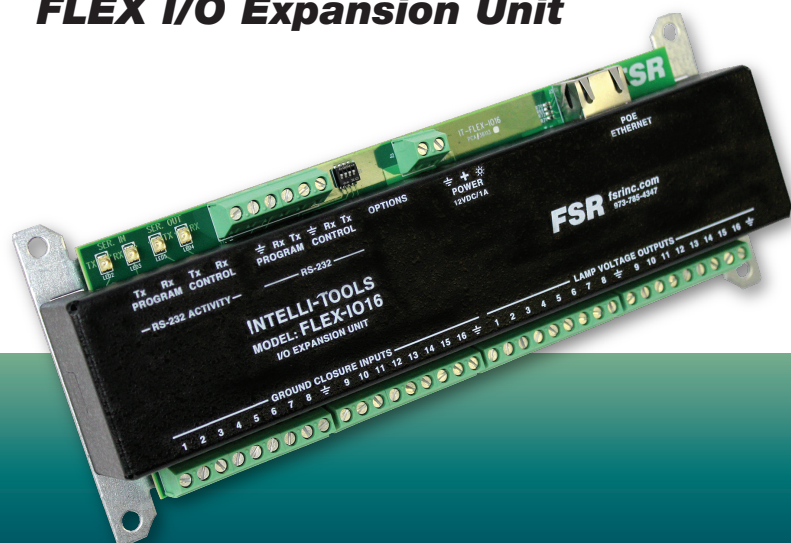


# **FLEX-IO16**

## **FLEX I/O Expansion Unit**

**FSR**  
**AV Products Group**

FLEX-IO16



### **DESCRIPTION**

The Flex-IO16 is a fully programmable control system component that provides an interface between virtually any equipment having an RS-232 or Ethernet port and an external control panel with up to 16 switches and lamps. This extremely versatile unit can be used to expand the IO capabilities of the FSR Flex-LT control products or any 3rd party control system. It can also be used to add IP connectivity to equipment that only has an RS-232 port.

Configuration of the Flex-IO16 is accomplished through the use of the Flex-IO Builder GUI. The Flex-IO builder can create, edit, debug, upload and download projects, and can also be used to verify wiring and control in installed systems. The Flex-IO builder connects to the Flex-IO16 via the second dedicated RS-232 "Program" port, or Ethernet.

Each of the 16 switch inputs can be configured to execute command strings up to 250 characters in length upon the press, hold, or release of the switch, or they can alternate between two different strings when set to alternate action mode. The 16 lamp outputs can be independently configured to turn on, off, blink or toggle state in response any of the switch input events, or they can be remotely commanded via serial or IP. The short circuit protection and automatic reset feature of the lamp outputs makes the Flex-IO16 very robust and prevents damage due to typical field wiring errors. High output drive capability allows direct control of external 12 volt relays.

The unit can be powered locally with an external IT-PS1 12 volt supply, or remotely via POE from a POE network switch or mid-span injector.

More complex control requirements can be satisfied by combining the Flex-IO16 with any of the Flex-LT control products using virtual switch commands to the Flex-LT.

The FLEX-IO16 I/O Expansion Unit can be used with the FSR HuddleVU HV-T6 and HV-T3 Table Box models to convert but-

### **DESCRIPTION**

ton presses into serial or IP commands. This allows control of various devices within a FLEX Controlled environment, while also providing LED feedback. When used in conjunction with FSR's line of T3-MJ Table Mic Boxes, you can easily connect up to 16 boxes and have LED feedback when the mute circuits are activated on a 3rd Party DSP Controller.

### **FEATURES**

- 16 switch inputs
- Accommodates momentary or maintained N.O. or N.C. switches
- 16 Lamp/Relay drive outputs with short circuit protection/auto-reset feature
- Power locally or via POE Ethernet
- Configure via Serial or IP
- Full featured GUI supports system configuration & debug
- Independent serial ports for Program and Control
- Indicators for serial/IP activity, power and status
- Fully programmable

### **APPLICATIONS**

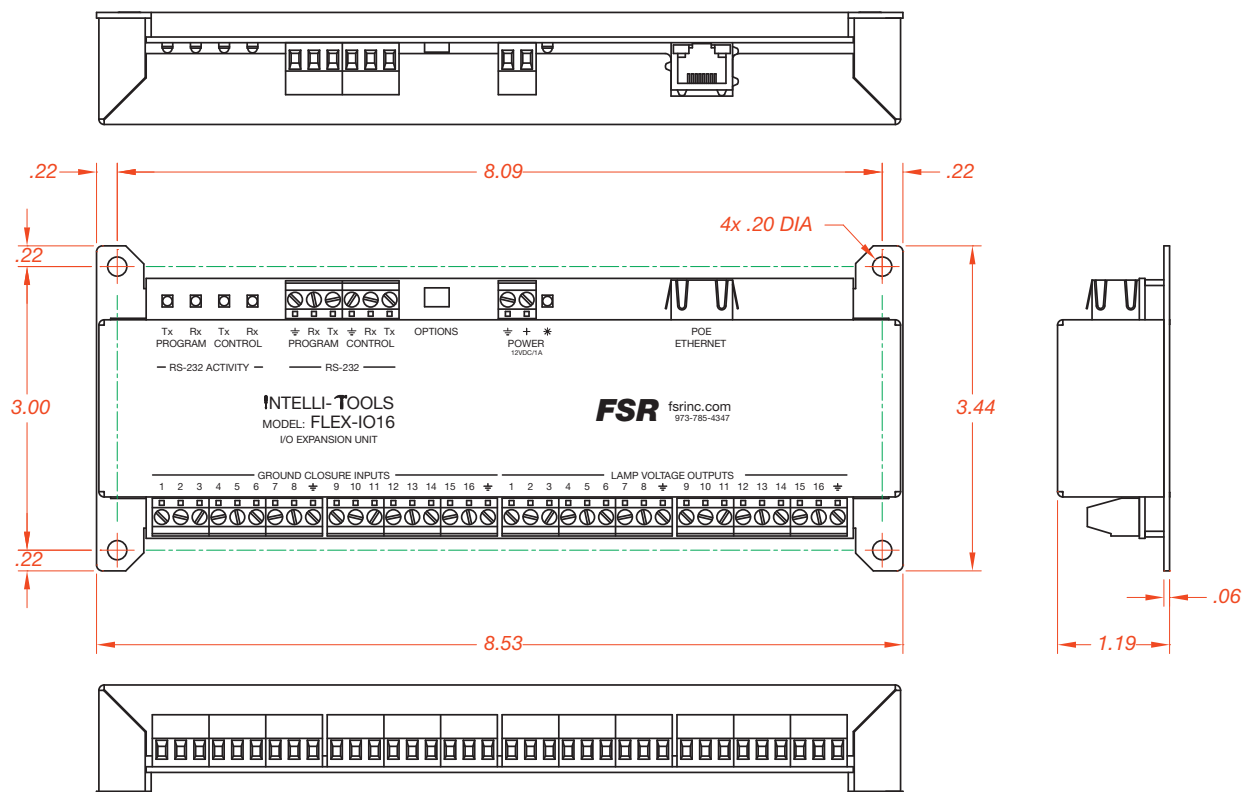
- Add IP capability to legacy RS-232 equipment
- General purpose interface between hardwired control panels and AV equipment
- I/O expansion for Flex-LT controllers
- Expansion unit for HuddleVU collaboration system
- Contact closure to RS-232 interface
- Contact closure to IP interface

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LIT1544

## DIMENSIONS



## SPECIFICATIONS

Switch inputs:	16 momentary ground closure inputs
Open Circuit voltage:	12 VDC through 4.75k (>3mA current through external switch)
Minimum closure time to ensure detection:	0.1 seconds
Maximum allowable closure time:	Unlimited*
Lamp outputs:	16 active high outputs with short circuit and thermal protection. Automatic recovery approximately 1 second after removal of short circuit.**
Output voltage when active:	10.2V typical at 10 mA load current
Maximum allowable output current for any single output:	300mA
Maximum combined current for each bank of 8 outputs:	600mA
Maximum combined current for all outputs:	800mA
RS-232 ports:	2; One for IO-16 configuration, one for external device control. Control port supports baud rates from 2400 to 115200, 5-8 data bits, 1, 1.5, 2 stop bits, odd, even, mark, space, or no parity.
Network port:	10/100 Ethernet with Auto-MDIX (no crossover required)
Power Supply input options:	12VDC at 1 Amp from IT-PS1 power supply or POE Ethernet connection (802.3af).
Power consumption:	2W idle power plus any external loading conditions.

\*Note that external switches are expected to be momentary, normally open type but normally closed or maintained switch inputs can also be accommodated in most applications.

\*\*Lamp outputs can be used to drive external relays or other devices. Note that the short circuit protection on each individual output has a trip threshold of approximately 350 mA with a response time of less than 1 uS. Highly capacitive loads or tungsten filaments will trip the protection circuit at significantly lower steady state levels. With Tungsten filaments, the maximum load is approximately 40 mA

# FSR



Manual available on the FSR website.  
Specifications are subject to change without notice.

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