

# GENERATION & NETWORK

## Auxiliary Relays with Electrical Reset



RADE2030  
RADE3080  
RADE4160



The RADE auxiliary relays are the CEE family for control and signalling with electrical reset (latching relay).

They are mainly used as contact multipliers in control systems, where two different stable positions are required, such as: OPEN/CLOSED, YES/NO, AUTOMATIC/MANUAL...

Other important uses are:

- electrical or hand reset tripping relays [86]
- remote control relay

These relays may have an important number of output contacts:

- RADE2030: 3 change-over contacts
- RADE3080: 8 change-over contacts
- RADE4160: 16 change-over contacts

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## Mode of operation

This family of latching relays is manufactured with draw-out relay and base mounting arrangement\*. These relays use two coils, each fitted with a series of cut-off contact. The relay is held in either of the two stable positions by means of a permanent magnet.

The flux generated by the permanent magnet closes through the leg which is in contact with the armature. To switch the relay to the other position, the coil corresponding to the leg in contact with the armature is energised. The coil generates a flux in opposition with the flux created by the permanent magnet, causing the armature to be rejected into the other stable position, where it is now held by the flux of the permanent magnet.

The use of a permanent magnet to hold the relay in either of the two stable positions is an effective solution against intermediate positions or bounce, giving great security and a long, safe service life, with zero burden except during switching.

An indicator, showing the position of the armature, can also be used for manual switching of the relay.

\* see documentation reference A495 (Bases auxiliary relays CEE).

## Caractéristiques

- Rated voltages (Un) 24, 48, 110, 125, 220 Vdc or Vac 50 or 60 Hz
- Voltage range, burdens and frequency:

Relay	Voltage range	Burden during switching
RADE2030	+25%, -30% Un	6 W
RADE3080	+25%, -30% Un	12 W
RADE4160	+10%, -20% Un	24 W

- Pick-up time < 20 ms
- Contacts:
  - Permanent current 10 A
  - Instantaneous current 80 A/200 ms; 200 A/ 0 ms (RADE4160 150 A/10 ms)
  - Making capacity 40 A/0.5s/110 Vdc
  - Breaking (cut) capacity see curves
  - $U_{max}$  open contact 250 Vdc, 400 Vac
- Mechanical life  $10^7$  operations
- Temperature -10°C; +70°C
- Operating humidity 93%/40°C
- Seismic characteristics according to: **IEEE 344** 3g/33 Hz
- Degree of ZPA

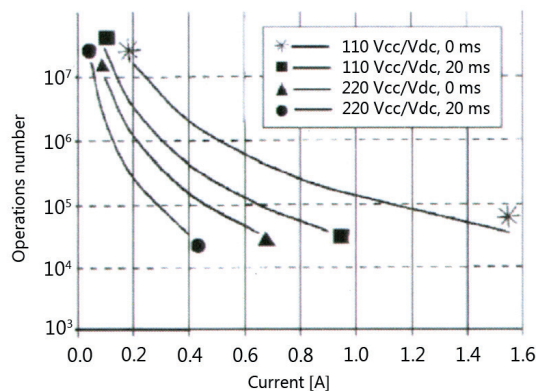
## Standards of construction

- Electric security tests:
  - Dielectric test **IEC/EN 60255-5** 2 kV/50 Hz/1 min
  - Surge withstand 5 kV/1.2/50  $\mu$ s
  - Insulation resistance > 2000 M $\Omega$ /500 Vdc
- Cold exposure tests: **IEC/EN 60068-2-1**
  - Storage conditions -40°C/96 h
  - Operating conditions -25°C/96 h
  - 100 cycles -10°C/ h
- Dry heat exposure tests: **IEC/EN 60068-2-2**
  - Storage conditions +70°C/96 h
  - Operating conditions +55°C/96 h
- Damp heat environmental cyclic tests: **IEC/EN 60068-2-30**: 55°C/12 h
- Thermal endurance tests: **IEC/EN 61810-7**: 55°C/Vmax/1000 h
- Flammability tests of plastic materials: **IEC/EN 60695**: 850°C/30s  
**UL94**: V0  
**IEC/EN 60692-2-1**
- Cover protection degree: **IEC/EN 60529**: IP40
- Climatic tests: **IEC/EN 60255-7**

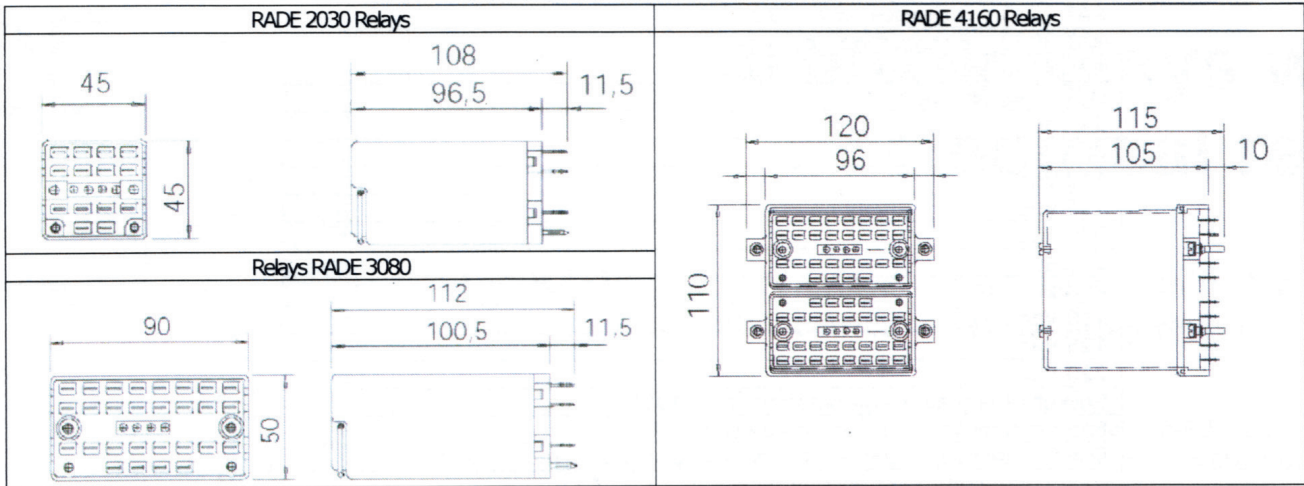
## Weight (without base)

Relays	Weight
RADE2030	300 g
RADE3080	600 g
RADE4160	1400 g

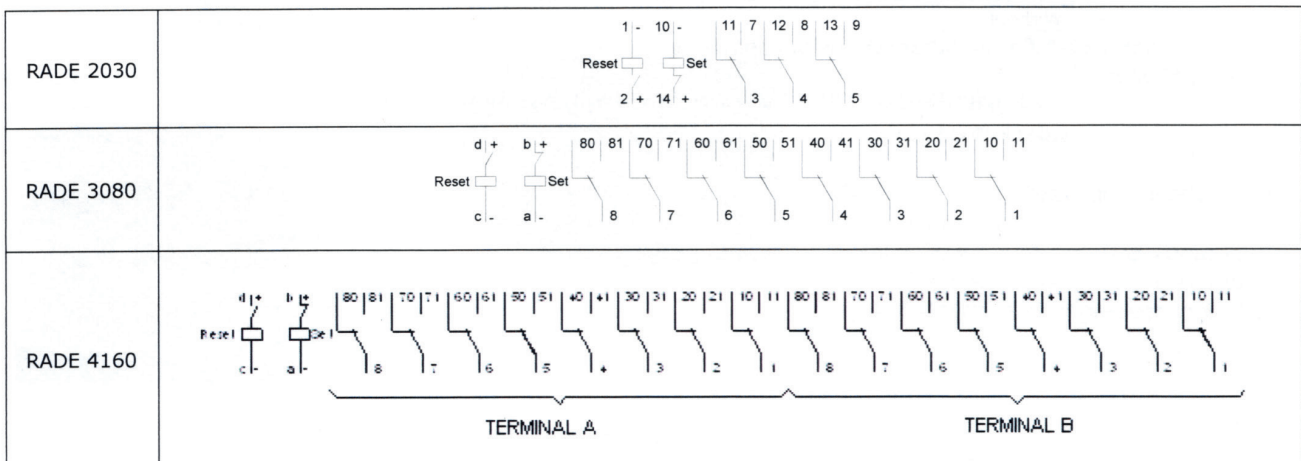
Curves of cut capacity



## Dimensions



## Diagrams



## Ordering information

Relays*					
RADE2030 – 3 change-over contacts					
RADE3080 – 8 change-over contacts					
RADE4160 – 16 change-over contacts					
Operating voltage*					
24 Vdc					
48 Vdc					
110 Vdc					
125 Vdc					
220 Vdc					
24 Vac					
48 Vac					
110 Vac					
125 Vac					
220 Vac					
Frequency (except RADE4160 provided with 50 and 60 Hz)					
50 Hz					
60 Hz					
Socket type (see documentation ref. A495)					
Front connection - connection by screw M3 - PAV					
Front connection - connection by clip (faston) 6.35 mm - PAVC					
Rear connection - connection by screw M3 - PAR					
Rear connection - connection by clip (faston) 6.35 mm - PARC					
Retaining clips (see documentation ref. A495)					
With (except RADE4160 provided with retaining screws)					
Without					

\*For all other requests, consult us.

Example: RADE2030 – 125 Vdc - PAV – Without retaining clips