

Type B HP RCD

Heat Pump Consumer Unit

A new addition to the Whitecliffe range of renewable energy boards.

Metal enclosure containing a surge protection and a B type RCD to protect against DC earth leakage.

Complete Protection in One Unit

Each metal enclosure includes a Type B RCD, offering full protection against DC earth leakage currents—essential for modern inverter-driven heat pump systems.

Part code	Description	Dimensions
WME08/HP40C	Metal 8 module enclosure with surge protection, type-B RCD and 40A MCB's	232x240x112
WME08/HPRC40C	Metal 08 module enclosure with surge protection, 40A RCD and 40A MCB two 16A RCBO's	232x240x112



Custom Build Variants are available,
contact Whitecliffe Technical Dept with your requirements

• Type B HP RCD

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.

Type 'B' devices are also suitable for type 'AC', type 'A' and type 'F' applications

Which RCD to Use

 <p>AC - not suitable for heat pumps</p>	 <p>F - Limited high-frequency performance; ineffective against smooth DC faults.</p>	 <p>B - Reliably detects and trips on smooth DC faults at all levels, though limited to frequencies up to 1 kHz.</p>	 <p>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 150 mA above 1 kHz</p>
 <p>A - unreliable tripping under smooth DC faults or high-frequency currents.</p>			
			
			



Height - 82mm

Width - 35mm

Depth - 77mm