

CONTROL PANEL - ADVANCED BATTERY BACKUP SYSTEMS
Description

The MacLennan Control Panel is a class-leading pump control panel with many unique features, which has been designed to provide the ultimate in pump operation and diagnostics. The panel features interfaces for use with MacLennan battery back-up and telemetry systems as well as connections to whole house alarm and monitoring systems. The Control Panel PCB is split with two separate circuits, ensuring that pumping will continue even if one of the control circuits should fail. This effectively means that the MacLennan Control Panel is two control panels within one case, offering unrivalled redundancy.

Self-diagnostic programs test the pumps on a weekly basis to ensure correct pump performance, with the appointed service engineer automatically informed of any detected problem with either of the pumps if the MacLennan Dialer telemetry system is installed.

The MacLennan Control Panel will operate a maximum of two 750W 230V AC pumps. The panel is supplied with a vertical water level float switch and high water alarm float switch. The panel is designed to be used with an optional MacLennan Victron Battery Back-Up System, sized to suit the pumps and installed with sufficient battery power to ensure continued pumping during power outages.

Panel supplied with dialler fitted

When the Control Panel and the Dialer are purchased together, the Panel is supplied with the Dialer already securely mounted within the Panel. All power and trigger wiring is pre-connected and the Dialer is already programmed to receive the trigger information from the Control Panel.

The programmed triggers from the Panel to the Dialer allow for the Dialer to give accurate information on a number of alarm occurrences within the Panel:

1. Water level high
2. Pump requires attention
3. Pump mains failure

These warnings can be sent via text or voice (or both text and voice) to up to eight different land-line or mobile telephone numbers.

Battery Backup

The Control Panel has the ability to receive two totally independent power supplies; one from the mains, and one from a correctly sized Victron Battery Back-Up System. The Power Converter should be sized as follows:

MultiPlus 12/1200/50 -

- 2 x MacLennan NP400 pumps with the Panel set to not have two pumps pumping at the same time. Duty assist disabled

MultiPlus 12/3000/120 -

- 2 x MacLennan 400W pumps with the Panel set to allow both pumps pumping at the same time. Duty assist enabled
- 2 x MacLennan 750W pumps with the Panel set to not have two pumps pumping at the same time. Duty assist disabled
- 2 x MacLennan 750W pumps with the Panel set to allow both pumps pumping at the same time. Duty assist enabled
- Battery capacity of 400A/H or greater is required

Quattro 12/3000/120 -

- The Quattro 12/3000/120 is sold together with a 6 kVA remote start generator. All MacLennan Pumps up to 750W can be used with this



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TECHNICAL DATA		
Features	Result	Units
Width	290.0	mm
Height	240.0	mm
Depth	94.0 or 17.0 if recessed into wall	mm
Weight	3.94	kg
Power supply	230 (+ Battery Back-Up Option)	V
Sounder volume (dB)	94	(at 1000mm)v
Switch Type	Vertical (Pumps) & Reed (Alarm)	

Key Benefits

- Automatic alternate duty cycle
- Two independent power supply inputs - One for grid mains and the other for a battery-backed power supply via a MacLennan Victron Battery Back-Up System
- Alarm on power failure - Panel will alarm in the event of mains failure
- Automatic electrical current monitoring for each pump
- Automatic pump duty assist - If one pump cannot cope with the volume of water entering the sump, the second pump will auto-start to increase the pumping capability
- As well as the Panel's audible alarm, an alarm output is sent to trigger the optional Dialer or home alarm at the time of a pump failure
- Automatic main float checking - If the main float fails or becomes disconnected, the alarm float automatically takes over as the level control float
- Automatic alarm float checking - An alarm checking signal is continually monitored to confirm the alarm float cables have been fitted correctly, not beentampered with or have been disconnected
- Each pump has it's own totally separate electronic circuit - This allows for one pump to still operate if a fault develops in the pump that could damage the Panel electronics. An alarm output is sent to trigger the optional Dialer in the event of a controller failure
- Automatic testing of each pump every 7 days - Tests ensure the pumps operate each week and will report any problems detected during the 3 second test with an alarm. Each control circuit has its own independent timer to ensure that each pump is tested at different times
- Alarm sounder options - Dip-switches on the sounder allow for programming of up to 32 different alarm sounds with a fully adjustable volume control also included
- Each pump is controlled by a zero-voltage solid state triac - The triac device is controlled by very fast switching electronics that can detect the change to 50Hz cycle to initiate switching at zero voltage. Unlike mechanical relays or contactors, there are no moving parts to wear out or generate arcing dust or welding of contacts. This gives the Control Panel a life duty in the millions of pumping operations unlike a mechanical relay that can be as low as 100,000 cycles
- The Panel monitors the power supply and will alarm if the incoming grid mains voltage fails
- The Panel monitors the power supply and will alarm if the current to each pump is too high or too low
- The Panel automatically checks that the correct power is being used by each pump. If the pump is disconnected or a pump fuse has blown or they are using too much power, the alarm will sound
- Engineer option to mute all sounds other than high water alarm - This can be set by the engineer after a full Panel reset
- Each pump circuit has it's own LCD display with a built in flash memory - This display will:
 1. Display & store the pump cycles and hours run in an independent flash memory chip for each pump
 2. Display any alarms with the description of the alarm, water level high, pump fault, high current, mains failure and sounder off
 3. Display the pump that is running, the current of the pump and the back-up battery voltage, allowing the engineer to monitor pump efficiency and battery condition
 4. Display the voltage of the converter battery in both grid mains and converter-in-use modes
 5. Display if the Panel has had the alarm sounder muted by the user
 6. Display has an engineer memory reset for resetting all timers and counters
 7. Display has a 'service due' setting to inform the user that a service is due on the system (this function can be selected by the engineer)

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Key Benefits continued

- All float switches are 12VDC (low-voltage) - Via two separate isolation transformers
- Each pump has a manual override button and a reset button - The pump button can be pressed at any time to operate the pump and the reset button to reset the display after an alarm (will not reset if pumping)
- Display memory resetting
- Engineer reset of counters and timers
- Sounder mute - If the sounder is beeping to warn of mains fail or pump fault you can mute the sounder by pressing each mute / reset button twice. To remind the user of a muted fault the mute function will cancel after 12 hours
- The MacLennanControl Panel is designed to be used with all or a selection of the following MacLennanpumping options:
 - A. A choice of MacLennanmanual pumps of 400w and 750w
 - B. MacLennanVictron Inverter Battery Back-Up Systems (1200w or 3000w) to give continuation of pumping via the Panel during power outage
 - C. MacLennan Dialer that will alert up to 8 different land or mobile phones with either text or voice confirmation of the sounding of the alarm
 - D. High Water Level Alarm as a remote alarm in another location (requires twin core cable connection)
 - E. Whole house management system (supplied by others). Home automation relays are mounted on the PCB to allow Panel warnings to operate other systems. The relays are contacts volt free. The relays operate for 5 seconds on pump fault, water high or mains fail. Note, mains fail is NC, the others are NO
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