E84 PI/O INTERFACE CONTROLLER
Serial-to-Parallel Controller

E84 Serial to Parallel Controller (SPC)

KLA01102

The GCI E84 Serial to Parallel Controller (E84 SPC) is an off-the-shelf solution used by 300mm equipment manufacturers to provide SEMI E84 compliant communications for their products. With its built-in Load and Unload algorithms it is the perfect E84 communications solution for process tools, stockers, load ports, FOUP buffers, smart storage shelves and simulation load ports.

The E84 SPC easily integrates with equipment controllers through a standard serial communications connection. All handshaking functions are performed automatically with error detection and reporting, requiring only a minimal amount of communications overhead with the equipment controller. Alternatively, the E84 SPC can be implemented as a stand-alone controller utilizing its placement and presence sensor inputs. The E84 SPC is mounted in an extruded aluminum enclosure.

Two Amp Mate-n-lock connectors (AMP P/N's 794617-2, 794617-8) are provided for all external wiring, including the RS232 interface (transmit, receive, and ground), six auxiliary inputs (for use with load port placement, presence and light curtain sensors), one auxiliary output, and system power.

A female DB-25 connector provides a fully compliant passive E84 PI/O interface to connect with the factory AMHS or optical transceiver device. It provides 16 optically-isolated E84 I/O signals plus three reserved optical transceiver signals: Select, Mode, and Go. LEDs are provided to indicate the state of each PI/O interface signal. The +24V signal is available to power an optical transceiver device.

An API consisting of a line-based ASCII message set provides the software interface to the host controller. The API provides an automatic mode of operation to perform the E84 Load and Unload handshakes with minimal host intervention. Manual mode allows the host controller to control and monitor individual PI/O signals.

The E84 SPC requires a single +18 to 30 VDC 200 mA power source.

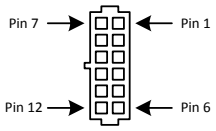
Get Control, Inc.
1530 N. Hobson St. Suite 101
Gilbert, Arizona 85233
USA

Phone: 480-539-0478
FAX: 480-539-0307
email: info@getcontrol.com
Website: www.getcontrol.com

April 2011

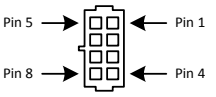
SPC Connectors

SPC Connector A



PIN	Signal Description	Signal Description	PIN
7	OUTPUT -	OUTPUT +	1
8	GND	Input 3	2
9	GND	Input 2	3
10	GND	Input 1	4
11	RX	TX	5
12	GND	+24 VDC	6

SPC Connector B

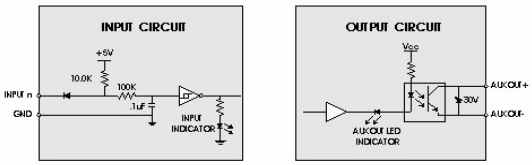


PIN	Signal Description	Signal Description	PIN
5	Input 4 +	Input 4 -	1
6	Input 5 +	Input 5 -	2
7	Input 6 +	Input 6 -	3
8	GND	+24 VDC	4

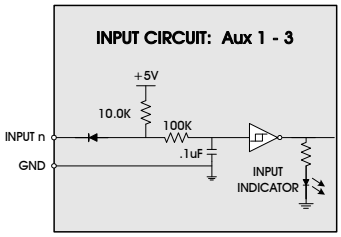
E84 I/O Port Connector

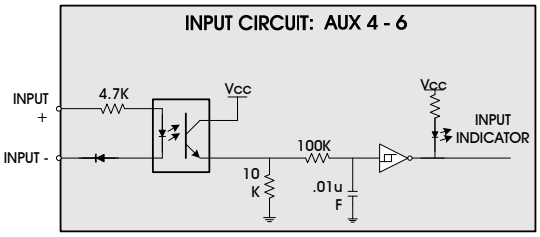
PIN	Signal	Signal	PIN
1	L_REQ	VALID	14
2	U_REQ	CS_0	15
3	VA	CS_1	16
4	READY	AM_AVBL	17
5	VS_0	TR_REQ	18
6	VS_1	BUSY	19
7	HO_AVBL	COMPT	20
8	ES	CONT	21
9	NC	NC	22
10	SELECT	+24V (Fused)	23
11	MODE	+24V COM (GND)	24
12	GO	Signal COM (Outputs)	25
13	NC	GND	Shell

E84 Interface I/O Circuit

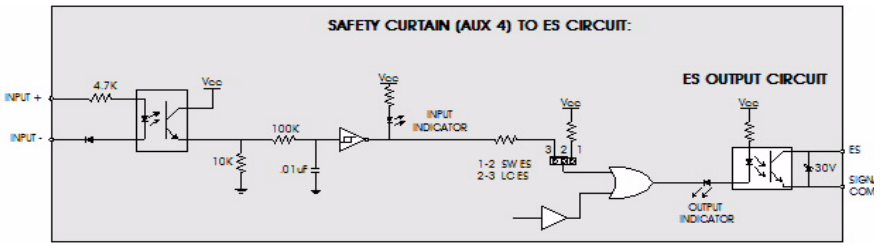


SPC Auxiliary I/O Circuit





SPC Safety Curtain Hardware Interlock Circuit



SPC Demo Application

The SPC Demo Application provides a method of exercising SPC features and aids in developing the required host software. It is a simple command line application that provides common SPC commands in a Function Key menu. All SPC command can by entered into the command prompt. The Application automatically calculates and appends the required checksum value and sends the packet to at attached SPC. Packets received from the SPC are displayed as they arrive. Communications can be echoed to a log file for additional analysis.