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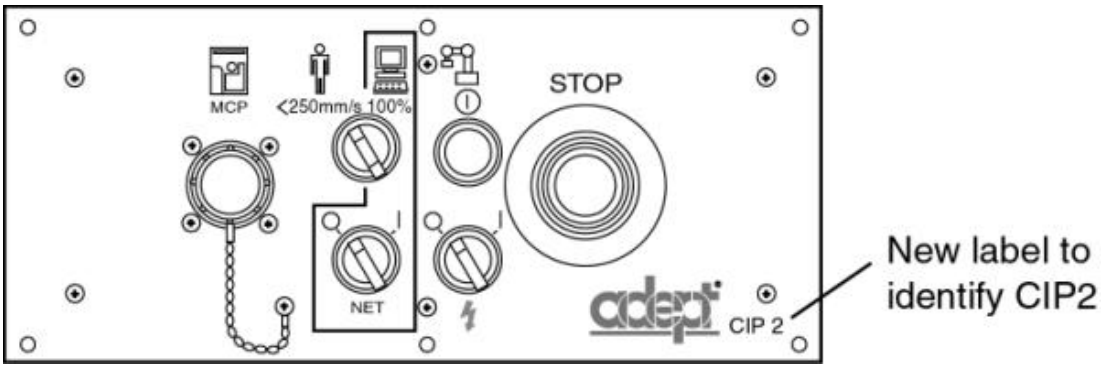
Controller Interface Panel-2
(CIP2) Addendum

Introduction

The Adept Controller Interface Panel-2 (CIP2) is a new version that has been redesigned to work with the Adept SmartModule and SmartAmp products.

This document explains the new features of the CIP2 that differ from the original CIP. All other functions of the CIP not mentioned in this document perform the same in the CIP2 as they did in the original version. For details on the original CIP, click here. Additionally, the Adept robot or controller manuals that came with your system contain complete information on all functions of the original CIP.

The CIP2 can be identified by the label on the lower right-hand side of the front panel. See the figure below for the location of the label .



CIP2 Front Panel Label

CIB (JSLV) Connector

On the CIP2, the CIB (JSLV) connector on the rear panel is used to connect to the Power Distribution Unit (PDU) in a SmartModule system. This transmits the status of the two channel emergency stop circuit to the SmartAmp. It also tells the SmartAmp if the CIP2 is in Auto or Manual Mode. Finally, it will transmit the status of the High Power On/Off Push Button Switch to the SmartAmp. There is no feedback of status to the CIP2 from the SmartAmp.

> **NOTE:** The CIP2 MUST be used for this functionality to work with a SmartAmp system. The CIP will NOT work correctly with a SmartAmp.

JSIO Connector

On the CIP2, the JSIO connector on the rear panel contains new signals for the two channel Line Estop inputs for connecting to a factory automation line E-stop or another robot E-stop system output. See the next three sections for more information on the Line E-Stop signals.

Line E-Stop Inputs

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The JSIO connector, on the CIP2 only, contains a two channel Line E-Stop input for workcell or other equipment emergency stop inputs. Generally, the User E-Stop Indication contact outputs are used to cause an emergency stop in such external equipment. Thus, if one were to wire the same equipment's outputs into the User E-Stop Input (i.e., in series with the local robot's E-Stop Push Buttons), a lock up situation can occur.

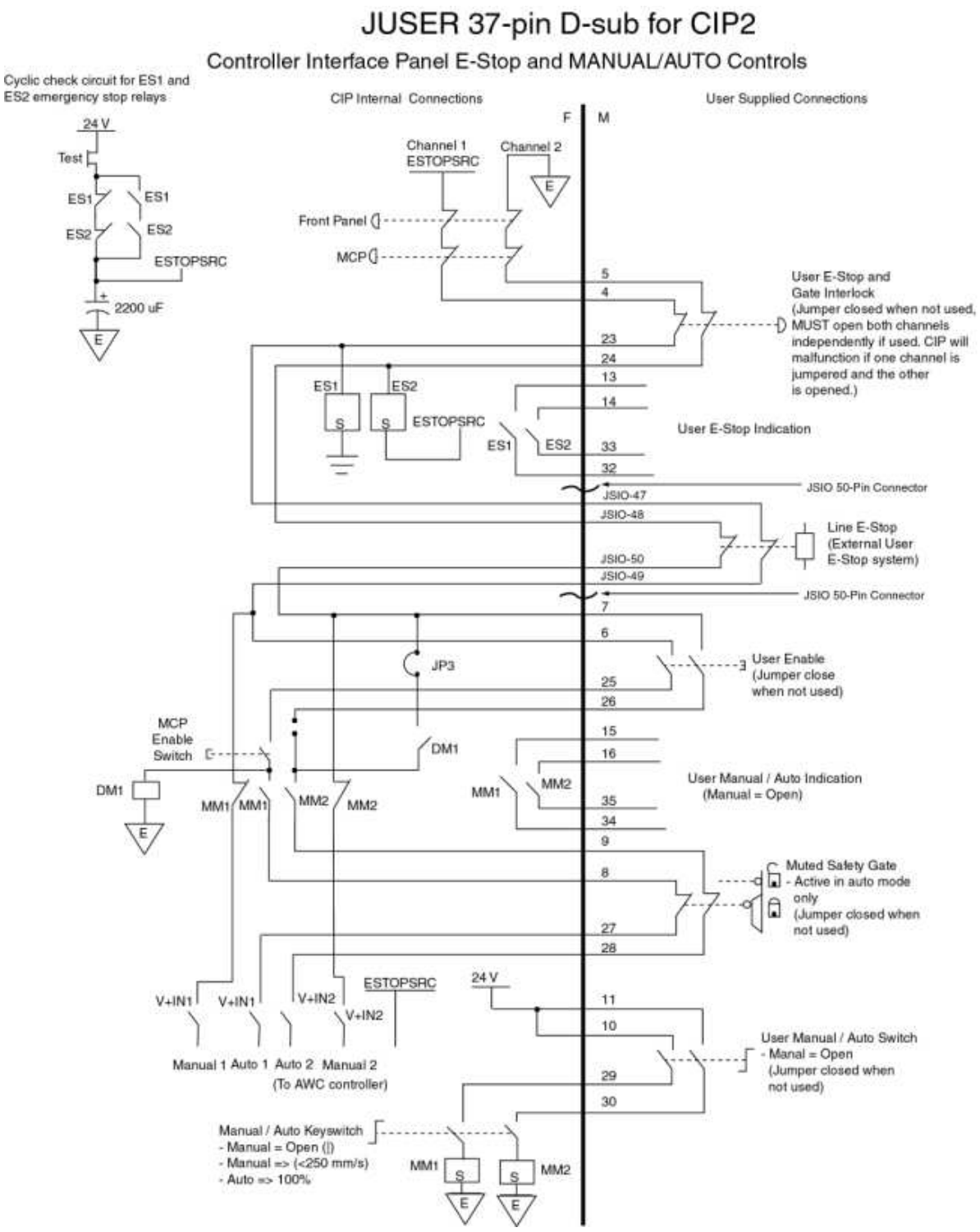
The Line E-Stop input comes into the circuit at a point where it cannot affect the User E-Stop Indication relays, (see JUSER 37-Pin Connector) and will not cause such a lock up situation. For any situation where two systems should be "cross-coupled", for example, the User E-Stop Indication of one CIP2 is to be connected to the input of another CIP2, the Line E-Stop input is the point to bring in the other CIP2's output contacts.

Do not use the Line E-Stop for such devices as local E-Stop Push Buttons since their status should be reported to the outside on the local User E-Stop Indication output contact while the Line E-Stop inputs will not.

Revised E-Stop Schematic

The following figure shows a revised version of the E-Stop schematic that includes the Line E-Stop connections on the JSIO connector.

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JUSER 37-Pin Connector

Revised JSIO Pin Assignments

The following table shows the pin assignments for the digital I/O signals on the JSIO connector on the CIP2. Note the new Line E-Stop signals on pins 47 to 50.

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CIP2 JSIO Digital I/O Connector Pin Assignments

Pin	Signal Name	Pin	Signal	Pin	Signal	Pin	Signal
1	Input 1001	2	1001 return	27	Output 0002+	28	Output 0002-
3	Input 1002	4	1002 return	29	Output 0003+	30	Output 0003-
5	Input 1003	6	1003 return	31	Output 0004+	32	Output 0004-
7	Input 1004	8	1004 return	33	Output 0005+	34	Output 0005-
9	Input 1005	10	1005 return	35	Output 0006+	36	Output 0006-
11	Input 1006	12	1006 return	37	Output 0007+	38	Output 0007-
13	Input 1007	14	1007 return	39	Output 0008+	40	Output 0008-
15	Input 1008	16	1008 return	41 [1]	Auxiliary E-Stop input+	42 [1]	External E-Stop input-
17	Input 1009	18	1009 return	43 [1]	Auxiliary E-Stop input -	44 [1]	External E-Stop input +
19	Input 1010	20	1010 return	45	Passive E-Stop output+	46	Passive E-Stop output-
21	Input 1011	22	1011 return	47 [2]	Line E-Stop input Ch 1+	48 [2]	Line E-Stop input Ch 2+
23	Input 1012	24	1012 return	49 [2]	Line E-Stop input Ch 1-	50 [2]	Line E-Stop input Ch 2-
25	Output 0001+	26	Output 0001-				

NOTES:
1. On CIP2, need to jumper Pin 41 to 43, and 42 to 44.
2. On CIP2, need to jumper Pin 47 to 49, and 48 to 50.

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Extended I/O Outputs Diagnostic LED for Short Circuit or Thermal Overload

This section is revised from the section on Extended I/O Outputs in the *Adept MV Controller User's Guide* , Rev B.

The integrated circuits that provide the output transistors for the extended digital outputs incorporate diagnostic signals that indicate when a thermal overload shutdown has occurred, most likely the result of a short circuit condition. When the diagnostic signal is active, the associated output will not conduct current continuously. The output will oscillate on and off as the IC heats up, turns off, cools down, and then turns on again. All the diagnostic signals for the extended digital outputs have been wire-or'ed together to provide a red LED indicator inside the CIP2 box. This red LED, when active, is visible through the ventilation holes in the top or bottom of the CIP2. The red LED will not oscillate on and off as the output itself does, because the diagnostics signals are filtered before reaching the LED.

Note that the LED is active only when:

1. An extended output (i.e., a SIGNAL in the range of 33 to 64) has been turned on by a V+ command.
2. An activated output has a thermal overload problem, usually due to a short in the user's wiring from the output pin to the user's ground.

Installing a CIP2 in Place of a CIP

If you are replacing a CIP in an existing Adept system with a CIP2, you should refer to the Field Upgrade document, part number 00350-00010, that is shipped with a CIP2 Field Upgrade kit. This document describes the jumper cable that may need to be used in certain situations when installing a CIP2.

Last modified on: 04/13/2007
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