

Protection of persons, fire and plant protection – not an issue?

Modern applications require market-driven solutions. One of these solutions is the new series of AC/DC sensitive SensorPRO residual current monitors with integrated measuring current transformer. Bender expands its portfolio with new sensors and devices for data acquisition and evaluation.

These sensors and devices each consist of two components: a current transformer module (without electronic elements) and an electronic module which contains intelligence. The electronic module is located directly on the current transformer module to form a functional unit.

One component of the modular series are new AC/DC sensitive devices for use as modular residual current devices – type B MRCDs – in accordance with the current version of the standard IEC 60947-2 Annex M. They can be used in industrial environments in conjunction with a suitable disconnecting device for protection of persons, fire or plant protection and combine measuring current transformers and evaluation electronics, making an additional evaluator no longer necessary.

The integrated relays can be used to control the disconnecting device and issue a prewarning. Furthermore, the Modbus interface offers the possibility of continuously monitoring the leakage and fault currents of the system in a higher-level monitoring system and, if necessary, analysing them.

Due to the optionally available, fully shielded transformer modules, the new MRCDs are optimally suited for special applications with high and rapidly changing inrush and pulse currents (e.g. various welding applications); false tripping in installations is therefore avoided. The frequency range up to 100 kHz ensures that the requirements of the standard IEC 60364-4-42 and those of the VdS (VdS 2033) with regard to fire safety are met in full, making the devices also predestined for use in fire hazardous locations such as sawmills.

Advantages at a glance

- A good alternative to "conventional" RCDs when they reach their performance limits, for example when used in applications with high currents and voltages.
- In contrast to "conventional" RCDs, MRCDs can be flexibly adapted to the system, which reduces false tripping caused by leakage currents and other influences.
- Continuous monitoring of residual currents, i.e. fault or residual currents are detected and if the set residual operating current is exceeded, shutdown occurs within the times required by IEC 60947-2 Annex M.
- If the prewarning threshold is exceeded, a message is issued so that also with MRCDs a deterioration of the insulation can be detected early on. In this case, preventive maintenance can avoid a shutdown of the system.

- The following protection goals can be met in full:
 - Protection of persons
 - Fire protection
- The use of an MRCD also provides additional plant protection for manufacturers and operators.