

**OVERVIEW**

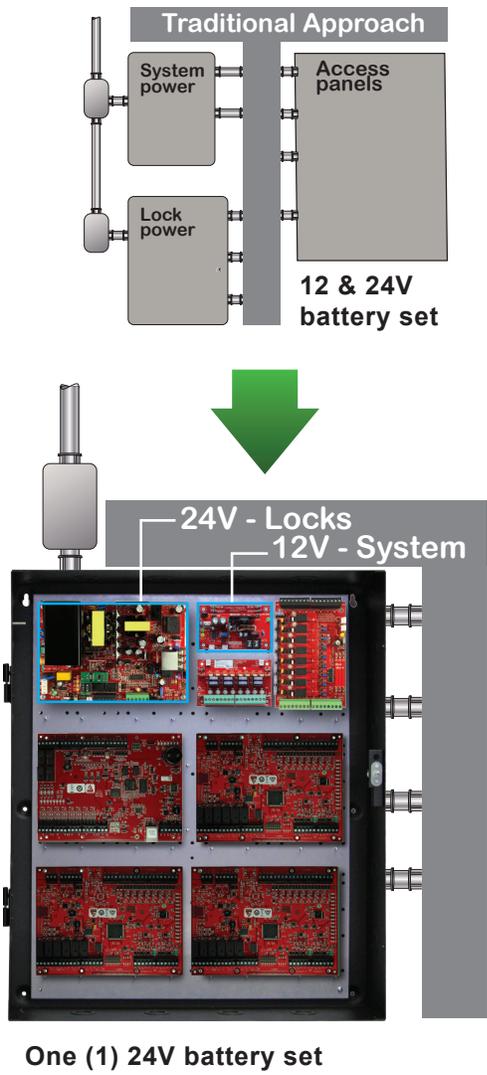
A common power application in the security industry is providing both 12 and 24VDC within a single system.

Traditionally two independent power enclosures have been used for this purpose, which, although a working solution, is not economical in cost, space or reliability.

An excellent solution to this application is the combination of a LifeSafety Power FPO power supply and a B100 secondary DC-DC converter.

**OPERATION**

24V DC is provided by the FPO power supply into the B100. The B100 converts the 24V to 12V, applying 12V to the Buss 2 output and the field wiring terminals of the B100. 24V is provided to Buss 1 for any accessory modules that may be required.



**FLEXPOWER COST SAVINGS**

Typical equipment cost savings using an FPO/B100 combination is greater than 25-35% over traditional applications that use dual AC line connected power sources to generate the required 12V and 24V DC outputs. Additional cost savings can be had in the battery set required. Unlike dual AC line-connected 12V and 24V systems that require dual battery backup, the FPO/B100 system only requires a 24V standby battery set to back up both the 24V and 12V output voltages.

**FLEXPOWER DUAL VOLTAGE SYSTEM BENEFITS**

- 4A max output current at 12V
- Single AC connection reduces installation time and expense
- Single 24V back up battery needed for both 12V and 24V DC outputs
- High efficiency operation for greater reliability
- Small power supply form factor increases battery space inside cabinet while decreasing the required wall space
- Adding distribution modules to FPO/B100 enables per zone programming of 12V or 24V output, failsafe / failsecure or FAI over ride
- System listed to power Access Control and Security
- Field upgrades retain agency listings

**FLEXPOWER STANDARD FEATURE SET**

- ◆ **SureCharge** Microprocessor controlled battery charging
- ◆ **PowerCom** Power supply programming / monitoring software
- ◆ **VSelect** Installer selectable output voltage
- ◆ **TruWatt** Delivers twice the current at 12V than at 24V
- ◆ **FlexConnect** Pre-wired accessory board interconnects
- ◆ **Reliability+** Full fault protection / high efficiency / fiberglass pcb
- ◆ **GreenSmart** RoHS compliant, lead free, energy efficient design
- ◆ **DataLink** Network communication interface



### B100 Current Loading

As the B100 gets its power from the FPO power supply, any power drawn from the B100 subtracts from the power available from the FPO. The most accurate way to determine the draw from the FPO is to calculate the actual power draw and factor in the efficiency of the B100.

$$P_i = P_o * 1.15$$

Where:

$P_i$  = Input power of the B100

$P_o$  = Output power draw on the B100

### B100 Current Load Examples

#### Example 1

An FPO250 set for 24V is powering a B100. The B100 is set for an output of 12V and has a 3A total load connected.

$$P_o = 12V * 3A = 36W$$

$$P_i = 36W * 1.15 = 41W$$

In this example, the B100 will draw 41W from the FPO250

This leaves 208W available from the FPO250

#### Example 2

What size FPO do I need to create a dual voltage power supply providing 12V@2A and 24V@2A?

$$12V \times 2A \times 1.15 = 27 \text{ Watts}$$

$$24V \times 2A = 48 \text{ Watts}$$

$$27W + 48W = 75W$$

Use an FPO75 (75W) power supply with the B100 converter

#### Example 3

What size FPO do I need to create a dual voltage power supply providing 12V@4A and 24V@8A?

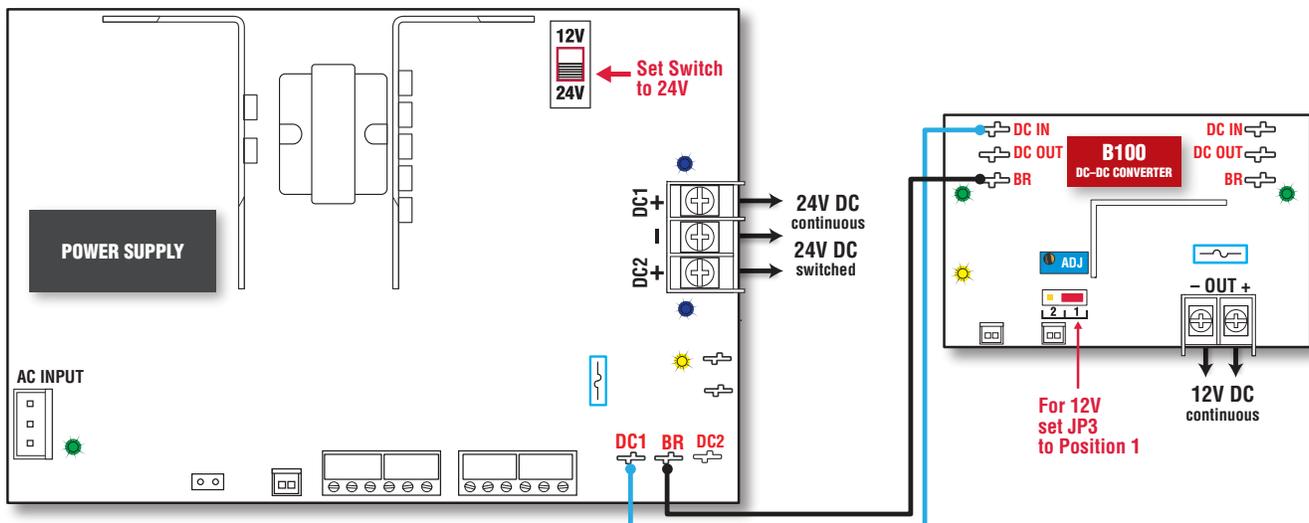
$$12V \times 4A \times 1.15 = 55 \text{ Watts}$$

$$24V \times 8A = 192 \text{ Watts}$$

$$55W + 192W = 247W$$

Use an FPO250 (250W) power supply with the B100 converter

### FPO / B100 DUAL VOLTAGE WIRING DIAGRAM



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