



Type B HP RCD Data Sheet

Description and Features

Heat Pump RCD

The WHP B Type RCD is designed to detect and trip under smooth DC faults at any level. Tested to operate at frequencies above 20 kHz, with a minimum tripping threshold of 150 mA for frequencies over 1 kHz.

Type B High-Performance RCDs: Technical Overview

- **Two pole two module:** Space saving design enables easier installation using standard busbar.
- **Compliance with BS 7671 Standards:** These devices meet the requirements set out in BS 7671, ensuring they provide the necessary protection in modern electrical installations.
- **Effective Operation at High Frequencies:** Designed to function reliably at frequencies of 20 kHz and above, making them suitable for applications involving variable-speed drives and heat pump systems.
- **Detection of Smooth DC Fault Currents:** Capable of detecting and interrupting continuous smooth DC residual currents, which is essential for comprehensive fault protection in systems where such currents may be present.

Why Type B HP RCDs Are Important for Heat Pumps

Modern heat pumps, especially those with inverter-driven compressors, create high-frequency electrical currents when converting AC to DC power. These can include smooth DC and high-frequency residual currents that regular Type B RCDs (designed for 50 Hz) may not detect properly.

Not all Type B+ devices are suitable for heat pumps. That's why Whitecliffe Type B HP RCDs, designed specifically for these conditions, are the right choice for safe and compliant installations.

What Makes Type B HP RCDs Different?

Type B HP RCDs are specially developed for use with heat pump systems. They meet all the requirements of standard Type B RCDs, but go a step further—they're built to operate at frequencies above 20 kHz, which are common in modern heat pumps.

They also ensure reliable protection by tripping at a minimum threshold of 150 mA for frequencies over 1 kHz, offering an added layer of safety in high-frequency environments.

Why Some Type B RCDs Trip at 1 kHz

Not all Type B RCDs are built to cope with the high-frequency currents produced by modern heat pumps. Some models are only rated to handle frequencies up to 1 kHz, which means they can trip unnecessarily when exposed to the higher-frequency residual currents these systems generate.

This can cause nuisance tripping and unexpected downtime. That's why it's important to use a Type B HP RCD—specifically designed to handle higher frequencies without compromising performance or reliability.



Height - 82mm
Width - 35mm
Depth - 77mm

Which RCD to Use



AC - not suitable for heat pumps



A - unreliable tripping under smooth DC faults or high-frequency currents.



F - Limited high-frequency performance; Ineffective against smooth DC faults.



B - Reliably detects and trips on smooth DC faults at all levels, though limited to frequencies up to 1 kHz.



B HP - Detects and trips on smooth DC faults at all levels. Verified to handle frequencies above 20 kHz with a minimum tripping threshold of 150mA above 1 kHz

