

SAFETY ISOLATION SWITCH FOR UNDERWATER CUTTING & WELDING



SYNERGY
INNOVATIVE DIVING EQUIPMENT TRADING LLC

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The Synergy Safety Isolation Switch is a portable, heavy-duty switching unit designed to provide safe electrical isolation during underwater cutting and welding operations.

Engineered for surface-oriented air and mixed-gas diving systems, the unit enables the diving supervisor or welding coordinator to safely control welding power to the diver through a simple HOT/COLD switching mechanism.

The system incorporates a 400 A dual-pole isolation switch, visual status indication, polarity selection capability, and a zero-centred voltmeter for rapid verification of correct cable connections.

Built for demanding offshore and marine environments, the enclosure is IP67 rated with the lid closed & offers excellent resistance to dust, moisture, corrosion, & impact.



Part No: SY-BRUW-CWS



SPECIFICATIONS:

SWITCH RATING:

- Type: Dual-pole safety isolation switch
- Continuous Current Rating: 400 A
- Duty Cycle: Refer to unit data label
- Operation: Manual HOT/COLD switching

ENCLOSURE:

- Type: Portable
- Material: Steel / HPX Resin
- Colour: Olive, Black, Orange
- Wall Thickness: 1.2 mm
- Protection Rating: IP67 (lid closed)

CONNECTIONS:

- Cable Connectors: Standard DIN 35–50 mm² plugs and sockets
- Welding Power Source Connection: Dedicated plant side
- Diver Connection: Dedicated diver side with selectable polarity

MONITORING & INDICATION:

- Voltmeter: Zero-centred analogue meter
- Status Indicator: Illuminated HOT indicator lamp
- Polarity Selection: Terminal A/B configuration

OPERATING PRINCIPLE:

- Connect welding cables from the power source to the welding plant side of the unit.
- Verify correct polarity using the zero-centred voltmeter. Select the required diver-side polarity using terminals A or B.
- Pull the red control knob to energize the circuit (HOT).
- Push the control knob down to isolate the circuit (COLD).
- Confirm circuit status using the integrated indicator lamp.
- **Important:** Polarity changes must only be made on the diver side of the panel.

SAFETY NOTES:

- Ensure all cable connections match the indicated polarity.
- Do not alter cables on the welding machine side once connected.
- Use only approved DIN cable connectors.
- Observe switch duty cycle limitations to prevent overheating.
- Allow adequate cooling periods during extended operation.
- Use appropriately rated welding cables to minimize voltage drop.
- All personnel involved in underwater electrical operations should be familiar with **IMCA D045**.

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