

Motorised Battery Switch
Model: 720-MDO-EP (Version 8)
Emergency Parallel Switch
OPERATION AND INSTALLATION INSTRUCTIONS

BEP
LEADING ELECTRICAL DESIGN



INTRODUCTION:

The 720-MDO-EP (Emergency Parallel Switch) provides remotely activated, high current, emergency parallel connection of two battery banks, for a 10 minute period following activation of the remote switch. The motorised switch allows the remote switch to be placed in a location convenient to the operator, with the battery switch positioned to minimise voltage drop, saving weight and installation cost.

Designed and constructed for longevity in the marine environment with tinned copper conductors, stainless steel nuts and high temperature, fibre reinforced plastics. The units are ignition protected, provide On/Off switching operation, and may be recessed or surface mounted.

The 720-MDO-EP features digital circuitry and optical sensor positioning that automatically senses 12V or 24V input, is extremely accurate, and offers low power consumption.

This 720-MDO-EP Version 8 offers simplified installation compared to its predecessor. Its connection cable has 3 wire cores terminated into the Wago plug, with internal connections pre-wired for the Printed Circuit Board/Motor power supplies. The previous version 720-MDO-EP had 2 additional wires that needed to be connected externally for the PCB/Motor supplies. Switch functionality remains the same.

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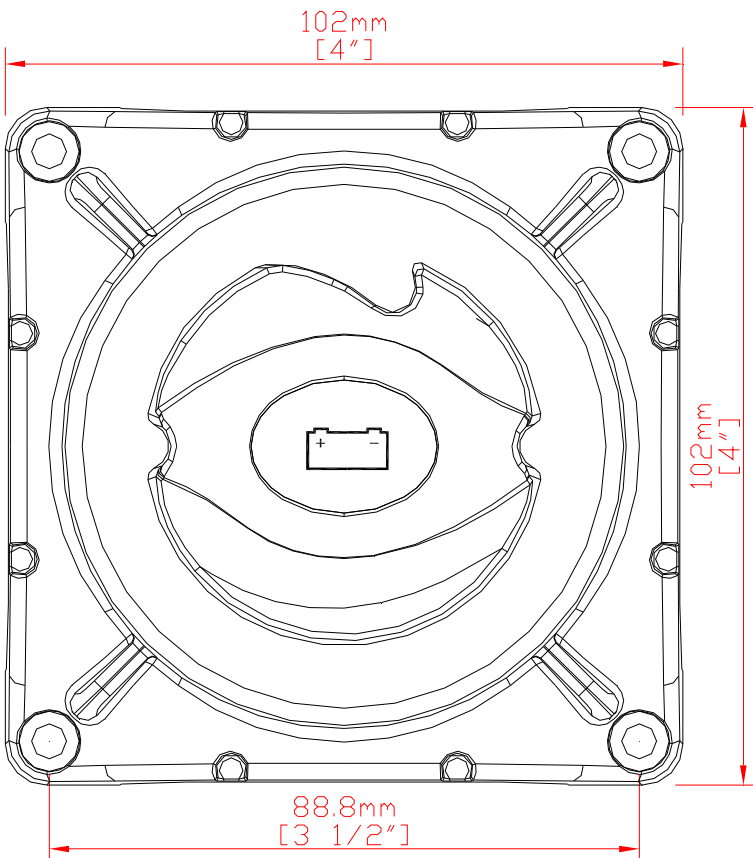
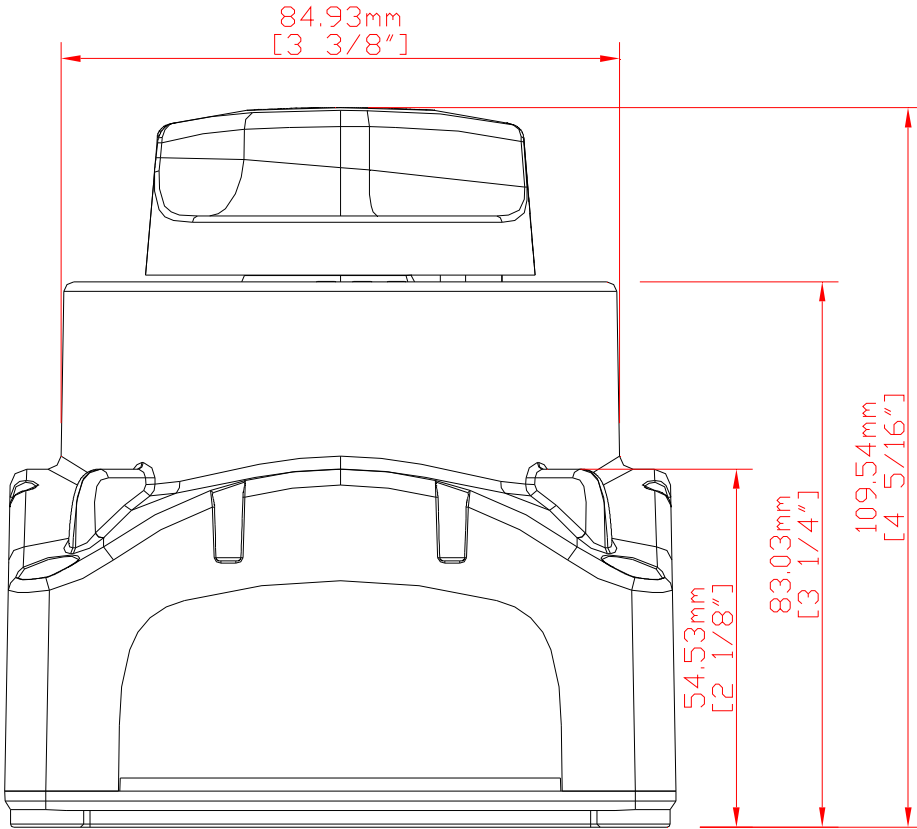
Emergency parallel control is achieved by using a remotely mounted momentary switch, such as the BEP #80-724-0007-00 unit (pictured at left), which also features an LED to show the battery switch status. When operated, the remote switch engages the 720-MDO-EP contacts, paralleling the batteries for a 10 minute period, for example to get an engine started following a flat start battery. Alternatively, the battery switch can be manually over-ridden to either “Manual On”, or “Manual Off” modes.

SPECIFICATIONS:

- **Continuous rating:** 500 Amps DC -minimum 2x95mm² (2x 3/0) cables
- **Intermittent rating:** 700 Amps DC -minimum 2x95mm² (2x 3/0) cables
- **Cranking rating:** 2500 Amps DC -minimum 2x95mm² (2x 3/0) cables
- **Maximum Voltage:** 32 Volts DC (12V or 24V systems)
- **Voltage Note:** Both battery banks must be the same voltage, either 12V or 24V
- **Operating Voltage:** 8 to 32.0 Volts DC
- **Operation:** Manual On/Off, Auto On/Off
- **Mounting:** Recessed or surface
- **Ignition protected:** Meets UL 1107 standards
- **IP Rating:** IP65
- **Stud Size:** 2 x 12mm (1/2”) – See Installation section for torques
- **Materials:** Tinned copper conductors/studs, stainless steel nuts, high temperature fibre reinforced plastics.
- **Power draw:** Off/Auto Off: 5mA @12V, 5.5mA @24V
Auto On/On: 8.0mA @12V, 12.0mA @24V
- **Emergency Parallel:** Remote switch activates parallel for 10 minute period.
Pressing remote switch for 6 seconds, deactivates parallel function

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DIMENSIONS:



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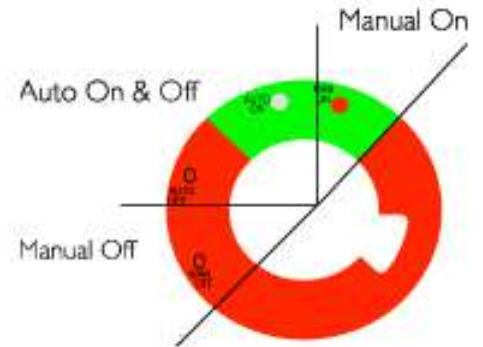
Emergency Parallel Switch

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GENERAL OPERATION:

Note that the knob must be firmly depressed prior to manual rotation, in order to disengage the motor drive. Failure to do this could damage the motor drive.

The battery switch, (720-MDO-EP) has two modes of operation, Auto and Manual. There is an LED located on both the battery switch and the optional remote key switch, indicating battery switch status.



AUTO OPERATION:

The switch moves between the “**Auto Off**” and “**Auto On**” positions for a 10 minute period following activation of the remote switch. While the battery switch is engaged in its 10 minute cycle, it can be turned off by pressing and holding the remote activation switch for a 6 second period.

Auto operation of the Battery Switch is not possible whilst in manual mode. Knob must be returned to “**Auto Off**” before remote activation can occur.

Auto Mode LED Indications:

LED Off: Battery switch is Off

LED On: Battery switch is On

MANUAL OPERATION:

The automatic operation of the 720-MDO 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 LED is illuminated. And the “**Man On**” symbol is visible.

REMOVAL OF SWITCH KNOB:

The switch knob is removable for security or maintenance reasons.

Place switch in “**Man Off**” position, then press and rotate the knob anticlockwise to remove. Note that when the knob is removed, remote activation of the battery switch is not possible.

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INSTALLATION:

Battery cables must be correctly selected for the maximum loads expected.

Cables must be a minimum of 1x 95mm² (3/0) to achieve 350 amps continuous.

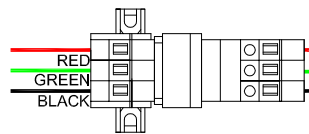
Cables must be a minimum of 2x 95mm² (2x 3/0) to achieve 500 amps continuous.

Ensure nuts on studs are correctly tightened. **Recommended torque is 18 Nm (13.3 lbf)**. Maximum torque 25 Nm (18.5 lbf).

Any momentary on/off remote switch can be used to activate the 720-MDO-EP.

Wires For Connection:

- | | |
|--------------|----------------------|
| Red | • Optional LED Wire |
| Green | • From Remote Switch |
| Black | • Supply Negative |

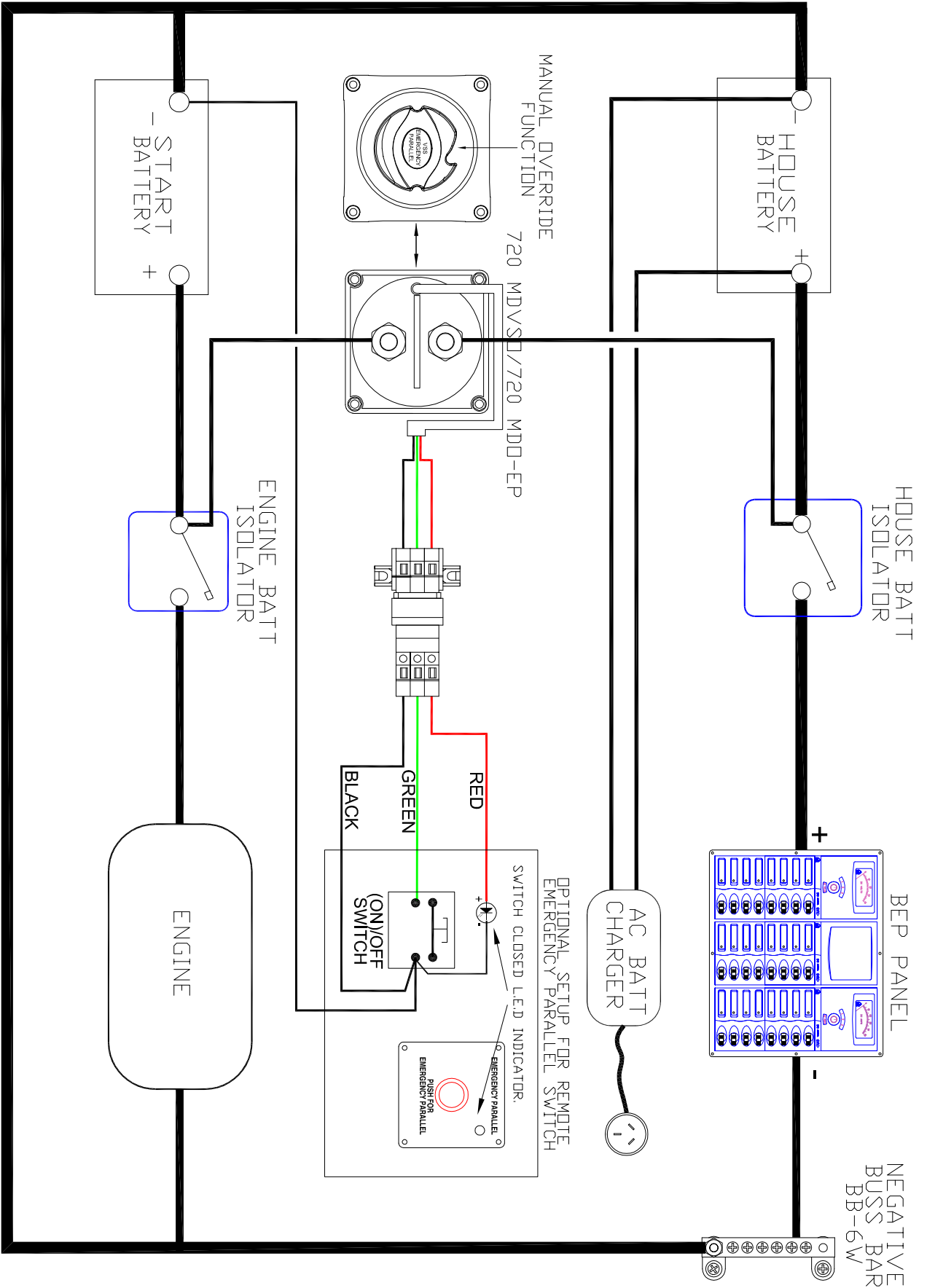


Terminated into Wago plug

- | | |
|-------------------|--|
| Input Stud | • High Current Connection From Battery 1 |
| Ouput Stud | • High Current Connection From Battery 2 |

STANDARD INSTALLATION DRAWING:

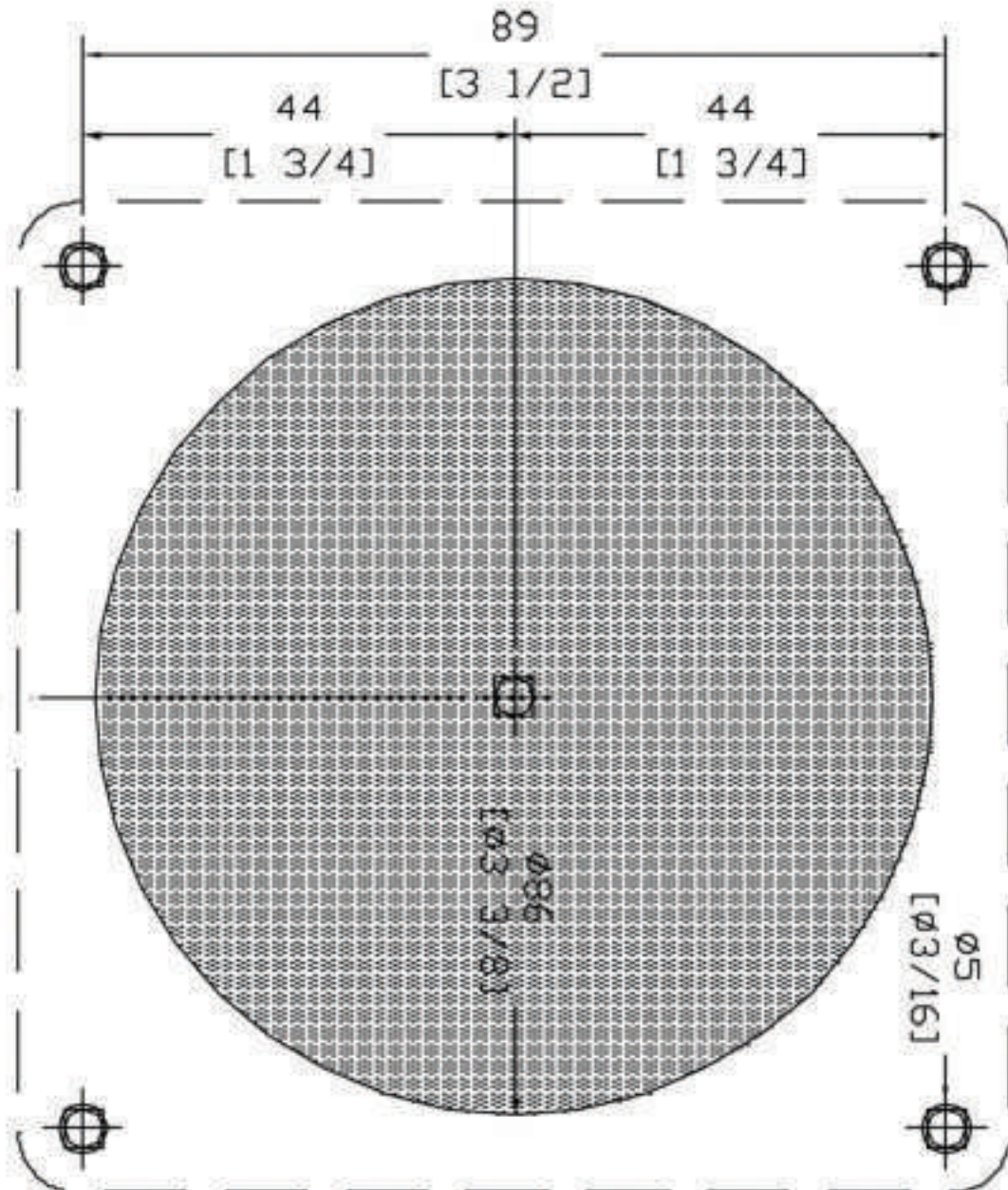
(Provided as a guide for installation of the 720-MDVSO and 720-MD-EP only, not a complete system design)



IT IS IMPERATIVE THAT THE NEGATIVE (BLACK) FOR THE MDO-EP/MDVSO IS TAKEN FROM THE SAME BATTERY THAT IT IS ISOLATING. FAILURE TO DO THIS WILL CAUSE THE UNIT TO WORK ERRATICALLY. ONLY ONE NEGATIVE MUST BE SUPPLIED TO EACH UNIT FOR CORRECT OPERATION.

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CUT OUT MEASUREMENTS (NOT TO SCALE)



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