

# Modular Residual Current Device (MRCD)

## according to IEC 60947-2 Annex M

### What is an MRCD?

An MRCD is a device or a combination of devices intended for the detection and evaluation of residual currents. It can be used for protective purposes. By connecting it to a switching element with isolating properties, the MRCD can trip the switching element within a very short time in the event of a fault.

### How is an MRCD designed and connected?

The MRCD is available in two different variants:

- as device (detection and evaluation of the residual current combined, e.g. Bender MRCD B300 series)
- or as a combination of devices (evaluation unit and current detection unit separately, e.g. Bender MRCD B423 with CTUB100 series)

The MRCD is connected to the release of a switching element with isolating properties (e.g. circuit breaker). For personal and fire protection, an undervoltage release should be used; for plant protection, a shunt trip can be used.

### How does an MRCD operate?

When the adjustable prewarning threshold is exceeded, a potential-free contact switches.

If the set response value is exceeded, the alarm relay of the MRCD switches and activates the undervoltage release or the shunt trip of the circuit breaker.

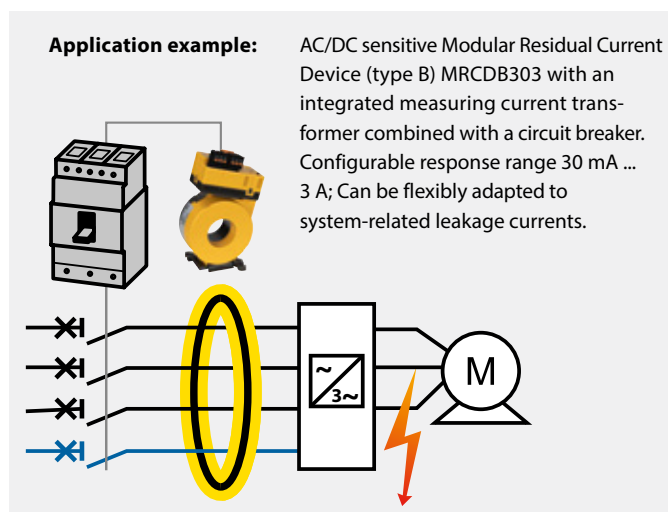
### When may an MRCD be used?

An MRCD solution can be used for protection against electric shock by automatically switching off the power supply in the event of a fault or for additional protection (IEC 60364-4-41).

Furthermore, it can be used as a preventive fire protection measure in accordance with IEC 60364-5-53.

### Your benefits:

- Flexibly adaptable to the installation
- Nuisance tripping is reduced
- Residual current detection by means of a measuring current transformer
  - Independent of mains voltage and frequency
  - Can be used with high load currents
- Response values according to IEC 60364-4-41
- Adjustable time delay according to IEC 60364-4-41
- Prewarning – offers the following advantages to the system operator:
  - Early information on insulation level before shutdown
  - Prevents unplanned and cost-intensive downtimes
  - Higher operational and system safety



### What does MRCD stand for?

RCD (Residual Current Device) is the generic term for all types of residual current protective devices. In addition to the well-known RCCB, RCBO and CBR (circuit breaker with residual current protection), this product group also includes the MRCD (Modular Residual Current Device).

All the devices mentioned are capable of detecting a residual current and disconnecting the monitored circuit in the event of a fault. A disconnection as required by IEC 60364-4-41 takes place.

Residual current devices are required or recommended in many areas (IEC 60364-5-53).

