



OVERVIEW

When using Mercury Security controller boards, suitable power sources and enclosures must be found to complete the system. This application note covers usage of the LSP Unified Power Mercury Power Systems with the LP/EP and MR series of Mercury Security controller boards.

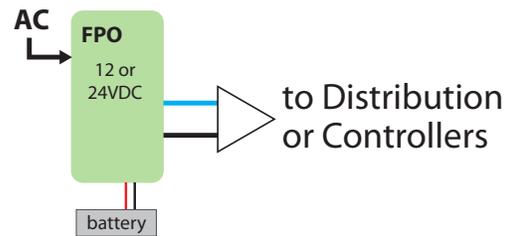


POWER SUPPLY

When determining the proper FPO power supply there are three options:

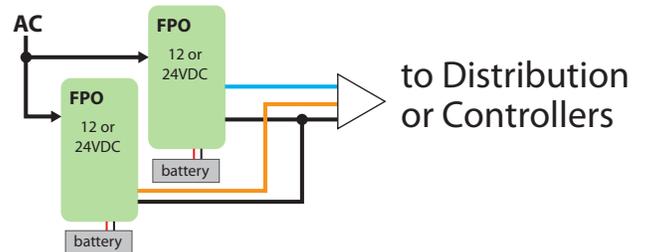
Single FPO Power Supply

In this configuration, a single FPO power supply is used to provide all power to the system. This option can be used for systems where the controller boards, locks, readers, and other devices can all accept the same voltage. The FPO power supply is set for 12VDC or 24VDC output as necessary.



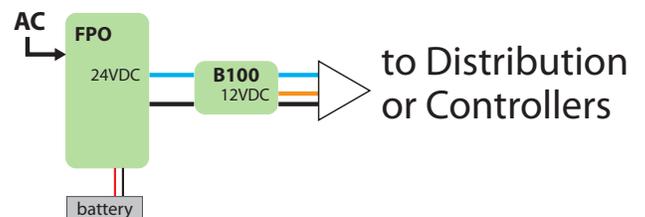
Dual FPO Power Supply

In this configuration, two FPO power supplies are used to provide two separate power sources. Each FPO may be independently set for 12VDC or 24VDC for dual voltage applications, or single voltage applications where separate power supplies are desired for lock and controller power. **Each FPO** needs a separate battery set, if batteries are required.



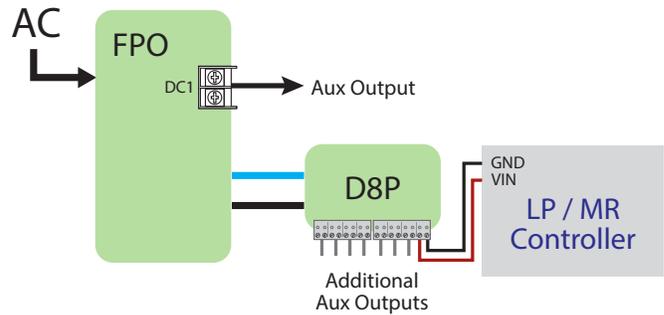
FPO Power Supply with B100 Secondary Power

This configuration uses an FPO power supply to supply 24VDC and a B100 secondary power supply to provide 12VDC. The B100 secondary power supply is powered from the FPO power supply, allowing battery backup of both voltages with a single 24V battery set on the FPO power supply.



Controller and Auxiliary Power Outputs

For small single or two door systems, power may be taken directly from the FPO's DC1 output or B100's DC Output terminals. For multiple distributed outputs, the addition of one or more D8 or D8P boards provides additional fused or class 2 power limited outputs. Unused F8 or C4/C8 outputs may also be used as additional Aux power outputs when set for a constant output.

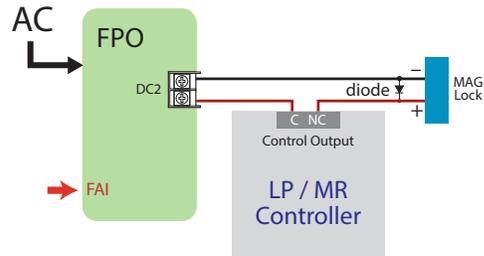


Lock Power Outputs

There are several options for lock outputs in an MCLASS system:

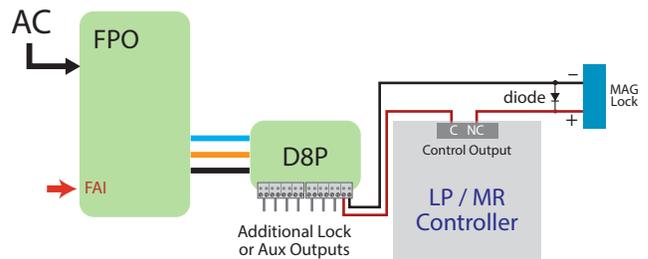
FPO DC2 Output

For single or 2 door systems, power may be taken directly from the FPO power supply's DC1 and DC2 outputs for control by the Mercury Controller's lock relay. The DC2 output may be controlled by the FAI input if desired, for unlocking of egress doors in a fire alarm situation.



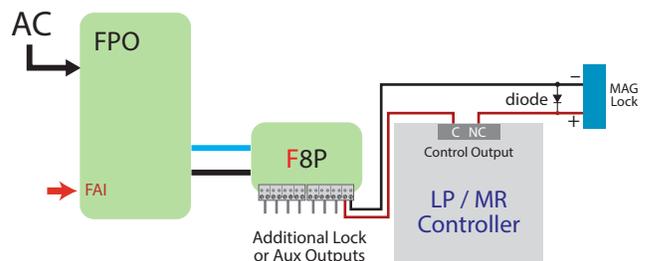
D8 Board

D8 outputs may be used for supplying lock power when the lock current is being switched directly by the Mercury Controller's lock relay. In single power supply systems, the B2 input of the D8 may be connected to the FPO's DC2 output for FAI control of any output which has its jumper in position 2. In dual power supply systems, each output is selectable for either voltage.



F8 Board

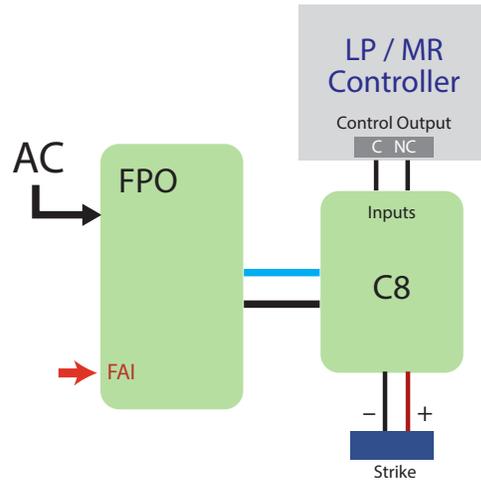
F8 outputs may be used for supplying lock power when the lock current is being switched directly by the Mercury Controller's lock relay. Each output of the F8 is individually selectable for enable on FAI, disable on FAI, or a constant output. In dual power supply systems, each output is also selectable for either voltage.



Lock Power Outputs - continued

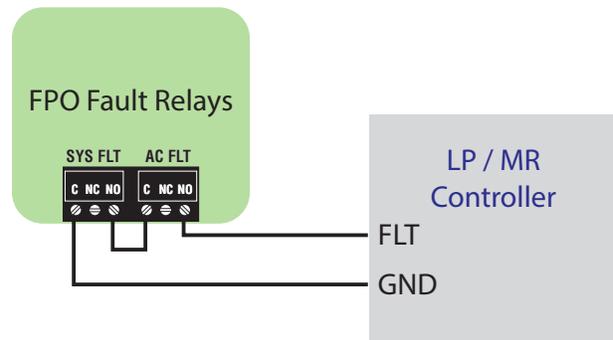
C4 / C8 / M8 Boards

Using the C4, C8, or M8 boards with Mercury Controllers allows the controller's output relays to only switch the low-current input terminals of the C4/C8/M8 with the higher lock current being controlled by the C4/C8/M8's on-board relay. This protects the relays in the more costly Mercury Controller from wear and potential damage if a problem arises, placing this wear instead on the lower-cost C4/C8/M8 board's relay. The C4/C8/M8 also allows selection by zone for FAI or either voltage in a dual power supply system. Inputs and outputs are fully configurable for fail-safe or fail-secure.



Power Supply Fault Output Monitoring

Most of the Mercury controllers have an input specifically for monitoring power supply fault inputs. These inputs are designed to accept a closure during normal conditions which opens during a fault condition. Refer to the instructions for the Mercury Controller being used to determine if it has a dedicated Power Supply Fault Input and for the location of the input.



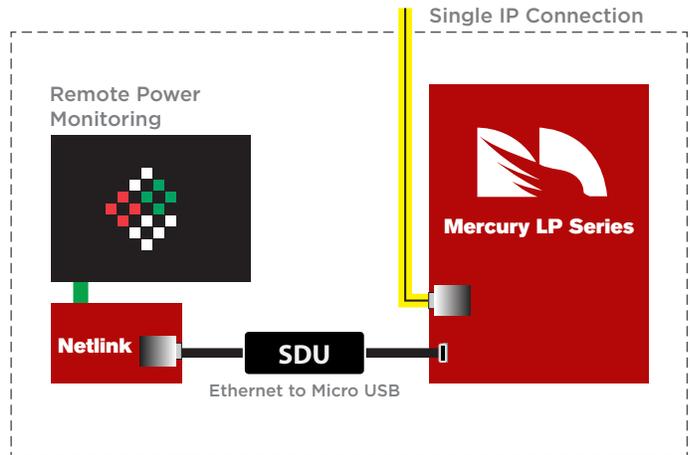
Enclosure Tamper Switch Monitoring

Most Mercury controllers have a dedicated tamper switch input which accepts a closure under normal conditions which opens when the enclosure is opened. Refer to the instructions for the Mercury Controller being used to determine if it has a dedicated tamper switch input and for the location of the input.



Network Connections in Managed Power Systems

If the power system contains a NetLink module for power management, the NetLink's Ethernet connection can be connected to the LP controller's USB port, using the OneDrop SDU cable. This allows a single network drop to provide communication to both the Mercury controller and the NetLink. See the SDU Manual for more information.



Note - Many Mercury resellers have integrated the NetLink into their GUI. See the NetLink Integrations page on the LSP website for the current list or contact your Mercury reseller for more information.

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