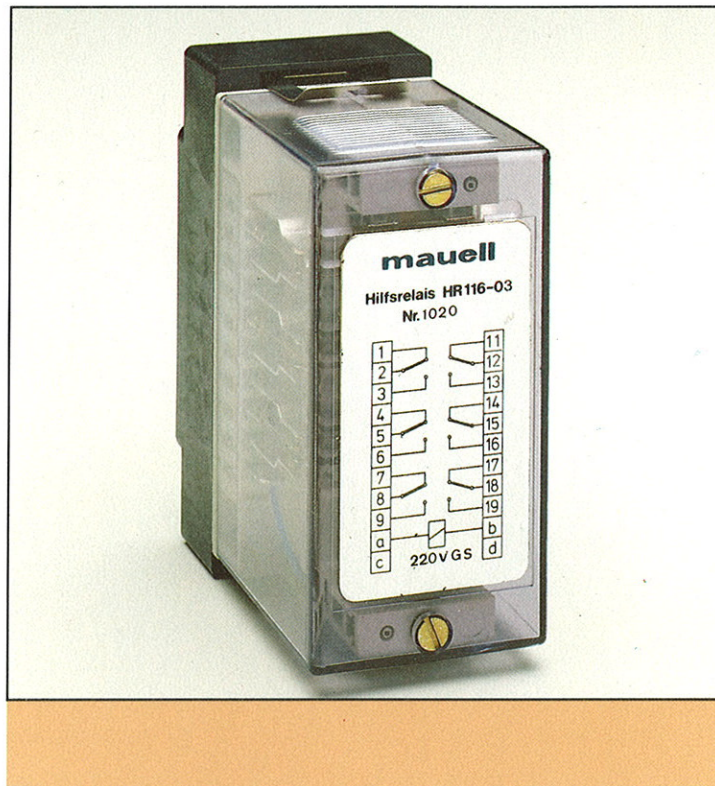


Auxiliary Relay



HR 116

Auxiliary Relay**HR 116****Applications:**

The HR 116 socket-mounted auxiliary relay is ideally suited for use in control-, monitoring-, interposing-, interlocking- and automatic systems. This relay's low power consumption, large number of contacts, high breaking capacity, and variety of mounting hardware, serve to explain its preferred use in such systems to provide the required electrical isolation between the control and actuator circuitry.

Design and operation:

The HR 116 is designed as a drop-armature relay. When the exciter coil is powered, the armature switches all points simultaneously and directly, without the use of interconnecting levers. A pull-back spring also acts directly on the armature to provide positive separation of the contacts when the exciter coil is de-energized. An AC version of the relay is also available which includes a rectifier in the energizing coil circuit, mounted inside the relay housing. The spring contacts and coil connectors are mounted in the relay base, such that they also serve as the contact blades for the mounting socket. Fine silver is used as the contact material in the standard-design devices.

The relay cover is made of transparent Macralon and provides effective protection against dust and inadvertent contact.

The relays can be supplied with mounting sockets having either screw terminals on the front or soldering lugs on the back. Guide pins on the socket plate ensure that the relay is mounted correctly, thus preventing reversed polarity. Spring clips on the mounting sockets snap over corresponding lugs on the ends of the relay cover and provide a secure mechanical mounting for the relays, even under extreme conditions (e.g., large g forces and vibrations).

The screw terminals on the socket designed for wiring from the front can accept wire cross-sections of up to 4 mm². The soldering lugs on the alternative-model sockets are designed to accept two wires and are also dimensioned such that they can be used with 4.8 x 0.8 mm flat tab connectors.

Mounting:

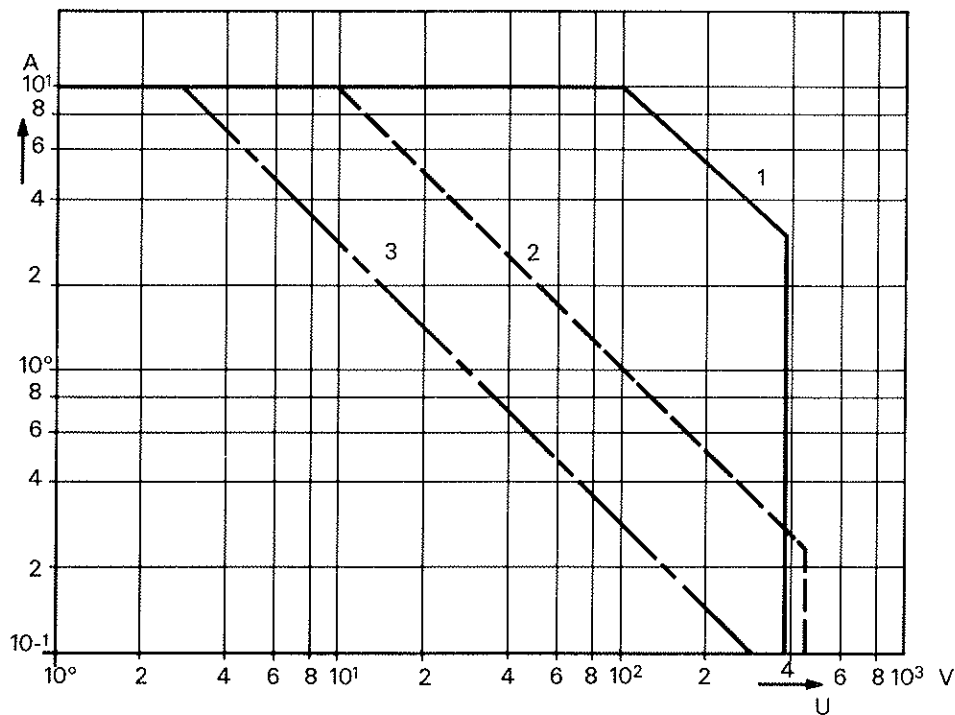
Due to its small size, versatile mounting and wiring configurations, the HR 116 auxiliary relay can easily be used in all of the usual applications.

Generally, the socket plate with screw terminals is used for surface or frame mounting. All connections are then made to the terminals located on the sides of the socket plate.

The socket with soldering lugs can be mounted using simple angle brackets, or on sheet-metal rails in which appropriate cutouts have been made, or on panels with cutouts. The relay itself is simply plugged into the socket. The wiring is soldered to the lugs on the back of the socket or plugged on to the lugs using flat tab connectors.

The relays can also be mounted on DIN rails (DIN 46277) using a special-order snap plate which is screwed on to the front of the transparent cover. The relay is then simply snapped on to the 35 mm DIN rail. The electrical connections for this configuration can be made using either the socket plate with screw terminals, the socket plate with soldering lugs or direct to the relay connection lugs, as required by the application.

General data:	Protection type	IP 40 acc. to DIN 40050
	Insulation group and series voltage	group C, 440/380 V DC/AC (VDE 0110/11.72)
	Test voltage	2,5 kV, 50 c/s (VDE 0435 a/9.72)
	Ambient temperature range	-5° C to +40° C
	Weight	approx. 420 g
Relay coils:	Current type	DC or AC; 50 or 60 c/s
	Voltage rating (U_r)	up to 250 V DC or 380 V AC
	Oversvoltage continuous	$1,2 \times U_r$
	Response voltage	$\leq 0,75 \times U_r$
	Power consumption at U_r at DC	2 to 3,5 W
	at AC	2,5 to 5 VA
	Response time (NO)	approx. 30 ms
Release time (NC)	approx. 20 ms	
Contacts:	Max. switching voltage	440 V DC or 380 V AC
	Max. continuous current	10 A
	Currents at make and break	see diagram below
	Contact configurations	see connection diagrams

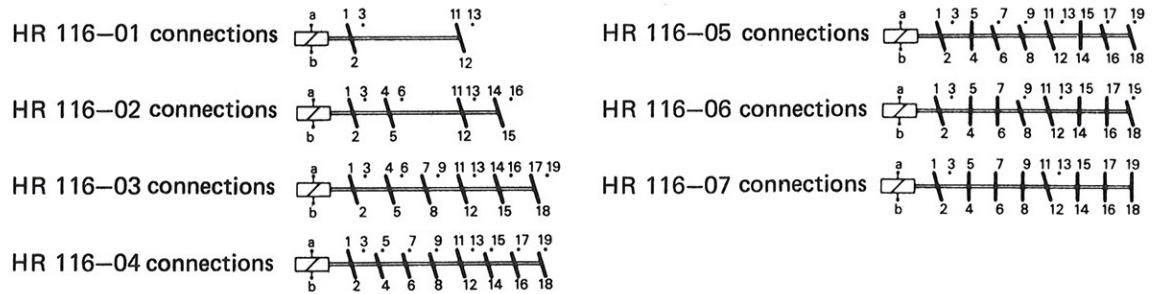


- Characteristic 1: Making and breaking currents for AC, $\cos \varphi = 1 \dots 0.7$
Making current for DC
- Characteristic 2: Breaking current for DC and an ohmic load
- Characteristic 3: Breaking current for DC; $L/R = 10 \text{ ms}$

Auxiliary Relay

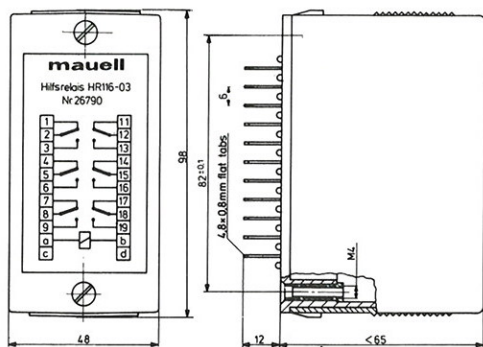
HR 116

Connection diagrams:

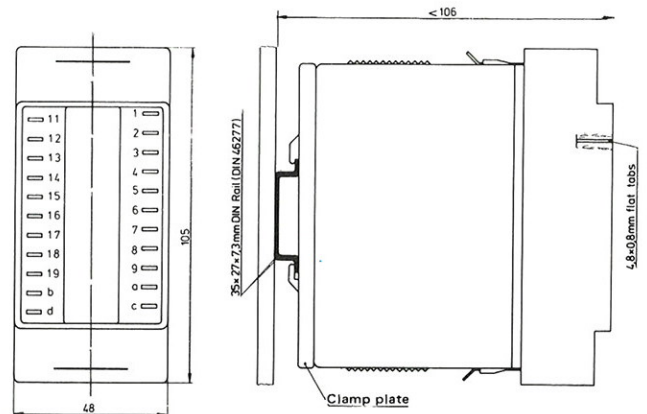


Dimensions:

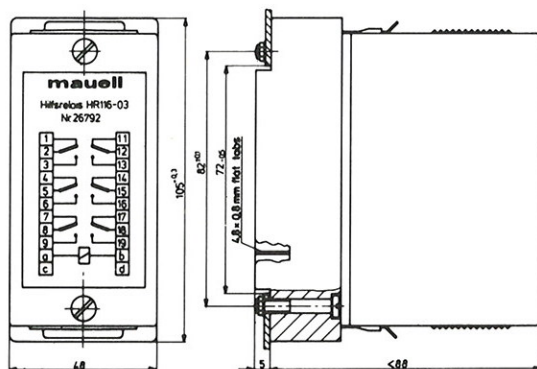
Relay without socket



Relay for Din-rail mounting (DIN 46277) with soldering-lug socket



Relay with soldering-lug socket



Relay with screw-terminal socket

