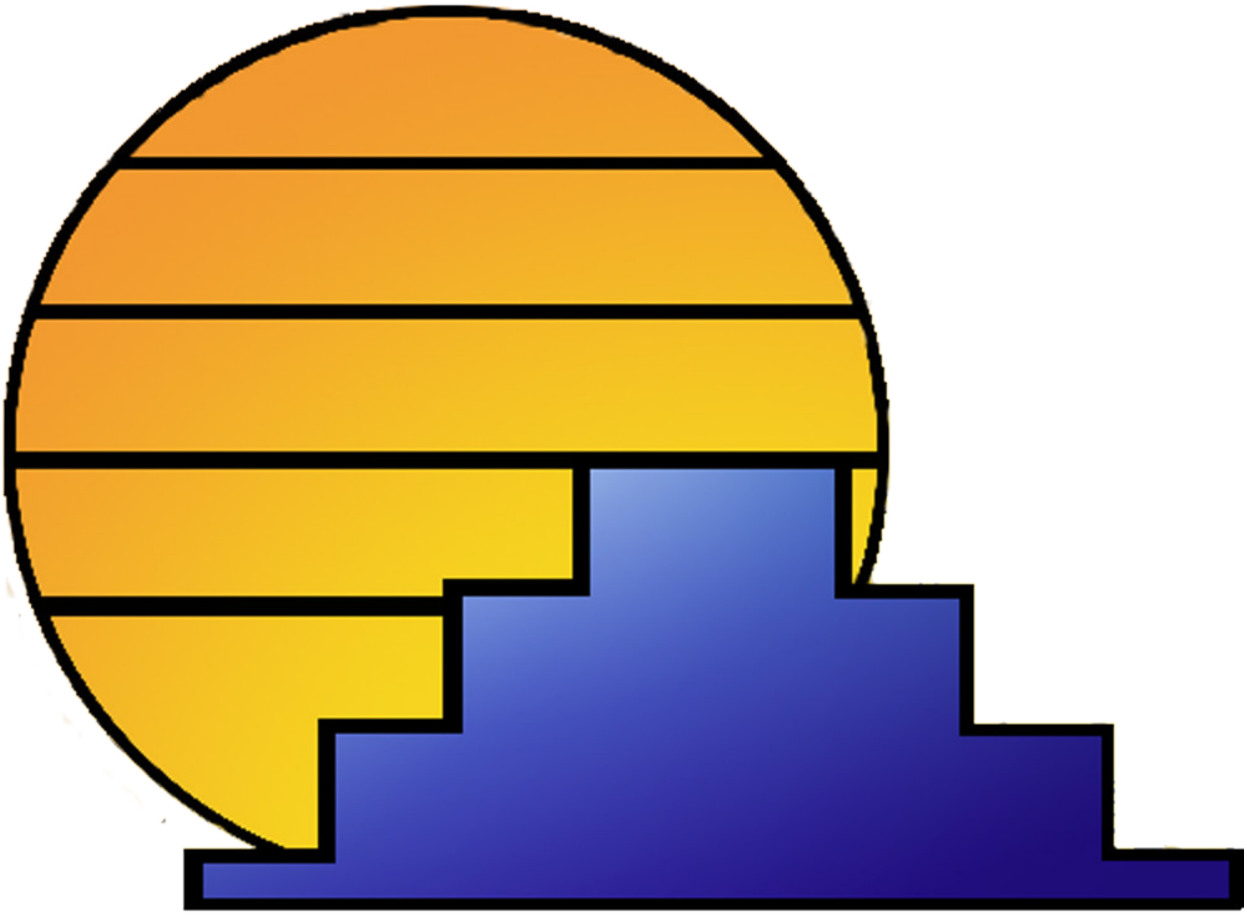

THE 12 VOLT SHOP

LOW VOLTAGE SPECIALISTS

12VS CONTROL HUB USER MANUAL

INSTALLATION MANUAL BRIEF: 12VS CONTROL HUB

1. INTRODUCTION & OVERVIEW

The 12 Volt Shop Control Hub is a pre-wired, turn-key power distribution center designed to centralize and simplify your 12V or 24V mobile or off-grid electrical setup.

Featuring integrated switching, high-current Anderson connections, fast-charging USB ports, and mounting provisions for major charger brands, this hub eliminates messy wiring and streamlines your installation.

INDESTRUCTIBLE CONSTRUCTION & LAYOUT

- Chassis Build: Constructed from powder-coated iron to withstand the corrugated punishment of the outback.
- Inputs & Outputs: A complete power distribution center featuring 19 Inputs/Outputs to handle your electrical setup.

POWER & CONNECTIVITY FEATURES

- Premium Switching: 5 x aluminium fascia rocker switches provide tactical control over lights, pumps, and fridges.
- Universal Connectivity: 2 x accessory sockets (cigarette lighter style) for standard gear.
- High-Current I/O: 6 x 50A grey Anderson plugs handle high-draw appliances with ease.
- Smart Config: When DC charging is selected, 2 x grey plugs are swapped for red and black Andersons to create dedicated, fail-safe inputs for vehicle and solar power.

NEXT-GEN FAST CHARGING (STARLINK READY)

- Standard Fast Charge: 2 x 83W dual USB-A and USB-C outlets (QC3.0 and PD 65W) keep phones, tablets, and drones powered.
- Starlink Mini Compatible: 1 x massive 136W dual USB outlet featuring a 100W QC5.0 PD port capable of up to 20V/5A, providing enough juice to power the Starlink Mini directly without bulky adapters.

THE "BUILD-YOUR-OWN" BRAIN & FLEXIBILITY

- DC-DC Charger Ready (Left Lid Mounting): Pre-drilled and ready to mount powerhouse chargers including Victron (Oron XS 12/12-50 or Orion XS 1400) and Projecta (Intelli-Charge IDC25X or IDC50X with in-built MPPT).
- Solar MPPT Ready (Right Lid Mounting): Provisions for Victron SmartSolar MPPT 75/15 or SmartSolar MPPT 100/20.
- Precision Monitoring: Includes a 12/24V voltmeter to monitor lead-acid batteries (AGM/GEL/Flooded) alongside internal provisions for Victron 300A and 500A SmartShunts or BMV-712 Shunts, plus a dedicated spot on the front lid to mount the Victron BMV-712 screen.

2. SAFETY PRECAUTIONS

- Isolate Power First: Always disconnect and isolate all power sources (batteries, solar panels, and vehicle alternators) before opening the enclosure housing or modifying any internal wiring.
- Environmental Protection: Mount the unit in a clean, dry location protected from direct exposure to water, heavy moisture, and prolonged blazing sunlight.
- Proper Fusing: Never bypass, bridge, or substitute fuses with incorrect amperage ratings. Always match replacement fuses to the circuit specifications.
- Cable Integrity: Inspect all input and output cables for wear, cuts, or damaged insulation prior to energizing the system.

3. MOUNTING THE ENCLOSURE

- Choose a flat, structurally sound mounting surface—such as a canopy wall, van interior bulkhead, or 4WD rear storage system—capable of supporting the weight of the loaded hub.
- Mark and drill mounting holes directly into the base of the control hub chassis to align with your chosen mounting surface. Take care to clear any internal components or clear out any metal shavings before securing. (External Brackets will be available in near future)
- Secure the powder-coated iron chassis firmly using appropriate hardware suitable for your vehicle or structure.
- Ensure adequate clearance around the unit for cable routing and ventilation.

4. SYSTEM CONNECTIONS & WIRING

- Opening the Housing: Ensure all external power is switched off or disconnected. Remove the access lid fasteners carefully to expose the internal terminal blocks, fuse block, and switch wiring.
- Device Integration: Connect your accessories (lights, pumps, fridges) directly to the internal switch terminals and fuse block according to your load requirements. Accessories connected to the switches feature a positive cable installed with a spade connector, which attaches to the unused spade terminal on the back of the rocker switch, while the negative cable utilizes a ring terminal that connects to the negative busbar.

5. MAIN BATTERY & CHARGING INPUTS:

- Connect power to the designated positive and negative dual bar input studs, using appropriate cable and fusing the connection correctly at the battery.
- Use a cable size ranging from 6 B&S (13.5mm2) to 4 B&S (20.29mm2) depending on whether chargers are installed within the hub
- Use appropriate fuse at the battery for the cable chosen. If using Twin Core Cable remember to downsize fuse accordingly due to cable de-rating for touching cables. If running Single Core cable ensure that both cores are not sharing the same conduit as this acts as a Twin Cable in terms of de-rating factors

6 B&S Single Core	6 B&S Twin Core	4 B&S Single Core	4 B&S Twin Core
80A Fuse	60A Fuse	100A Fuse	80A Fuse

Inverter Consideration: If running a heavy-duty inverter, it is strongly recommended to mount the system shunt externally to facilitate safe and clean cable management for heavy-gauge wiring.

6. PRE-POWER-UP CHECKLIST

- Double-check all terminal connections for tightness and correct polarity.
- Verify that all fuses are securely seated in the 6-circuit blade block and match the required circuit protection.
- Ensure no bare wires or loose strands are touching adjacent terminals or the metal chassis.
- Re-secure the enclosure lid before turning on your primary power sources.

TECHNICAL SPECIFICATIONS BREAKDOWN

Feature	Specification	Protection
Switches	5x Aluminium Rocker (12/24V)	3 x Fused @ 10A, 2 x Fused @ 15A (Combined)
Acc. Sockets	2x Standard 12/24V Sockets	Fused @ 15A (Combined)
Standard USB	2x 83W Dual (USB-A QC3.0 / USB-C PD 65W)	Fused @ 10A (Combined)
High Power USB	1x 136W Dual (USB-A QC3.0 / USB-C PD QC5.0 100W)	Independently Fused @ 10A
Connection	6x 50A Anderson Plugs	Fused in pairs @ 60A
Fuse Block	1x 6-Circuit Blade Block	Central Protection for Switch & USB Circuits