Gas Safety Products

Merlin 500S+

AMERICAN GAS SAFETY

Installation, operating and maintenance

10/11/2016

RoHS Compliant

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1 General information

The Merlin 500S+ is a two zone isolation panel with two outputs: UTILITY 1 & UTILITY 2.

The 500S+ is designed to provide an effective way of isolating gas, water, electricity, oil etc. by means of a key switch on the panel or by the operation of the emergency shut off button.

The 500S+ can be integrated with a BMS, fire alarm and remote emergency shut-off buttons.

It is recommended that the user reads this guide before using the system. Please do NOT attempt to operate the unit until the contents of this document have been read and are thoroughly understood.

2 Installation

2.1 **Panel Mounting.** The control panel is designed for surface mounting using 4 mounting screws. Removing the cover on the panel gives access to the circuit board.

2.2 **Mains Supply.** A 100-240VAC electrical supply should be supplied to the panel. This should be externally fused at 3 Amps using a fused spur and should be connected to the terminals marked ”LNE Power”

2.3 **Utility 1.** The UTILITY should be powered using the terminals on the Merlin 500S+ marked “LNE UTILITY 1”.

2.4 **Utility 2.** The UTILITY should be powered using the terminals on the Merlin 500S+ marked “LNE UTILITY 2”.

2.5 **Remote emergency shut off buttons.** The terminal for remote emergency shut-off buttons is detailed on the circuit board as “EM REMOTE”. These connections are linked out as a factory setting. Remote emergency shut-off buttons should be volt free and wired to the Merlin 500S+ using two-core cable.

2.6 **Fire Alarm.** The terminal for fire alarms is detailed on the circuit board as “FIRE PANEL”. These connections are linked out as a factory setting. Fire alarms should be volt free and wired to the Merlin 500S+ using two-core cable.

2.7 **BMS Connections.** Terminal connections are available on the circuit board for connections to Building Management systems etc. Detailed on the circuit board as “BMS OUT N/O, COM and N/C” these are volt free connections.

2.8 **Internal Buzzer.** Operates at 65dB measured 30cm from closed panel.

Note: all low voltage connections should be made using a screened cable. To avoid electrical interference this should not be in the same conduit as mains cable as per the low voltage directive.

3 Operation Instructions

3.1 How to turn the system on and off

1. Turn the UTILITY 1 / 2 key switch to the ON position, the relevant “Utility” LED located on front panel will illuminate green.
2. To turn UTILITY 1 / 2 off, turn the relevant UTILITY key switch to the OFF position.

3.2 Explanation of LED status

3.2.1 Power LED

When the system is connected to the mains supply, the Power LED will illuminate. When no power is present, this LED will not light up.

RED = OK

OFF = No power to 500S+ or the fuse may not be intact.

3.2.2 Utility 1 LED

When the UTILITY 1 key switch is in the OFF position or an emergency shut off button has been pressed, the UTILITY 1 LED will be OFF.

GREEN = Utility 1 ON

OFF = Utility 1 OFF

3.2.3 Utility 2 LED

When the UTILITY 2 key switch is in the OFF position or an emergency shut off button has been pressed, the UTILITY 2 LED will be OFF.

GREEN = Utility 2 ON

OFF = Utility 2 OFF

3.2.4 EM Stop/ Fire Alarm LED

If an emergency shut off button (either remote or on the panel) is pressed or the fire alarm panel has been activated, the LED will illuminate AMBER and the UTILITY 1 & 2 will be turned off. The EM Stop button must be re-set before restarting the system.

OFF = OK

AMBER = EM Stop button pressed

3.3 Using the emergency shut off

The Emergency shut off button is located on the front of the panel. There is also a facility for remote shut off buttons to be wired in series.

The Emergency shut off button(s) will cut off the UTILITY supply when activated.

To reinstate the system, the Emergency shut off button(s) will need to be reset and the panel restarted.

3.4 BMS integration

The Merlin 500S+ can be integrated with a BMS to make or break a circuit on UTILITY 1 & 2 on/off. This will tell the BMS whether or not 100-240V is being sent to the UTILITY 1 & 2.

There is a dip-switch located on the inside facia of the Merlin 500S+ labelled ‘BMS SEL’. This is factory set in the ‘off’ position which signals the BMS on UTILITY 1 & 2 on/off. When switched to the ‘on’ position, the 500S+ will only signal the BMS on a fault, i.e. UTILITY 1, EM Stop pressed, etc.

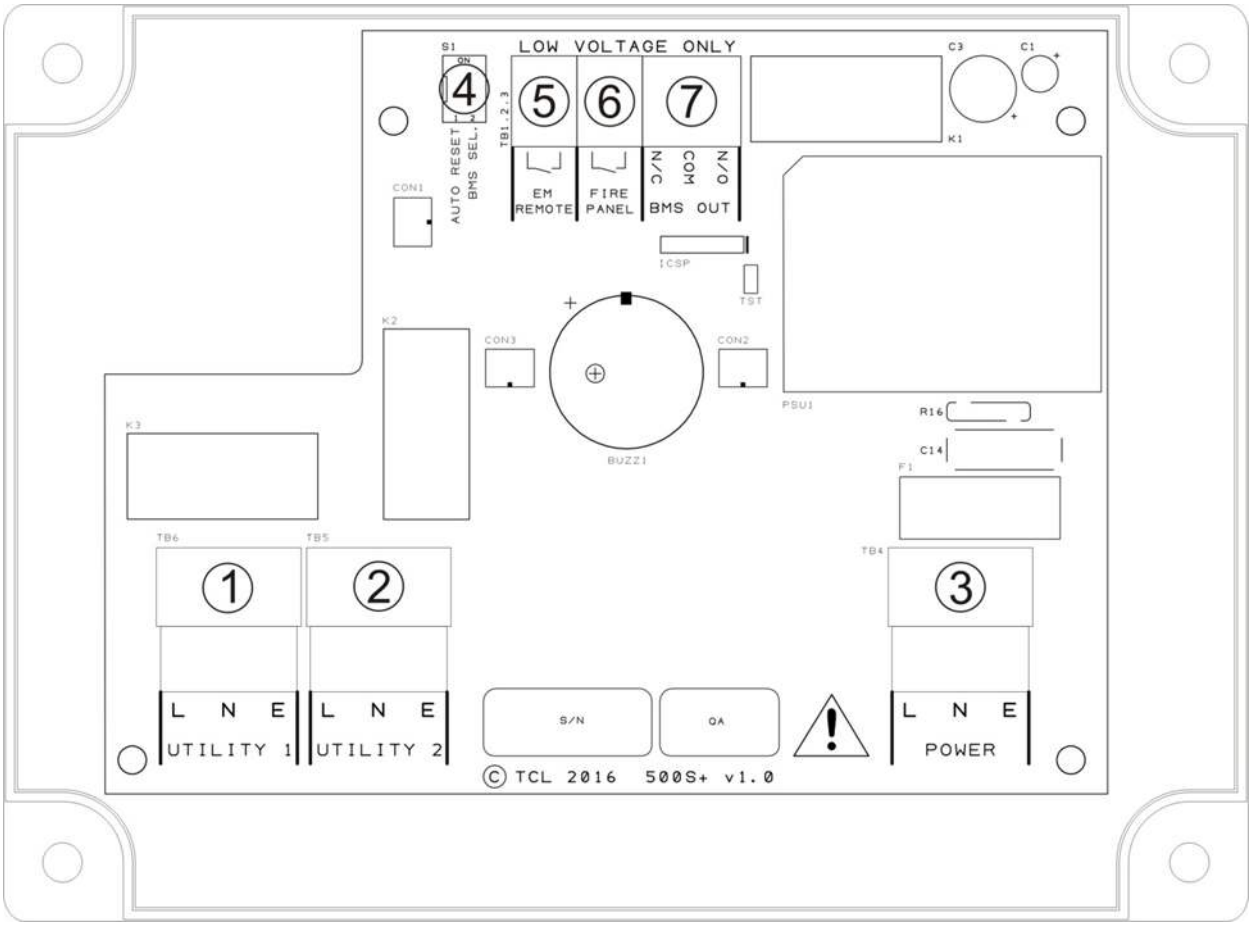
3.5 Auto reset

The Merlin 500S+ has a built-in auto reset feature. There is a dip-switch located on the PCB of the Merlin 500S+ labelled “Auto Reset”. This is factory set in the ‘off’ position. When the power is restored after the power cut, the panel has to be restarted manually. On installation, this can be switched to the ‘on’ position if required. This will instruct the system to restart automatically when power is restored following a power cut.

3.6 Fire Alarm Integration

The Merlin 500S+ can be integrated with a fire alarm to close the UTILITY 1 & 2 supply automatically in the event of a fire.

500S+ Wiring Diagram



1. UTILITY 1 Power Output, 100-240VAC, 50-60Hz.
2. UTILITY 2 Power Output, 100-240VAC, 50-60Hz.
3. Mains Input 100-240VAC, 50-60HZ.
4. Auto Reset & BMS Selection
5. Remote EM Stop buttons (purchased separately). **VOLT FREE INPUT**
6. Fire panel (Supplied by others). **VOLT FREE INPUT**
7. BMS output contacts. Normally Closed, Common and Normally Open

Please note, Mains wires and low voltage wires should not be run in the same conduit as per the **LOW VOLTAGE DIRECTIVE**

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