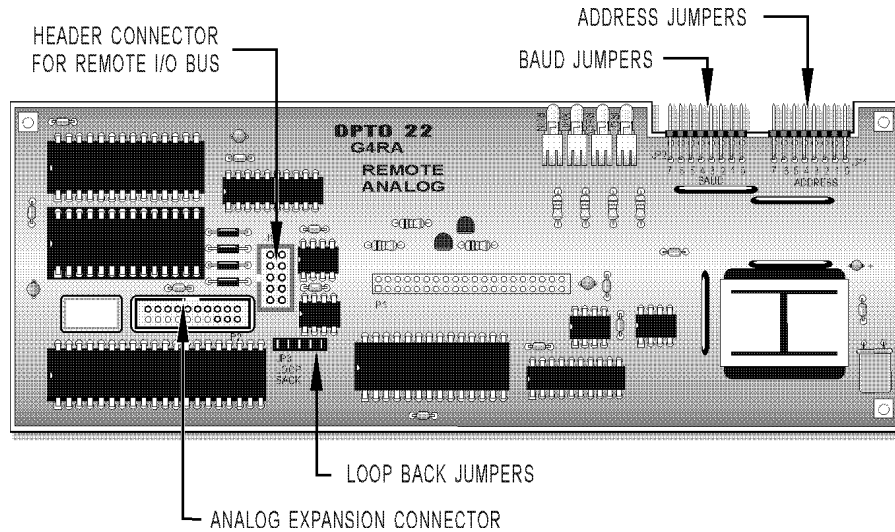


G4RA/G4RD Brain Board



Addressing

Install a jumper where indicated by the following table to set a unique system address on each I/O brick. The factory default is address 0.

7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0
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
28	60	92	124	156	188	220	252
29	61	93	125	157	189	221	253
30	62	94	126	158	190	222	254
31	63	95	127	159	191	223	255

■ = JUMPER INSTALLED □ = NO JUMPER

INSTALLATION NOTE

page 2/5

Form 629-040920

Baud Jumper Group

Install jumpers according to the following table.

Table 1 - Remote Brick Jumpers		
Jumper	Jumpers for use with Cyrano/FactoryFloor	Description
0-3	See Table 2 - Baud Rate Jumpers	Selects the baud rate. The factory default baud rate is 115.2 KBd.
4	In	Selects the data transmission protocol. An installed jumper selects binary protocol and is the factory default. If the jumper is out, ASCII protocol is selected.
5	In	Selects the data verification method. An installed jumper selects CRC-16 and is the factory default. If the jumper is out, an 8-bit checksum is selected.
6	Out	Reserved for future use.
7	Out	Reserved for future use.

Baud Rate Jumpers

BAUD RATE	JUMPER POSITION				
	3	2	1	0	
115.2 KBaud (factory default setting)	■	■	■	□	Baud 4 Binary ■ (Default) ASCII □
76.8 KBaud	■	■	□	■	
57.6 KBaud	■	■	□	□	
38.4 KBaud	■	□	■	■	Baud 5 Data verification CRC16 ■ (Default) Checksum Modulo 256 □
19.2 KBaud	■	□	■	□	
9600 Baud	■	□	□	■	
4800 Baud	■	□	□	□	
2400 Baud	□	■	■	■	
1200 Baud	□	■	■	□	
600 Baud	□	■	□	■	
300 Baud	□	■	□	□	

■ = JUMPER INSTALLED

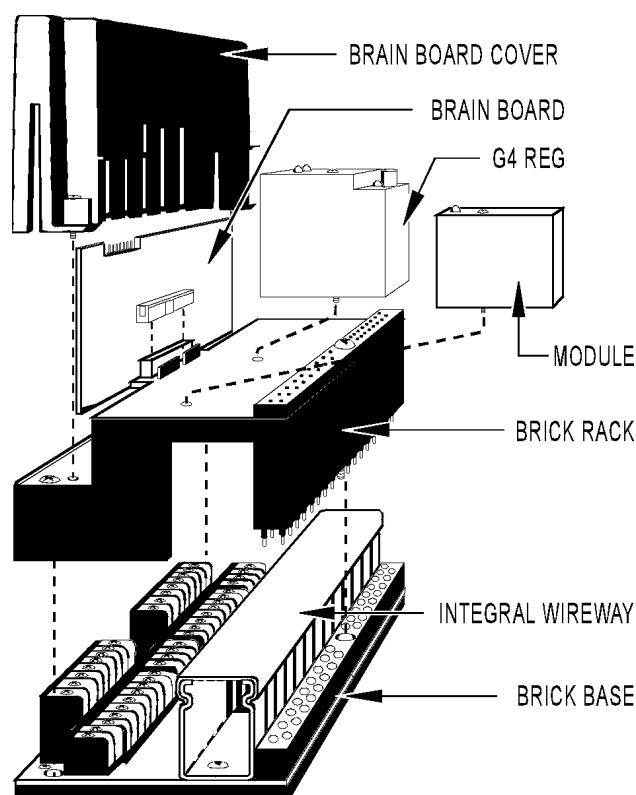
Installation

1. Disassemble the brick unit and attach the brick base to the mounting surface.
2. Connect field and power wiring to the brick base. Refer to Form # 595, Mystic 200 System Installation Guide, for specific wiring information.

Caution: Turn OFF all power before wiring to the brick.

3. Install the brick rack.
4. Install the I/O modules, G4REG, and brain board to the brick rack.
5. Set the jumpers and connect a remote cable or SBTA communications adapter to the 10-pin header.
6. If this is physically the last brick on the remote I/O network, install jumpers on the "JP3 LOOPBACK" jumper group.
7. Attach the brain board cover.

Brick Diagram



INSTALLATION NOTE

page 4/5

Form 629-040920

Power Requirements

G4A8R	
*System power consumption @ 24 VDC $\pm$ 0.1 V (Excludes analog modules)	
Terminated (last brick in the bus)	180 mA
Non-terminated (all other bricks)	180 mA
Analog expansion brick	65 mA
Typical analog module	45 mA

G4D16R	
*System power consumption @ 24 VDC $\pm$ 0.1 V (Excludes analog modules)	
Terminated (last brick in the bus)	180 mA
Non-terminated (all other bricks)	180 mA

***Note:** The 24 VDC common must be tied to earth ground. When using mistic power supplies, this is handled by the power supply as long as earth ground is connected to the AC side.

Products

Opto 22 produces a broad array of reliable, flexible hardware and software products for industrial automation, remote monitoring, enterprise data acquisition, and machine-to-machine (M2M) applications.

SNAP Ethernet Systems

Based on the Internet Protocol (IP), SNAP Ethernet systems offer flexibility in their network connectivity and in the software applications they work with. The physical network may be a wired Ethernet network, a cellular wireless network, or a modem. A wide variety of software applications can exchange data with SNAP Ethernet systems, including:

- Opto 22's own ioProject™ suite of control and HMI software
- Manufacturing resource planning (MRP), enterprise management, and other enterprise systems
- Human-machine interfaces (HMIs)
- Databases
- Email systems
- OPC client software
- Custom applications
- Modbus/TCP software and hardware.



SNAP Ethernet system hardware consists of controllers and I/O units. Controllers provide central control and data distribution. I/O units provide local connection to sensors and equipment.

SNAP OEM Systems

Opto 22 SNAP OEM I/O systems are highly configurable, programmable processors intended for OEMs, IT professionals, and others who need to use custom software with Opto 22 SNAP I/O modules.

Linux® applications running on these systems can read and write to analog, simple digital, and serial I/O points on SNAP I/O modules using easily implemented file-based operations. Applications can be developed using several common development tools and environments, including C or C++, Java, and shell scripts.



M2M Systems

Machine-to-machine (M2M) systems connect your business computer systems to the machines, devices, and environments you want to monitor, control, or collect data from. M2M systems often use wireless cellular communications to link remote facilities to central systems over the Internet, or to provide monitoring and control capability via a cellular phone.

Opto 22's Nvivo™ systems include everything you need for M2M—interface and communications hardware, data service plan, and Web portal—in one easy-to-use package. Visit nvio.opto22.com for more information.

Opto 22 Software

Opto 22's ioProject and FactoryFloor® software suites provide full-featured and cost-effective control, HMI, and OPC software to power your Opto 22 hardware. These software applications help you develop control automation solutions, build easy-to-use operator interfaces, and expand your manufacturing systems' connectivity.



Quality

In delivering hardware and software solutions for worldwide device management and control, Opto 22 retains the highest commitment to quality. We do no statistical testing; each product is made in the U.S.A. and is tested twice before leaving our 160,000 square-foot manufacturing facility in Temecula, California. That's why we can guarantee solid-state relays and optically-isolated I/O modules *for life*.

Product Support

Opto 22's Product Support Group offers comprehensive technical support for Opto 22 products. The staff of support engineers represents years of training and experience, and can assist with a variety of project implementation questions. Product support is available in English and Spanish from Monday through Friday, 7 a.m. to 5 p.m. PST.

Opto 22 Web Sites

- www.opto22.com
- nvio.opto22.com
- www.internetio.com (live Internet I/O demo)

Other Resources

- OptoInfo CDs
- Custom integration and development
- Hands-on customer training classes.



About Opto 22

Opto 22 manufactures and develops hardware and software products for industrial automation, remote monitoring, enterprise data acquisition, and machine-to-machine (M2M) applications. Using standard, commercially available Internet, networking, and computer technologies, Opto 22's input/output and control systems allow customers to monitor, control, and acquire data from all of the mechanical, electrical, and electronic assets that are key to their business operations. Opto 22's products and services support automation end users, OEMs, and information technology and operations personnel.

Founded in 1974 and with over 85 million Opto 22-connected devices deployed worldwide, the company has an established reputation for quality and reliability.