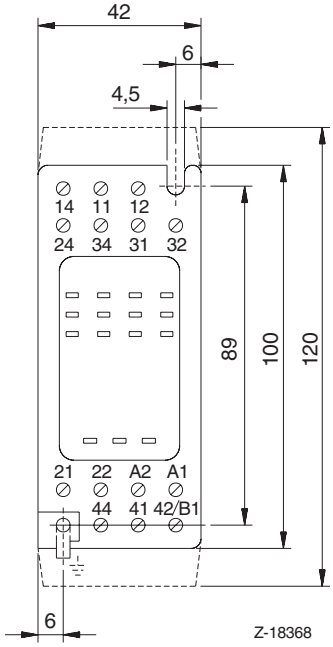
Drawing 18
Surface-mounting socket with snap fixing
for top-hat rails
(side view)



Drawing 19
Snap fixing
for top-hat rails
(side view)



Drawing 20
Surface-mounting socket
(side view)



Frontal view of the
surface-mounting socket

Ordering information for all available designs													
		Catalog No.									Code	Circ. diagr.	Dim. draw.
Design		V86236A-											
All-or-nothing relay in plug-in case													8
RH 1003 3 changeover contacts			1						0			1...9	
RH 1004 4 changeover contacts			2					0				12...20	
All-or-nothing relay, top-hat-rail- or wall-mounting													5
RHM 1003 3 changeover contacts			3				0		0			1...9	
RHM 1004 4 changeover contacts			4				0	0				12...20	
Nominal coil voltage (DC)													
Simple winding 12 V DC				1	0								
24 V DC				2	0								
48 V DC				3	0								
60 V DC				4	0								
110/125 V DC				5	0								
220/250 V DC				6	0								
.... V DC	1) 5)			7	0						501		
Auxiliary circuit without					0	0						1, 12	
with free-wheeling diode (+ on A1)	2)				0	2						2, 13	
with rev.polar.prot., free-wh.diode and LED (+ on A1)	2) 3) 4) 5)				0	3						4, 15	
with free-wheeling diode (+ on A2)	2)				0	4						3, 14	
Winding with tap .... V DC	1) 3) 5)			8	0	0					501	5,16	
Double winding .... V DC	1) 3) 5)			9	0	0					501	6, 17	
Nominal coil voltage (DC, AC)													
with reverse polarity protection, free-wheeling diode and protective circuit													
Simple winding 12 V DC 24 V AC				1	2								
24 V DC 42/48 V AC				2	3								
48 V DC 100 V AC				3	4								
60 V DC 110/130 V AC				4	5								
110/125 V DC 220/230/250 V AC				5	6								
220 V DC				6	7								
.... V DC .... V AC	1) 5)			7	7						501		
Auxiliary circuit without						1						7, 18	
with LED indicator						6						8, 9, 12, 20	
Jog/latch button													
With jog/latch button (standard design)							0						
Without jog/latch button							1						
Without jog/latch button, with PTB certificate	5) 7)						2						
Contact material													
RH(M) 1003 Silver, gold-bloomed Ø 3,5 mm								1	0				
Silver-cadmium oxide Ø 3,5 mm								2	0				
Silver-palladium Ø 3,5 mm								3	0				
Gold Ø 2,5 mm								4	0				
RH(M) 1004 Silver, gold-bloomed Ø 3,5 mm								0	1				
Silver-cadmium oxide Ø 3,5 mm								0	2				
Silver-palladium Ø 3,5 mm								0	3				
Gold Ø 2,5 mm								0	4				

1) Customer-specific within the realm of technical feasibility as per Catalog 86!
State nominal voltage / nominal current of the coil.
Possible nominal voltages: 5 to 250 V DC und 12 to 250 V AC
2) Use only in existing installations. For new installations, use DC/AC version!
3) Ancillary surface mounting: See footnote 3).
4) Ancillary surface mounting: See footnote 4).
5) Technical data may change compared to the standard design as per Catalog specifications.
6) External connect. Not permitted due to intrnal assignment!
7) This version will be phased out at the end of 2001!

Standard designs all-or-nothing relays RH(M) 1000					
Design	Nominal voltage		Catalog No.	Circ. diagr.	Dim. draw.
All-or-nothing relay RH 1003	12 V DC		V86236A-1100010	1	8
in plug-in case,	24 V DC		V86236A-1200010	1	8
3 changeover contacts,	48 V DC		V86236A-1300010	1	8
contact material	60 V DC		V86236A-1400010	1	8
silver, gold-bloomed	110/125 V DC		V86236A-1500010	1	8
simple winding	220/250 V DC		V86236A-1600010	1	8
	12 V DC	24 V AC	V86236A-1121010	7	8
	24 V DC	42/48 V AC	V86236A-1231010	7	8
	48 V DC	100 V AC	V86236A-1341010	7	8
	60 V DC	110/130 V AC	V86236A-1451010	7	8
	110/125 V DC	220/250 V AC	V86236A-1561010	7	8
	220 V DC		V86236A-1671010	7	8
All-or-nothing relay RH 1004	12 V DC		V86236A-2100001	12	8
in plug-in case,	24 V DC		V86236A-2200001	12	8
4 changeover contacts,	48 V DC		V86236A-2300001	12	8
contact material	60 V DC		V86236A-2400001	12	8
silver, gold-bloomed	110/125 V DC		V86236A-2500001	12	8
simple winding	220/250 V DC		V86236A-2600001	12	8
simple winding	12 V DC	24 V AC	V86236A-2121001	18	8
	24 V DC	42/48 V AC	V86236A-2231001	18	8
	48 V DC	100 V AC	V86236A-2341001	18	8
	60 V DC	110/130 V AC	V86236A-2451001	18	8
	110/125 V DC	220/250 V AC	V86236A-2561001	18	8
	220 V DC		V86236A-2671001	18	8
All-or-nothing relay RHM 1003	12 V DC		V86236A-3100010	1	5
top-hat-rail- or	24 V DC		V86236A-3200010	1	5
Wall-mounting	48 V DC		V86236A-3300010	1	5
3 Changeover contacts,	60 V DC		V86236A-3400010	1	5
contact material	110/125 V DC		V86236A-3500010	1	5
silver, gold-bloomed,	220/250 V DC		V86236A-3600010	1	5
simple winding	12 V DC	24 V AC	V86236A-3121010	7	5
	24 V DC	42/48 V AC	V86236A-3231010	7	5
	48 V DC	100 V AC	V86236A-3341010	7	5
	60 V DC	110/130 V AC	V86236A-3451010	7	5
	110/125 V DC	220/250 V AC	V86236A-3561010	7	5
	220 V DC		V86236A-3671010	7	5
All-or-nothing relay RHM 1004	12 V DC		V86236A-4100001	12	5
top-hat-rail- or	24 V DC		V86236A-4200001	12	5
wall-mounting	48 V DC		V86236A-4300001	12	5
4 changeover contacts,	60 V DC		V86236A-4400001	12	5
contact material	110/125 V DC		V86236A-4500001	12	5
silver, gold-bloomed,	220/250 V DC		V86236A-4600001	12	5
simple winding	12 V DC	24 V AC	V86236A-4121001	18	5
	24 V DC	42/48 V AC	V86236A-4231001	18	5
	48 V DC	100 V AC	V86236A-4341001	18	5
	60 V DC	110/130 V AC	V86236A-4451001	18	5
	110/125 V DC	220/250 V AC	V86236A-4561001	18	5
	220 V DC		V86236A-4671001	18	5

All-or-nothing relay RH(M) 1000
in plug-in case and case for top-hat rail or wall-mounting

10/86-2.36 EN

Special designs RH(M) 1000						
Design	Nominal voltage		Catalog No.	Code	Circ. diagr.	Dim. draw.
RH 1003 for GEAMATIC	24 V DC	[5]	V86236A-1800120	510	[6]	8
RHM 1003 for GEAMATIC	24 V DC	[5]	V86236A-3800020	510	[6]	5
RH 1004 for Protronic P	24 V DC	[5]	V86236A-2702002	511	12	8
RHM 1004 for Protronic P	24 V DC	[5]	V86236A-4702002	511	12	5

Accessories for all-or-nothing relays RH 1000					
Design		Catalog No.		Circ. diagr.	Dim. draw.
Angle bracket (25 per pack)		V86211A-0305000			7
Retaining clip for plug-in case (25 per pack)		V86211A-0404000			9
Flush-mounting case (with retaining clip)					
for RH 1003	for PCBs	V86210A-1500000		10	15
(all designs)	for soldered connections	V86210A-2500000		10	15
	for crimping	V86210A-3500000		10	15
for RH 1004	for PCBs	V86210A-1600000		21	15
(all designs)	for soldered connections	V86210A-2600000		21	15
	for crimping	V86210A-3600000		21	15
Adapter for mounting flush-mounting case on top-hat rails or G-type rails		V86211A-7000000			14
Surface-mounting case with threaded terminal ends (with retaining clip)					
für RH 1003	all designs	V86210A-4050000		11	20
für RH 1004	standard design	V86210A-4060000		22	20
für RH 1004	B1 on terminal 42 [3]	V86210A-5060000		23	20
für RH 1004	B1 on terminal A2 [4]	V86210A-8060000		24	20
Surface-mounting case with threaded terminal ends and snap-on fixing for top-hat rail (with retaining clip)					
für RH1003	all designs	V86210A-6050000		11	18
für RH1004	standard design	V86210A-6060000		22	18
für RH1004	B1 on terminal 42 [3]	V86210A-7060000		23	18
für RH1004	B1 on terminal A2 [4]	V86210A-9060000		24	18
Spare caps for surface-mounting case (2 per pack)		V86211A-8800000			
Snap-on fixing for top-hat rail (for retrofitting to surface-mounting cases)		V86211A-9800000			19
Top-hat rail EN 50022-35x7.5 (2000 mm long)		V86299A-1100000			4

Accessories for all-or-nothing relays RHM 1000				
Description	Catalog No.			Dim. draw.
Top-hat rail EN 50022-35 x 7.5 (2000 mm long)	V86299A-1100000			4

[3] Important: The 4th changeover contact is connected to the terminal as make contact only

[4] Relay coil connection B1 is taken to terminal A2

[5] Technical data may change compared to the standard design as per Catalog specifications

[6] Coil begin: A1 / coil end: B1 / center tapning point: A2

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