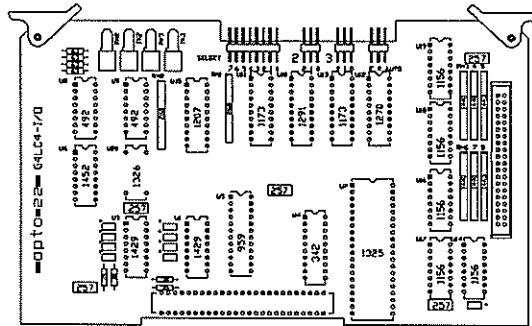


mistic® model 100 CONTROLLER

OPTO 22



DESCRIPTION

The G4LC4A I/O Card is a PC board sub-assembly for the G4LC4 Local Controller. It contains the jumpers for setting the brick address, jumpers for setting the baud rates for serial ports Com 2 and Com 3, and jumpers for setting the power up status, LED status lights. On the right hand side of the I/O card is a 40-pin male header (connector) used to connect the G4LC4 Controller to the G4 PAMUX Bus. This bus is used for communicating with the G4B5 Digital and G4B6 Analog brain boards also connected to the bus. There is a female 50-pin connector at the bottom of the I/O card used for connecting to the G4LC4C Base Board (backplane). The board has factory installed terminating resistors for the G4 PAMUX Bus.

GENERATION 4[®]

PAMUX I/O Card
for G4LC4 Local
Controller

G4LC4A

FEATURES

- ◆ Compatible With *mistic*® 100
- ◆ Microcomputer Based Controller
- ◆ High Speed Parallel G4 PAMUX Bus
- ◆ Com 2 and Com 3 Status LEDs.
- ◆ Address Selection Jumpers
- ◆ Baud Rate Selection Jumpers
- ◆ Power Up Status Selection Jumpers.
- ◆ Factory Installed Terminating Resistors for the G4 PAMUX Bus.

INSTALLATION DETAILS

Step-By-Step Installation Procedure

1. Select the address for the G4LC4 brick. Addresses are needed when several G4LC4s are being connected in a multidrop configuration from the same RS-485 serial communications line. Normally the Com 0 port on the G4LC4 is used for this purpose.
2. Install address jumpers per instructions below.
3. Install jumpers for setting the desired baud rate for Com 2. See instructions below.
4. Install jumpers for setting the desired baud rate for Com 3. See instructions below.
5. If you want to enable the unit to start running upon power up, then install the 'AUTO' jumper. See Figure 1.
6. If you want to clear (erase) all battery backed RAM upon power up, then install the 'R' jumper. See Figure 1. This is not meant to be a permanently installed jumper. It is used for trouble shooting. Normally you would not install this jumper.
7. Jumper 'E' is reserved for future use. It must not be installed.
8. Plug the G4LC4A I/O Card into the G4LC4 Base Board. Make sure that power is off.
9. Connect the 40-conductor flat ribbon cable (G4 PAMUX Bus) to the 40-pin connector at the right-hand side of the I/O Card. See Figure 1.

LOCATION DRAWING

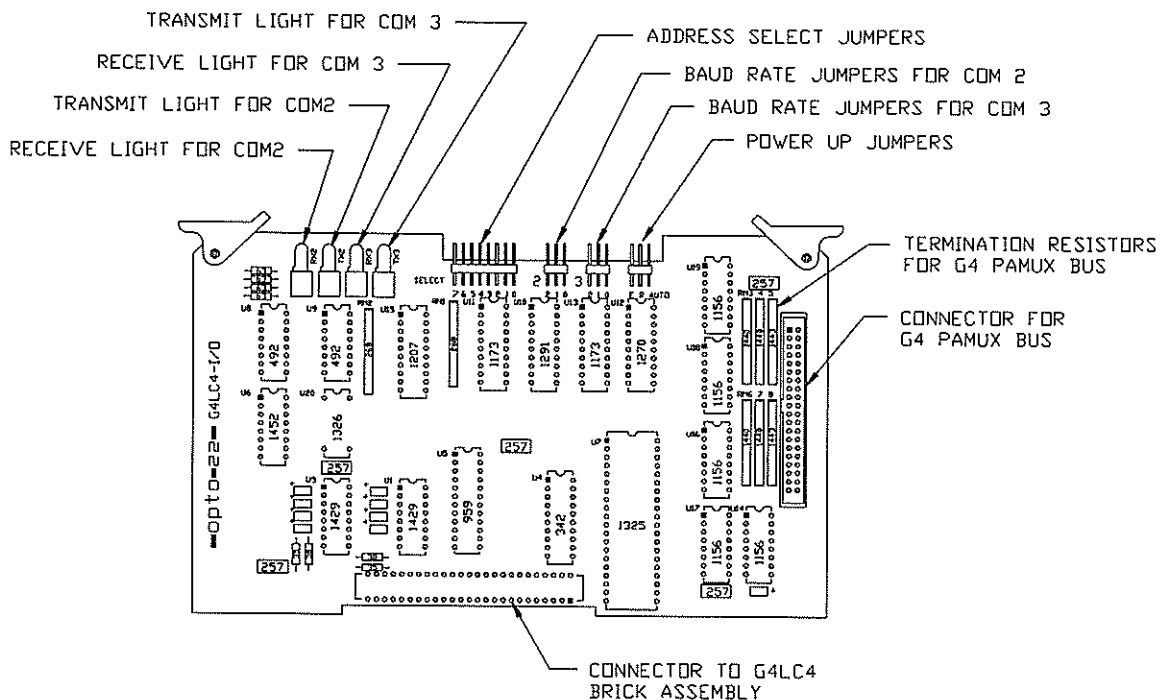


Figure 1 - G4LC4A I/O Card

STATUS LIGHTS

There are four LED status lights on the G4LC4A I/O Card. They are located at the top left of the board. They indicate the status of the communications lines. When the G4LC4 Local Controller is transmitting data on COM 2, then the TX2 LED is ON. When the controller is transmitting data on COM 3, then the TX3 LED is ON. When the host computer is transmitting data on COM 2 to all of the G4LC4 Local Controllers, then the RX2 LED is ON. When the host computer is transmitting data on COM 3 to all of the G4LC4 Local Controllers, then the RX3 LED is ON.

ADDRESS JUMPERS

The "Address" jumpers are necessary only when more than one G4LC4 is connected in a multidrop configuration on one communications link. In order to communicate to individual G4LC4 Units on such a link, each device must have a unique address. There are eight jumper positions (1 byte) labeled from 0 (LSB) to 7 (MSB) that specify an address between 00 hex and FF hex (255 decimal). A jumper installed sets that bit position to a 1, a removed jumper sets that bit position to a 0. All jumpers removed specify an address of 00 hex. All jumpers inserted specify an address of FF hex (255 decimal). The following table may be used as a guide in setting the jumpers.

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0	□□□□□□□□	32	□□□□□□□□	64	□□□□□□□□	96	□□□□□□□□	128	□□□□□□□□	160	□□□□□□□□	192	□□□□□□□□	224	□□□□□□□□
1	□□□□□□□□	33	□□□□□□□□	65	□□□□□□□□	97	□□□□□□□□	129	□□□□□□□□	161	□□□□□□□□	193	□□□□□□□□	225	□□□□□□□□
2	□□□□□□□□	34	□□□□□□□□	66	□□□□□□□□	98	□□□□□□□□	130	□□□□□□□□	162	□□□□□□□□	194	□□□□□□□□	226	□□□□□□□□
3	□□□□□□□□	35	□□□□□□□□	67	□□□□□□□□	99	□□□□□□□□	131	□□□□□□□□	163	□□□□□□□□	195	□□□□□□□□	227	□□□□□□□□
4	□□□□□□□□	36	□□□□□□□□	68	□□□□□□□□	100	□□□□□□□□	132	□□□□□□□□	164	□□□□□□□□	196	□□□□□□□□	228	□□□□□□□□
5	□□□□□□□□	37	□□□□□□□□	69	□□□□□□□□	101	□□□□□□□□	133	□□□□□□□□	165	□□□□□□□□	197	□□□□□□□□	229	□□□□□□□□
6	□□□□□□□□	38	□□□□□□□□	70	□□□□□□□□	102	□□□□□□□□	134	□□□□□□□□	166	□□□□□□□□	198	□□□□□□□□	230	□□□□□□□□
7	□□□□□□□□	39	□□□□□□□□	71	□□□□□□□□	103	□□□□□□□□	135	□□□□□□□□	167	□□□□□□□□	199	□□□□□□□□	231	□□□□□□□□
8	□□□□□□□□	40	□□□□□□□□	72	□□□□□□□□	104	□□□□□□□□	136	□□□□□□□□	168	□□□□□□□□	200	□□□□□□□□	232	□□□□□□□□
9	□□□□□□□□	41	□□□□□□□□	73	□□□□□□□□	105	□□□□□□□□	137	□□□□□□□□	169	□□□□□□□□	201	□□□□□□□□	233	□□□□□□□□
10	□□□□□□□□	42	□□□□□□□□	74	□□□□□□□□	106	□□□□□□□□	138	□□□□□□□□	170	□□□□□□□□	202	□□□□□□□□	234	□□□□□□□□
11	□□□□□□□□	43	□□□□□□□□	75	□□□□□□□□	107	□□□□□□□□	139	□□□□□□□□	171	□□□□□□□□	203	□□□□□□□□	235	□□□□□□□□
12	□□□□□□□□	44	□□□□□□□□	76	□□□□□□□□	108	□□□□□□□□	140	□□□□□□□□	172	□□□□□□□□	204	□□□□□□□□	236	□□□□□□□□
13	□□□□□□□□	45	□□□□□□□□	77	□□□□□□□□	109	□□□□□□□□	141	□□□□□□□□	173	□□□□□□□□	205	□□□□□□□□	237	□□□□□□□□
14	□□□□□□□□	46	□□□□□□□□	78	□□□□□□□□	110	□□□□□□□□	142	□□□□□□□□	174	□□□□□□□□	206	□□□□□□□□	238	□□□□□□□□
15	□□□□□□□□	47	□□□□□□□□	79	□□□□□□□□	111	□□□□□□□□	143	□□□□□□□□	175	□□□□□□□□	207	□□□□□□□□	239	□□□□□□□□
16	□□□□□□□□	48	□□□□□□□□	80	□□□□□□□□	112	□□□□□□□□	144	□□□□□□□□	176	□□□□□□□□	208	□□□□□□□□	240	□□□□□□□□
17	□□□□□□□□	49	□□□□□□□□	81	□□□□□□□□	113	□□□□□□□□	145	□□□□□□□□	177	□□□□□□□□	209	□□□□□□□□	241	□□□□□□□□
18	□□□□□□□□	50	□□□□□□□□	82	□□□□□□□□	114	□□□□□□□□	146	□□□□□□□□	178	□□□□□□□□	210	□□□□□□□□	242	□□□□□□□□
19	□□□□□□□□	51	□□□□□□□□	83	□□□□□□□□	115	□□□□□□□□	147	□□□□□□□□	179	□□□□□□□□	211	□□□□□□□□	243	□□□□□□□□
20	□□□□□□□□	52	□□□□□□□□	84	□□□□□□□□	116	□□□□□□□□	148	□□□□□□□□	180	□□□□□□□□	212	□□□□□□□□	244	□□□□□□□□
21	□□□□□□□□	53	□□□□□□□□	85	□□□□□□□□	117	□□□□□□□□	149	□□□□□□□□	181	□□□□□□□□	213	□□□□□□□□	245	□□□□□□□□
22	□□□□□□□□	54	□□□□□□□□	86	□□□□□□□□	118	□□□□□□□□	150	□□□□□□□□	182	□□□□□□□□	214	□□□□□□□□	246	□□□□□□□□
23	□□□□□□□□	55	□□□□□□□□	87	□□□□□□□□	119	□□□□□□□□	151	□□□□□□□□	183	□□□□□□□□	215	□□□□□□□□	247	□□□□□□□□
24	□□□□□□□□	56	□□□□□□□□	88	□□□□□□□□	120	□□□□□□□□	152	□□□□□□□□	184	□□□□□□□□	216	□□□□□□□□	248	□□□□□□□□
25	□□□□□□□□	57	□□□□□□□□	89	□□□□□□□□	121	□□□□□□□□	153	□□□□□□□□	185	□□□□□□□□	217	□□□□□□□□	249	□□□□□□□□
26	□□□□□□□□	58	□□□□□□□□	90	□□□□□□□□	122	□□□□□□□□	154	□□□□□□□□	186	□□□□□□□□	218	□□□□□□□□	250	□□□□□□□□
27	□□□□□□□□	59	□□□□□□□□	91	□□□□□□□□	123	□□□□□□□□	155	□□□□□□□□	187	□□□□□□□□	219	□□□□□□□□	251	□□□□□□□□
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29	□□□□□□□□	61	□□□□□□□□	93	□□□□□□□□	125	□□□□□□□□	157	□□□□□□□□	189	□□□□□□□□	221	□□□□□□□□	253	□□□□□□□□
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□ = JUMPER INSTALLED

□ = NO JUMPER

BAUD RATE SELECTION JUMPERS

To set COM 2 for the desired baud rate, install jumper 2, 1 and 0 for COM 2. See Figure 1. To set COM 3 for the desired baud rate, install jumper 2, 1 and 0 for COM 3. See Figure 1. Refer to the following table for the jumpers to be installed:

Baud Rate	Description	Jumper Settings		
		2	1	0
300	Selects 300 BAUD rate on COM 2 or COM 3.	0	X	X
1200	Selects 1200 BAUD rate on COM 2 or COM 3.	X	0	X
2400	Selects 2400 BAUD rate on COM 2 or COM 3.	0	0	X
4800	Selects 4800 BAUD rate on COM 2 or COM 3.	X	X	0
9600	Selects 9600 BAUD rate on COM 2 or COM 3.	0	X	0
19.2K	Selects 19200 BAUD rate on COM 2 or COM 3.	X	0	0
38.4K	Selects 38400 BAUD rate on COM 2 or COM 3.	0	0	0
No Clock	Reserved for Future Use.	X	X	X

NOTE: X means that a jumper is installed, 0 means that no jumper is installed.

Refer to the Operations Manual of your host terminal or computer for configuring and initializing the host's serial port. The host should be set up with the following parameters:

BAUD RATE: 300, 1200, 2400 4800, 9600, 19200 or 38400
START BITS: 1
STOP BITS: 1
DATA BITS: 8
PARITY: NONE

POWER UP STATUS SELECTION JUMPERS

Refer to Figure 1 for the location of these jumpers.

Install "Auto" Jumper if you wish LC4 to begin executing the current program in memory upon power-up.

When jumper 'R' is installed, then all battery backed RAM is cleared upon power up. The 'R' jumper should never be installed on a permanent basis. It is meant to be used for trouble shooting and/or debugging purposes *only*. If you want to clear (erase) all battery backed RAM, then follow these steps: (1) install the 'R' jumper, (2) cycle power ON for a few seconds, (3) turn power OFF, and (4) remove jumper 'R'.

Do not install jumper 'E', it is reserved for future use.

POWER SUPPLY

Power for the G4LC4 I/O Card is supplied from the G4LC4C G4 PAMUX Base Board for Local Controller. A separate power supply brick will supply power to the G4LC4 Local Controller as well as the Digital and Analog bricks.

BUS TERMINATION RESISTORS

For the G4 PAMUX units to operate correctly, both ends of the G4 PAMUX bus *must* be terminated. The host computer and the *last* G4 PAMUX I/O Brick (Digital or Analog) on the bus are the only devices that should have termination resistors installed. If the G4LC4 Local Controller is the host computer for the bricks connected to the G4 PAMUX bus, then it must have termination resistors installed. The G4LC4A G4 PAMUX I/O Card for Local Controller provides the required termination resistors. See Figure 1. The resistors are pre-installed at the factory. The user only needs to be concerned about installing resistors for the *last* G4 PAMUX I/O Brick (Digital or Analog) on the bus.