

becker

MINING AUSTRALIA



2022 HARDROCK PRODUCT RELEASE

415V & 1000V Starters Single & Dual Outlet

1000V 6 Outlet DCB

11kV/1kV 1.5MVA Substations

1000V Communication Booster Panel



**Becker Mining Australia specialises
in the manufacturing of standard
and tailored made solutions for all
tunnelling and hardrock mining
applications.**

Product Range Overview

Engineered and designed by our team of professionals, and backed by our local on the ground support, we will continue to lead the way. Our dedicated focus to provide a safe and reliable solution will continue throughout industries.

We are pleased to offer a new range of electrical products for 2022 for the Hardrock industry, these range of products allow Becker Mining Australia to provide full packages, from surface to underground communications, we will provide the full end to end solution.

All products manufactured by Becker Mining Australia are fully tested and verified through our detailed commissioning processes and procedures, to meet the requirements of Australian and Mine specific standards. Becker Mining provide customers the opportunity to conduct live remote witness testing as a COVID – 19 safe measure.



Communications Booster Panel

The Becker DC Booster panel is designed to safely provide a stable DC voltage for use in underground mining communications networks. The booster panel is a fully portable step-down voltage converter, capable of receiving an input voltage as high as 1000VAC and producing a DC voltage between 12-36V DC for leaky feeder power applications.

The booster panel has in-built overcurrent protection and battery back-up for redundancy in the event of mains power loss.

Product Specifications

- ▶ 600 wide x 800 high x 300 deep 2.0mm blue powder coated enclosure
- ▶ Fully protected in blue Dura gal support frame
- ▶ ABB T4 32A Main Circuit Breaker c/w external pad lockable handle
- ▶ 1kV 6A HRC fuses and fuse bases
- ▶ 1kV – 110VAC 650VA control transformer • 1 x 2 pole 110VAC 10A/30mA RCD/MCB
- ▶ 1 pole 10A MCB
- ▶ 1 pole 6A MCB's
- ▶ 1kVAC – 240VAC Step Down transformer.
- ▶ 240VAC – 12-36VDC 10A power supply
- ▶ 12VDC 33Ahr battery backup
- ▶ 12V LED Indications as follows:
 - 1 x Green Power On,
- ▶ Under Voltage protection
- ▶ Analogue Ammeter
- ▶ Analogue Voltmeter
- ▶ Terminals for connection of field devices
- ▶ Reflective Signage
- ▶ Full labelling as per specifications
- ▶ Pressure compensation vent



415V & 1000V Configurable Starters

Becker Mining Australia provides a range of standard portable starter panels available in the low voltage range. These starters enable peace of mind for the protection of equipment and people with the quality of ISO9001 build performed by our team. The system is available from standard versions which complies with Australian underground mining standards through to bespoke design to fit requirements.

Available Product Range

- ▶ Jumbo Starter
- ▶ Pump Starter
- ▶ Fan Starter

Product Specifications

- ▶ 600 x 800 x 300 Deep Blue Power Coated Enclosure
- ▶ Fully Protected in Blue Duragal support frame
- ▶ ABB circuit breakers 1kV 30kA 160A MCB c/w External Padlockable Isolating Handle
- ▶ Sprecher & Schuh CA6-140EI Contactor
- ▶ Earth Leakage Relay c/w external test and Reset buttons
- ▶ Earth Continuity Relay, complete with Remote start capabilities
- ▶ Start and maintained Stop Button
- ▶ Power On, Pilot Healthy, Run and Earth Leakage fault Indication
- ▶ Pressure Equalising Vent
- ▶ Laminated CAD Drafted Drawings
- ▶ Live Line indication
- ▶ Emergency stops

Available Options

- ▶ Network & Wi-Fi capabilities
- ▶ Becker ProBeck protection relay
- ▶ Up to 132kW
- ▶ Single or dual outlets
- ▶ Receptacle or Glanded
- ▶ Standard Control
- ▶ Telemetry control
- ▶ Dual Stage Pulse start
- ▶ 415V or 1000V



ProBeck Protection Relay

The ProBeck-IPS Relay is a three-phase motor protection relay. It is a micro-controller-based precision instrument with protection, advanced control features and starter logic. The relay is designed to cater for the low voltage motor protection market. The current transformers, including the core balance current transformers are external.

Protection Features

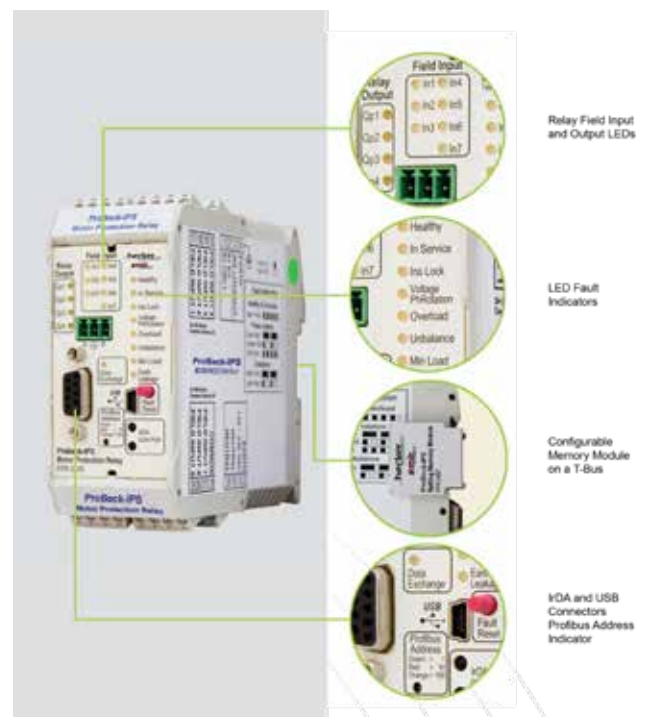
- ▶ Thermal Overload
- ▶ Locked Rotor
- ▶ Running Stall – Jam
- ▶ Vectorial Stall - Start Stall
- ▶ Unbalanced Current
- ▶ Single Phasing
- ▶ Minimum Load – Underload - Dry Run
- ▶ Earth Fault
- ▶ Short-circuit
- ▶ Starts per Hour Limitation
- ▶ Overvoltage – Undervoltage
- ▶ Phase Rotation
- ▶ Over Frequency – Under Frequency
- ▶ Insulation Lock-out

Management Features

- ▶ Power Factor Measurement
- ▶ Power Consumption Measurement
- ▶ Statistical Data
- ▶ 1400 Event Records with time and date stamp
- ▶ 35 Last Fault Records with time and date stamp

Configurable Automation Features

- ▶ Timers
- ▶ Real Time Clock (24 Hour)
- ▶ Starter Controller Logic
- ▶ Logic Function Blocks
- ▶ 7 Field Inputs
- ▶ Motor Parameter Calculator
- ▶ 4 Programmable Outputs
- ▶ 3 Phase Recorder
- ▶ On-board Simulator for Training/ Commissioning
- ▶ Multiple Communication Protocols



1000V 6 Outlet DCB

Specifically designed for hard rock application the Becker DCB panels enable power to be safely split to multiple locations. Each DCB is customised to meet specific mine site requirements while maintaining a high quality build and meeting regulatory

Product Specifications

- ▶ 1700 Wide x 1200 High x 400 Blue Power Coated Enclosure, complete with Isolated and enclosed compartments for Main Circuit Breaker and Busbar areas
- ▶ Fully Protected in Blue Duragal support frame
- ▶ ABB circuit breakers 1kV 630A MCB c/w External Padlockable Isolating Handle
- ▶ Individual Earth Leakage Protection on each Circuit Breaker
- ▶ Power On, Earth Leakage Healthy, Fault Indication
- ▶ External Control of Earth Leakage Test and Reset via front panel
- ▶ 24Volt AC Control Voltage
- ▶ Full Laminated CAD Drawings.
- ▶ Live Line indication
- ▶ Emergency stop



Available Options

- ▶ Network & WIFI capabilities
- ▶ Becker ProBeck protection relay
- ▶ Up to 132kW
- ▶ Receptacle or Glanded

11kV/1kV 1.5MVA Substations

Specifically designed for Hardrock applications Becker Mining Australia can provide standard or customised configurations to meet the specific mine site requirements.

Typically, the standard substation is a 11kV/1kV 1.5MVA with up to 8 outgoing 150A outlets, The main incoming supply is an enclosed fully certified and tested RMU allowing through connection to other switchgear and provides a safe method for isolation.



Product Specification

- ▶ Skid Base
- ▶ RMU
- ▶ ABB Circuit Breakers
- ▶ Sprecher + Schuch Contactors
- ▶ Earth Leakage & Earth Continuity
- ▶ Live Line indication
- ▶ Emergency Stop
- ▶ Remote Pendant
- ▶ Lighting

Available Options

- ▶ PLC & Scada
- ▶ WIFI capabilities
- ▶ Becker Probec protection relay
- ▶ Wheels
- ▶ Draw Bar
- ▶ Larger transformer 2MVA
- ▶ Glanded or Receptacles
- ▶ RMU or High-Tension End





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