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Model 3000-02

96 SPST Relays

90400120-002



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CONTACT INFORMATION

Giga-tronics, Incorporated
4650 Norris Canyon Road
San Ramon, California 94583
Telephone: 800.726.4442 (only within the United States)
925.328.4650
Fax: 925.328.4700
On the Internet: www.gigatronics.com

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89/336/EEC and 73/23/EEC	EMC Directive and Low Voltage Directive
EN61010-1 (1993)	Electrical Safety
EN61326-1 (1997)	EMC – Emissions and Immunity
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Giga-tronics, Incorporated	4650 Norris Canyon Road San Ramon, California 94583 U.S.A.
Type of Equipment:	**Model Series Number**
Switching Module	3000-02

Declaration of Conformity on file. Contact Giga-tronics at the following;

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4650 Norris Canyon Road
San Ramon, California 94583
Telephone: 800.726.4442 (only within the United States)
925.328.4650
Fax: 925.328.4700

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Revision History			
Revision	**Description of Change**	**Chg Order #**	**Approved By**
A	Initial Release		
B	Updated		
C	Reformatted 3/12		RCW

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Chapter 1 **Introduction**

1.1 Safety and Manual Conventions

This manual contains conventions regarding safety and equipment usage as described below.

1.1.1 Product Reference

Throughout this manual, the term “Common Core Switching Platform, Series 8800” refers to all models of within the series, unless otherwise specified.

1.1.2 Personal Safety Alert



WARNING: Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

1.1.3 Equipment Safety Alert



CAUTION: Indicates a situation which can damage or adversely affect the product or associated equipment.

1.1.4 Notes

Notes are denoted and used as follows:

NOTE: Highlights or amplifies an essential operating or maintenance procedure, practice, condition or statement.

1.1.5 Electrical Safety Precautions

Any servicing instructions are for use by service-trained personnel only. To avoid personal injury, do not perform any service unless you are qualified to do so.

For continued protections against fire hazard, replace the AC line fuse only with a fuse of the same current rating and type. Do not use repaired fuses or short circuited fuse holders.

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Chapter 2 Configuration Table

Module

90400120-001

PL90400120-001

Schematics

85002080

PL85002080

SCH85002080

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Chapter 3 Functional Description

3.1 Introduction

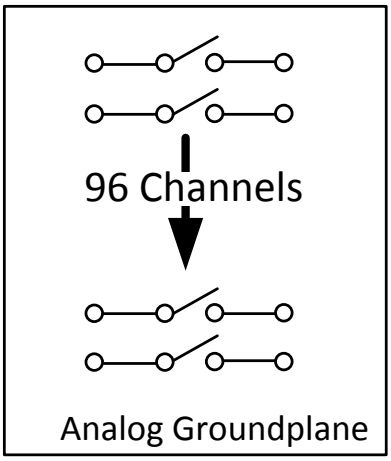
This manual provides the necessary information for the maintenance of the Model 3000-2, Ninety-six (96) SPST, 5 amp relay VXI Module.

3.2 General Description

The Module 3000-2 is a VXI compatible module which provides high quality and high power general purpose switching. There are 96 SPST switches rated at 5 amps at 150VDC or 250VAC. Each of the SPST switches are independent and individually controllable within the module. Each relay is individually controlled, any and all relays can be closed. This module is ideal for use as high current isolation relays or connect relays for power supplies, scanners, stimulus and measurement switching applications. The interface and mechanical construction meets the specification of the VXIbus System Specification, Rev: 1.2 and 1.3.

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Chapter 4 **Block Diagram**



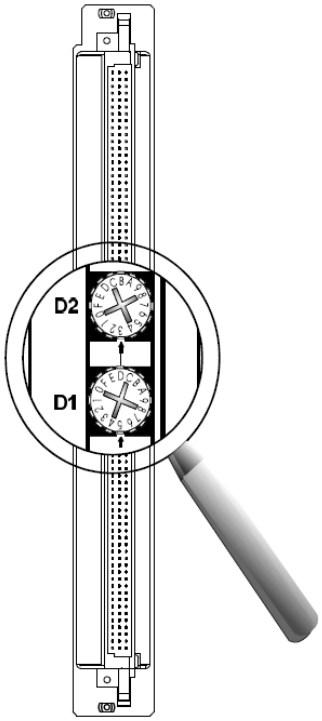
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Chapter 5 Controls and Indicators

The following controls and indicators are provided to select and display the functions of the ASCOR 3000-02 Module's operating environment.

5.1 VXI Logical Address

The Logical Address Switch is dual circular switches, D1 and D2 which are located at the rear of the module. The address can be set to any value between 1 and 255 (decimal) or 1 and FF (hexadecimal), (address 0 is reserved for the resource manager). However, the Module fully supports Dynamic Configuration as defined in ***Section F of the VXI specification,*** address 255 (FF) should be selected only if the Resource Manager also supports Dynamic Configuration.



5.2 LEDs

The following LEDs are visible at the Module's front panel to indicate the

status of the module's operation:

5.2.1 "BUS" LED

This green color LED is normally off and will flash on when the module is addressed by the system.

5.2.2 "PWR" LED

This red color LED is normally on when the Module is Powered up.

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Chapter 6 **Internal Settings**

The following items are inside the module and can be reached by removing the side cover.

6.1 Fuse

The ASCOR VXI 3000-02 uses a 10 Amp fuse in the +5 Volt line and is located on the Mother Board (MB) assembly.

6.2 VXI_{bus} Interrupt Level Selection

The VXIbus interrupt level is set with three bits in the “3Eh” register.

See the section on “A16 ADDRESS SPACE REGISTER DESCRIPTION”.

The interrupt level is factory set to “no interrupt”.

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Chapter 7 **Specifications**

SPST relays:	96
Electrical:	
Switching Voltage (DC/Peak AC, Resistive)	150 VDC, 250 VAC
Switching Current (DC/Peak AC, Resistive)	5 Amps
Carry Current (DC/Peak AC, Resistive)	5 Amps
Contact Power Rating (DC/Peak AC, Resistive)	150 Watts or 1250 VA
Life Expectancy (@ Signal <<1.0V, 0.010A)	100,000
Contact resistance:	0.030 ohms at rated current
Operating time:	6mS
Mechanical:	
Thickness:	1.200 inches
Width:	10.317 inches
Length:	13.78 inches
Weight:	4 lbs.
Environmental Specifications	
Temperature:	
Operating:	0º to 55ºC
Storage:	- 40º to 75ºC
Relative Humidity:	
Operating:	0 to 90% non-condensing
Storage:	0 to 95% non-condensing

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Chapter 9 **Register Map**

9.1 Introduction

The main circuit board assembly contains the VXI interface and the Power relays.

The basic module is a register based VXI module. It is a register based DC device.

The DC stands for Dynamic Configuration, where the Resource Manager software

running on the slot-0 controller/computer determines the A16 and A24 address

space (refer to the VXI System Specifications). A library cell is made SC (Static Configuration) devices by changing the address switches from FFh to a value in

the range 01h-FEh. Each card in the VXI system must have its own A16 address.

9.2 Programming

The following chart shows the signal name and the register assignments for the

switch matrices.

MSB **LSB**

REG	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0**
40h	K15	K16	K17	K18	K7	K8	K9	K10	K11	K12	K1	K2	K3	K4	K5	K6
42h	K35	K36	K25	K26	K27	K28	K29	K30	K19	K20	K21	K22	K23	K24	K13	K14
44h	K43	K44	K45	K46	K47	K48	K37	K38	K39	K40	K41	K42	K31	K32	K33	K34
46h	K63	K64	K65	K66	K55	K56	K57	K58	K59	K60	K49	K50	K51	K52	K53	K54
48h	K83	K84	K73	K74	K75	K76	K77	K78	K67	K68	K69	K70	K71	K72	K61	K62
4Ah	K91	K92	K93	K94	K95	K96	K85	K86	K87	K88	K89	K90	K79	K80	K81	K82

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REGISTER: 40h
FUNCTION: CONTROL, RELAYS

BIT	CONNECTION	COMMENTS
0	J1 - 49 TO J1 - 24	RELAY K6
1	J1 - 48 TO J1 - 23	RELAY K5
2	J1 - 47 TO J1 - 22	RELAY K4
3	J1 - 46 TO J1 - 21	RELAY K3
4	J1 - 45 TO J1 - 20	RELAY K2
5	J1 - 44 TO J1 - 19	RELAY K1
6	J1 - 43 TO J1 - 18	RELAY K12
7	J1 - 42 TO J1 - 17	RELAY K11
8	J1 - 41 TO J1 - 16	RELAY K10
9	J1 - 40 TO J1 - 15	RELAY K9
10	J1 - 39 TO J1 - 14	RELAY K8
11	J1 - 38 TO J1 - 13	RELAY K7
12	J1 - 37 TO J1 - 12	RELAY K18
13	J1 - 36 TO J1 - 11	RELAY K17
14	J1 - 35 TO J1 - 10	RELAY K16
15	J1 - 34 TO J1 - 9	RELAY K15

REGISTER: 42h
FUNCTION: CONTROL, RELAYS

BIT	CONNECTION	COMMENTS
0	J1 - 33 TO J1 - 8	RELAY K14
1	J1 - 32 TO J1 - 7	RELAY K13
2	J1 - 31 TO J1 - 6	RELAY K24
3	J1 - 30 TO J1 - 5	RELAY K23
4	J1 - 29 TO J1 - 4	RELAY K22
5	J1 - 28 TO J1 - 3	RELAY K21
6	J1 - 27 TO J1 - 2	RELAY K20
7	J1 - 26 TO J1 - 1	RELAY K19
8	J2 - 49 TO J2 - 24	RELAY K30
9	J2 - 48 TO J2 - 23	RELAY K29
10	J2 - 47 TO J2 - 22	RELAY K28
11	J2 - 46 TO J2 - 21	RELAY K27
12	J2 - 45 TO J2 - 20	RELAY K26
13	J2 - 44 TO J2 - 19	RELAY K25
14	J2 - 43 TO J2 - 18	RELAY K36
15	J2 - 42 TO J2 - 17	RELAY K35

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REGISTER: 44h
FUNCTION: CONTROL, RELAYS

BIT	CONNECTION	COMMENTS
0	J2 - 41 TO J2 - 16	RELAY K34
1	J2 - 40 TO J2 - 15	RELAY K33
2	J2 - 39 TO J2 - 14	RELAY K32
3	J2 - 38 TO J2 - 13	RELAY K31
4	J2 - 37 TO J2 - 12	RELAY K42
5	J2 - 36 TO J2 - 11	RELAY K41
6	J2 - 35 TO J2 - 10	RELAY K40
7	J2 - 34 TO J2 - 9	RELAY K39
8	J2 - 33 TO J2 - 8	RELAY K38
9	J2 - 32 TO J2 - 7	RELAY K37
10	J2 - 31 TO J2 - 6	RELAY K48
11	J2 - 30 TO J2 - 5	RELAY K47
12	J2 - 29 TO J2 - 4	RELAY K46
13	J2 - 28 TO J2 - 3	RELAY K45
14	J2 - 27 TO J2 - 2	RELAY K44
15	J2 - 26 TO J2 - 1	RELAY K43

REGISTER: 46h
FUNCTION: CONTROL, RELAYS

BIT	CONNECTION	COMMENTS
0	J3 - 49 TO J3 - 24	RELAY K54
1	J3 - 48 TO J3 - 23	RELAY K53
2	J3 - 47 TO J3 - 22	RELAY K52
3	J3 - 46 TO J3 - 21	RELAY K51
4	J3 - 45 TO J3 - 20	RELAY K50
5	J3 - 44 TO J3 - 19	RELAY K49
6	J3 - 43 TO J3 - 18	RELAY K60
7	J3 - 42 TO J3 - 17	RELAY K59
8	J3 - 41 TO J3 - 16	RELAY K58
9	J3 - 40 TO J3 - 15	RELAY K57
10	J3 - 39 TO J3 - 14	RELAY K56
11	J3 - 38 TO J3 - 13	RELAY K55
12	J3 - 37 TO J3 - 12	RELAY K66
13	J3 - 36 TO J3 - 11	RELAY K65
14	J3 - 35 TO J3 - 10	RELAY K64
15	J3 - 34 TO J3 - 9	RELAY K63

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REGISTER: 48h
FUNCTION: CONTROL, RELAYS

BIT	CONNECTION	COMMENTS
0	J3 - 33 TO J3 - 8	RELAY K62
1	J3 - 32 TO J3 - 7	RELAY K61
2	J3 - 31 TO J3 - 6	RELAY K72
3	J3 - 30 TO J3 - 5	RELAY K71
4	J3 - 29 TO J3 - 4	RELAY K70
5	J3 - 28 TO J3 - 3	RELAY K69
6	J3 - 27 TO J3 - 2	RELAY K68
7	J3 - 26 TO J3 - 1	RELAY K67
8	J4 - 49 TO J4 - 24	RELAY K78
9	J4 - 48 TO J4 - 23	RELAY K77
10	J4 - 47 TO J4 - 22	RELAY K76
11	J4 - 46 TO J4 - 21	RELAY K75
12	J4 - 45 TO J4 - 20	RELAY K74
13	J4 - 44 TO J4 - 19	RELAY K73
14	J4 - 43 TO J4 - 18	RELAY K84
15	J4 - 42 TO J4 - 17	RELAY K83

REGISTER: 4Ah
FUNCTION: CONTROL, RELAYS

BIT	CONNECTION	COMMENTS
0	J4 - 41 TO J4 - 16	RELAY K82
1	J4 - 40 TO J4 - 15	RELAY K81
2	J4 - 39 TO J4 - 14	RELAY K80
3	J4 - 38 TO J4 - 13	RELAY K79
4	J4 - 37 TO J4 - 12	RELAY K90
5	J4 - 36 TO J4 - 11	RELAY K89
6	J4 - 35 TO J4 - 10	RELAY K88
7	J4 - 34 TO J4 - 9	RELAY K87
8	J4 - 33 TO J4 - 8	RELAY K86
9	J4 - 32 TO J4 - 7	RELAY K85
10	J4 - 31 TO J4 - 6	RELAY K96
11	J4 - 30 TO J4 - 5	RELAY K95
12	J4 - 29 TO J4 - 4	RELAY K94
13	J4 - 28 TO J4 - 3	RELAY K93
14	J4 - 27 TO J4 - 2	RELAY K92
15	J4 - 26 TO J4 - 1	RELAY K91

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