

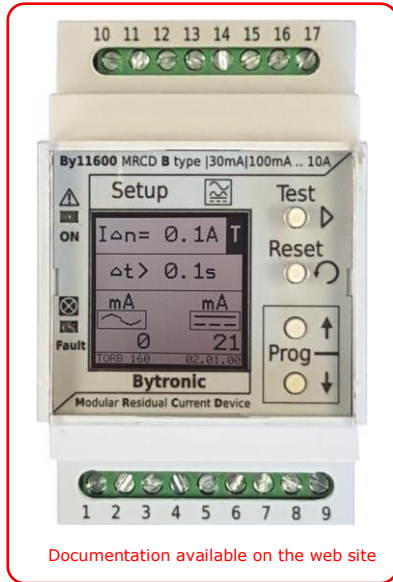
# Residual current relay with a separated toroidal transformer - Type B (MRCD – Modular Residual Current Device)

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## By11600

**By11600 is a differential electrical protection to be installed where required. It intervenes in case of failure.**

**By11600 allows to establish, according to the various possible settings, intervention selectivity criteria in complex industrial plants**



- ✓ Three DIN modules
- ✓ Graphic display (*Ink look*)
- ✓ RMS measures
- ✓ Alarm (trip) relay: changeover contact
- ✓ Pre-alarm relay: changeover contact
- ✓ Relays that can be set for "Positive Safety" behavior
- ✓ Remote reset (Vac - Vdc)
- ✓ Single **TORB** toroid with through hole Ømm 35 - 60 - 80 - 110 - 160 - 210
- ✓ Tripping times separately selectable for (Tripping) Alarm or Pre-alarm
- ✓ Tripping thresholds separately selectable for (Tripping) Alarm or Pre-alarm
- ✓ Current sensor diagnostics **TORB** toroid "Disconnected" or "Short circuit"

## Settings

- $I_{\Delta n}$  (fault current): 30, 100, 200, 300, 500 mA  
1, 3 A, 5 A, 10 A
- Time: (30 mA = Ist) 100, 200, 300, 400, 500, 750 msec  
1, 5, 10 sec

## Reference Standards

- CEI EN 60947-2 :2019-03 "Annex M" MRCD type B  
(identical to EN 60947-2:2017-10 and IEC 60947-2:2016-06/COR1:2016 Ann. M)
- CEI EN 61869-2 :2014-05  
(identical to EN 61869-2:2012-11 and IEC 61869-2:2012-09)
- European Directive LVD 2014/35/EU
- Electromagnetic Compatibility: (EN edition in force in November 2019)
  - EN 61000-4-2
  - EN 61000-4-3
  - EN 61000-4-4
  - EN 61000-4-5
  - EN 61000-4-6
  - EN 55016-2-1
  - EN 55016-2-3
  - EN 61000-3-2
  - EN 61000-3-3

### NOTE



MRCM (Modular Residual Current Monitor) devices **cannot replace MRCD devices in the function of safety device in case of failure.**

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## Application fields

- **equipments containing frequency converters (inverters)**  
Lifts, machine tools, robotics, manipulators, transfer lines, fans, circulation pumps, centrifugal pumps, conveyor belts, agitators, mixers, dryers, dosing machines, packaging machines, mills, centrifuges, machines for the wood industry, textile machines ...
- **equipment containing AC to DC converters (with three-phase bridges, thyristors, Gate Turn Off ...)**  
Extruders for plastic materials, paper mills, lifting systems, iron and steel industry, presses, dies ...
- **equipment containing DC to AC converters (PV)**  
Photovoltaic systems, industrial DC power supplies for electroplating ...

## Toroids



Toroidal current reducers to be combined with the By11600, type B residual current relay. Made up of a special magnetic core which allows the detection of fault currents with a value of a few mA AC / DC.

Toroid ratio: 50/0.1  
Standard terminal cover

Category III (Un: 400 Uimp: 4 kV) - EN 61869-2:2012-11  
Frequency: 50-60 Hz

The features and performance of the product described in this document are not binding and may be changed at any time without notice by Bytronic.

### WARRANTY

Legal warranty. It has not provided any further express or implied warranty. In no case Bytronic can be liable for consequential or special damages of any kind arising from the use of its products or lost profits.

**THE WARRANTY DOES NOT APPLY IN CASE OF IMPROPER USE**

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