



BATTERY CONTROL CENTER FOR TWIN ENGINE VESSELS

**OPERATING INSTRUCTIONS
AND INSTALLATION**

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The Battery Control Center centralizes power routing from your batteries to end circuits, with the benefit of turn-key security, and BEP's patented lock-switch design.

- Control all battery switches from one convenient position
- Ability to isolate all batteries via key switch or designated battery banks via lockable switches
- LED Status indicators for battery switch status.
- Uses contour connect molding to match other BEP products
- Full set of labels supplied for each battery switch
- All mounting features of Contour Connect panel range

The twin engine remote switch cluster consists of three 701-MD (HOUSE, PORT START and STBD START) and two 701-MDVS (EMERGENCY PARALLEL).

The MD range offers the following features:

- Remote operation (easier access for battery control).
- Battery switch can be mounted alongside battery, reducing cable lengths and cable size to starter motor.
(Large cost saving in copper cable).
- Reduced labour for fitting, due to shorter battery cabling (cost saving).
- Manual override option to meet CE requirements.
- LED status identification for remote control switch.
- Same capacity/specification and mounting options as standard BEP battery switches.
- Utilizes same interchangeable labelling system as BEP battery switch.

UNIT DESCRIPTION	BEP PART NUMBER
CONTOR CONNECT BATTERY CONTROL PANEL	80-700-0050-00
SINGLE ENGINE REMOTE SWITCH CLUSTER	80-716-0014-00
TWIN ENGINE REMOTE SWITCH CLUSTER	80-716-0015-00
TRIPLE ENGINE REMOTE SWITCH CLUSTER	80-716-0016-00
CONTOR CONNECT SINGLE ENGINE REMOTE SWITCH CLUSTER	80-700-0047-00
CONTOR CONNECT TWIN ENGINE REMOTE SWITCH CLUSTER	80-700-0048-00
CONTOR CONNECT TRIPLE ENGINE REMOTE SWITCH CLUSTER	80-700-0053-00

Operation:

The twin engine battery control centre has a dedicated key switch, which can control both the start and house 701-MD battery switches.

This will allow the boat user to conveniently enter the boat and operate all battery isolation switches via a single key switch.

Once the engines have been started and the start battery has reached 13.7 / 27.4volts the remote MDVS battery switches will connect the house to the start bank allowing charging current to reach all batteries. For more information on the remote battery cluster operation see sections MD and MDVS.

Contour Connect Control Panel Power Distribution Made Easy.

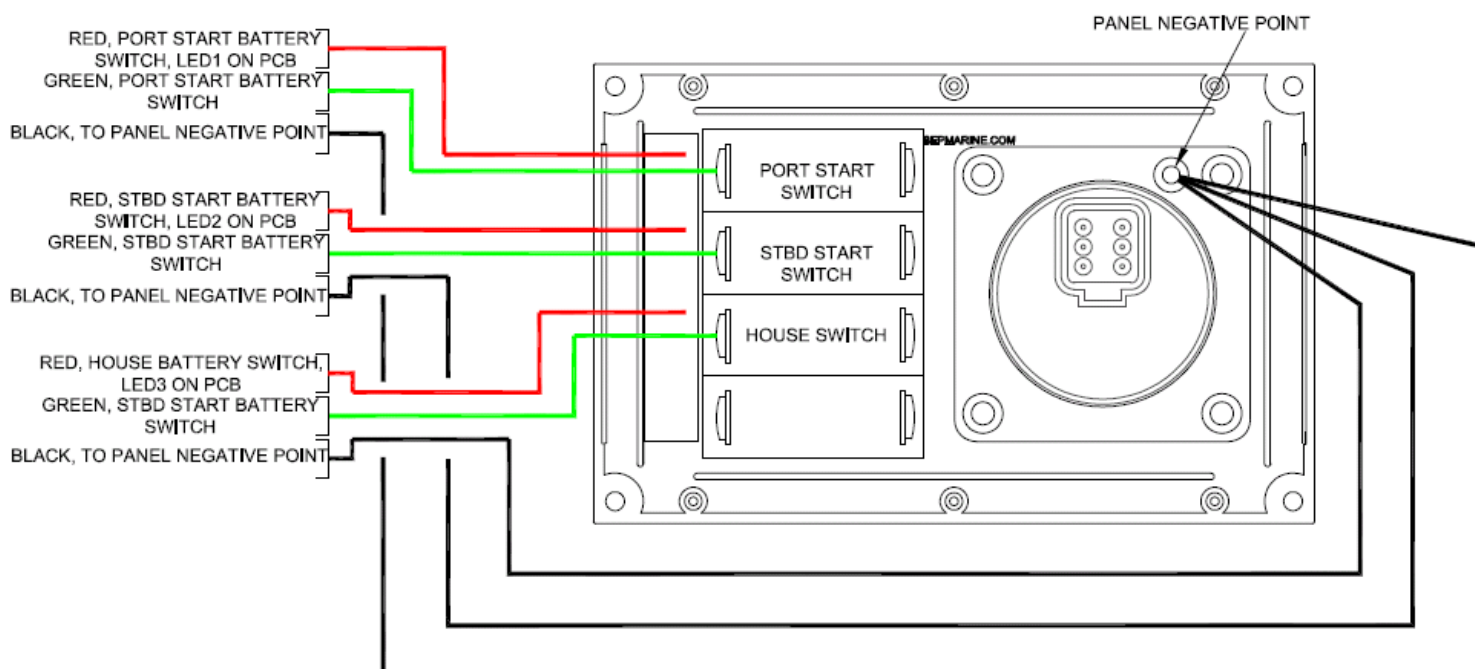
The Control Panel consists of the following:

1. One sealed key switch with integral connector to switch the whole boat on and off.
2. Four toggle lock isolating switches to control each battery switch individually.

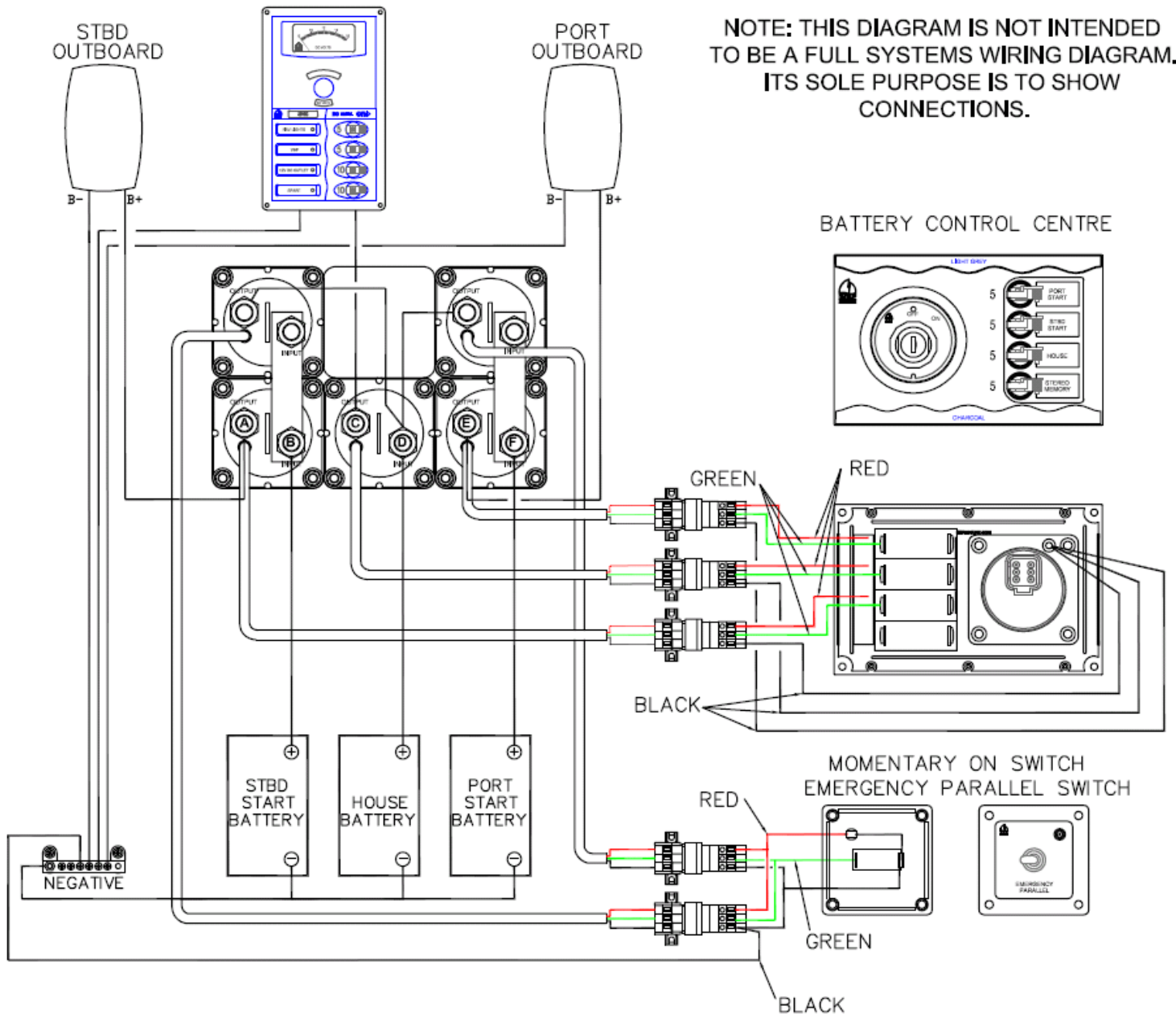
Lift up the toggle lock to manually turn single battery off in an emergency.

The control panel compliments other modules very well for single, twin or triple engine installations. It can be mounted in a vertical or a horizontal format. Joiners are supplied for either options. Also included within the pack is the solid and flexible links for both mounting options.

Note: Spare 5A circuit breakers available in control panel depending on how many engines for using. Wago male & female plugs are supplied with remote switch cluster.



80-700-0050-00, 80-716-0015-00, 80-700-0048-00 INSTALLATION DIAGRAM



- STUD A-** CONNECT TO THE POSITIVE TERMINAL OF THE STBD OUTBOARD MAIN.
- STUD B-** CONNECT TO THE POSITIVE TERMINAL OF THE STBD START BATTERY.
- STUD C-** CONNECT TO THE POSITIVE OF THE HOUSE LOAD.
- STUD D-** CONNECT TO THE POSITIVE TERMINAL OF THE HOUSE BATTERY.
- STUD E-** CONNECT TO THE POSITIVE TERMINAL OF THE PORT OUTBOARD MAIN.
- STUD F-** CONNECT TO THE POSITIVE TERMINAL OF THE PORT START BATTERY.

701-MD:

Introduction: The Motorised Battery Switch (701-MD) has the same mechanism as the well proven 701. The essential difference being the switching action has been motorised.

This permits switching of battery banks remotely. A typical installation is a key operated switch at the helm station and the motorised battery switch installed as close as practical to the battery bank.

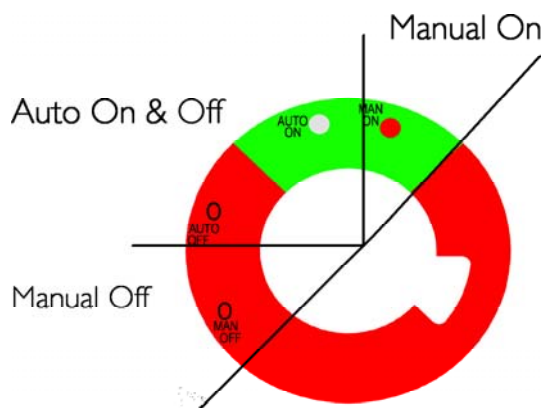
Apart from the convenience of such an installation, this arrangement permits much shorter cable runs to starter motors and other high current applications such as bow thrusters and inverters. As a result voltage drop and use of heavy cable has been kept to minimum.

Specifications:

- Continuous rating: 275 Amps DC
- Intermittent rating: 455 Amps DC
- Cranking rating: 1250 Amps DC
- Maximum Voltage: 32 Volts DC
- Operation: Manual On/Off
Motorised On/Off
- Mounting: Recessed or surface
- Auto operating range 8 to 30 Volts DC
- Ignition protected
- Stud Size: 2 x 10mm(3/8")
- Tin plated copper studs and nuts
- Power draw: Switch in off position: 15mA
- Recommended Maximum Cable Size: 50mm.

If fitting cable in excess of 50mm the cable must be strain relieved with an absolute maximum of 00 or 70mm.

General Operation: The Motorised Battery Switch, (701-MD) has two modes of operation. Auto and Manual. There is a LED located on both the battery switch, indicating Battery Switch status.



Auto Operation: The 701-MD moves from a state of “Auto Off” to “Auto On” when the remotely mounted switch is turned on. During the time that the battery switch is in “Auto On” mode, the “Auto On” LED is illuminated.

Auto operation of the Battery Switch is not possible whilst in manual mode. If auto operation is attempted, the LED will flash for 3 seconds then stop. Knob must be returned to “Auto Off” before normal auto operation can continue.

Manual Operation: The automatic operation of the 701-MD battery switch can be overridden at anytime by **depressing the control knob** and turning clockwise towards the “Man On” position or counter clockwise towards the “Man Off” position.

During the time that the Battery switch is in “Man On” mode, the “Man On” LED is illuminated.

Auto Mode LED Indications:

LED OFF: Battery switch is off

LED ON: Battery switch is on

LED FLASHING: LED flashes whilst moving between auto on and auto off.

LED Rapid Flash: *On 0.1 sec & Off 0.1 Sec*: Voltage is outside specification
i.e. Less than 8 Volts or greater than 30 Volts

Manual Mode LED Indications:

LED OFF: Battery Switch is off

LED ON: Battery Switch is on

701-MDVS:

1. **Introduction:** The **701-MDVS (VSS)** performs an automated paralleling function during charging which allows two separate batteries to be charged as one. (Typically House and Start) The VSS operates under preset parameters that apply to the charging source currently active, eg. engine charging source or any other charging source. The VSS is able to determine which charging source is operating and applies the appropriate cut in, and cut out voltage settings. It is necessary to ensure the correct model is ordered to suit your system. i.e. 12 or 24V. The following voltage parameters are shown for both 12 and 24 Volt units (12V/24V)

2. **Auto Engagement of VSS:** Regardless of the charging source the VSS will engage when the voltage on the start battery is higher than 13.7V/27.4V for more than 5 seconds, or if the house battery is higher than 13.7V/27.4V for more than 5 minutes.

3. **Auto Disengagement of VSS:** Will occur under the following circumstances.

- a. Engine Charging Source: If the batteries drop below 12.2V/24.4V the LED will begin to flash 1 sec. on and 1 off (Mid Flash), and after 5 min if the batteries continue to be under 12.2V/24.4V, the VSS will disengage.
- b. Non Engine Charging Sources: If the batteries drop below 13.0V/26.0V for more than 5 seconds the LED will turn off and after 3 seconds the VSS will disengage.
- c. No Charging Source: If the batteries drop below 13.0V/26.0V for more than 5 seconds the LED will turn off and after 3 seconds the VSS will disengage.

4. **Emergency Parallel Function:** The VSS Emergency Parallel Function can be operated through a remotely mounted momentary switch or button. The VSS will remain in parallel mode for 10 minutes. If after 10 minutes the voltage on either has not reached 13.0V/26V the VSS will disengage. If the voltage reaches 13.0V/26V on either battery the VSS will remain engaged and both batteries will continue to be charged. At any time depressing and holding the momentary switch or button for 5 seconds will disengage the VSS.

5. **Manual Override:** The automatic operation of the VSS can be overridden at anytime by depressing the control knob and turning clockwise towards the “Manual On” position or anti clockwise towards the “Manual Off” position. Once the VSS attempts an automated function whilst in manual override, it determines it is in manual override (On or Off) and the LED will start flashing rapidly.

6. LED Indications:

- a. Auto Mode: ON: VSS is engaged; OFF: VSS is disengaged
Flash: *On 1 Sec & Off 1 Sec*; VSS is in low voltage disconnect mode. Voltage on both batteries is less than 12.2V/24.4V. LED flashes for 5 minutes prior to disengagement. Rapid Flash: *On 0.1 Sec & Off 0.1 Sec*; The voltage is out side specification. i.e. Lower than 8V/15V or higher than 15V/30V
- b. Manual Mode: Rapid Flash: *On 0.1 Sec & Off 0.1 Sec*; VSS is in manual override
- c. Emergency Parallel Mode: Long Flash: *On 5 Secs & Off 0.5 Secs*; Engaged in emergency parallel mode.

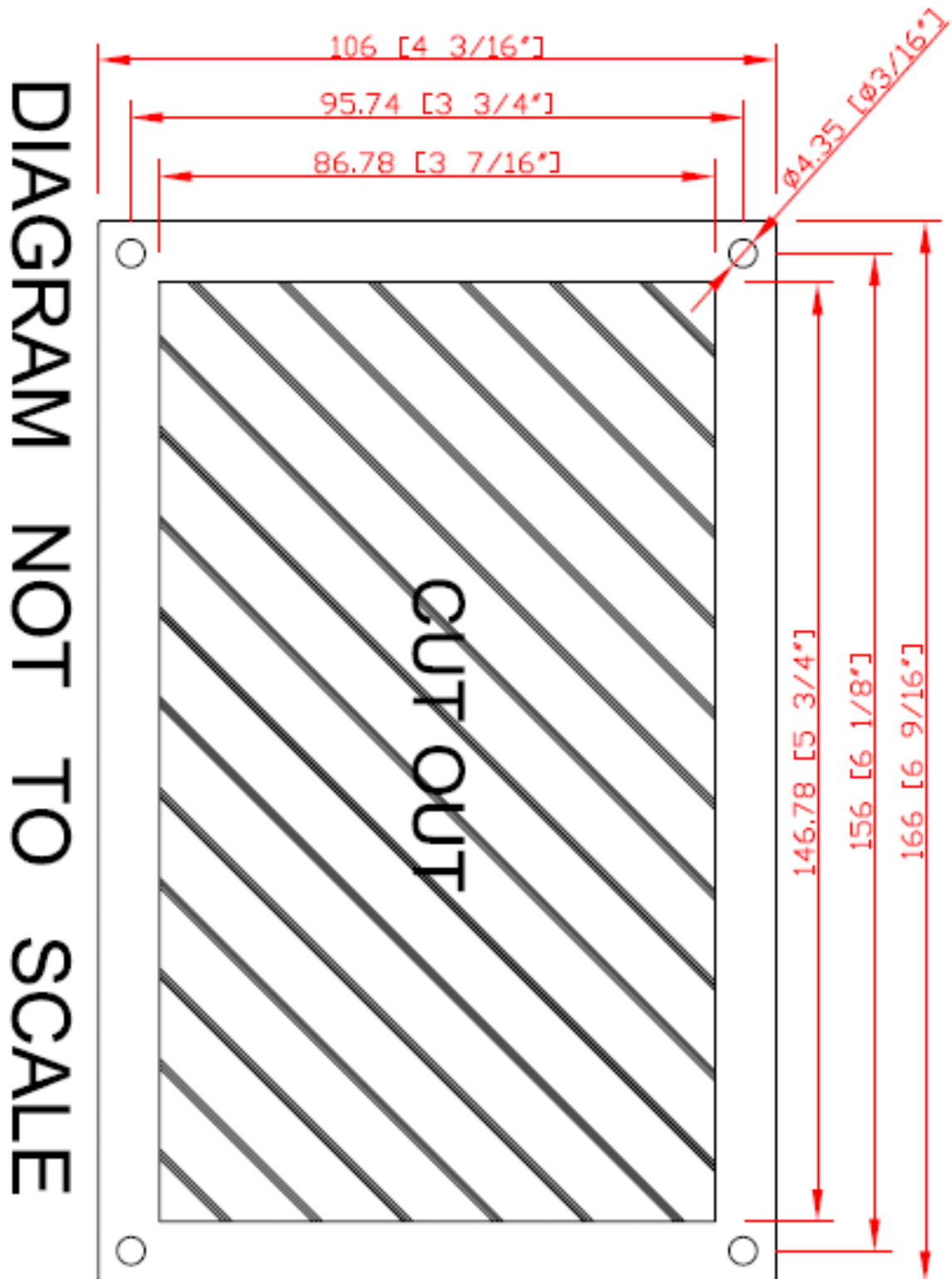
7. Specifications:

- Continuous rating: 275 Amps DC
- Intermittent rating: 455 Amps DC
- Cranking rating: 1250 Amps DC
- Auto Operating Range: 701-MDVS: 8 to 15 Volts DC; 701-MDVS-24V: 15 to 30 Volts DC
- Operation: Manual On/Of; Motorised On/Off
- Mounting: Recessed or surface
- Maximum Voltage: 32V DC
- Recommended Maximum Cable Size: 50mm. (If fitting cable in excess of 50mm the cable must be strain relieved with an absolute maximum of 00 or 70mm.)
- Ignition protected
- Stud Size: 2 x 10mm(3/8")
- Tin plated copper studs and nuts
- Power draw: Switch in off position: 15Ma

Cut-out Template

NOTE: DRAWING NOT TO SCALE. PLEASE USE CONTOUR CONNECT CONTROL PANEL AS A TEMPLATE

THIS CUT-OUT TEMPLATE IS FOR CONTOUR CONNECT PANELS ONLY





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