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Model 3000-4357(A)
32 SPDT Switch Module
90401200

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This product complies with the essential requirements of the following applicable European Directives, and carries the CE mark accordingly.

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
Manufacturer's Name:	**Manufacturer's Address**
Giga-tronics, Incorporated	4650 Norris Canyon Road San Ramon, California 94583 U.S.A.
Type of Equipment:	**Model Series Number**
Switching Module	3000-4357

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

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Revision History			
Revision	**Description of Change**	**Chg Order #**	**Approved By**
	Initial Release		
A	Updated 6/02		
B	Updated		
C	Updated 10/05		
D	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**

3000-4357

PL 90401200
ASM 90401200

PL 85003950
ASM 85003950
SCH 85003950

Relay 50100400

3000-4357A

PL 90401200-100
ASM 90401200-100

PL 85005430
ASM 85005430
SCH 85005430

Relay 50100830

PL = PARTS LIST, ASM = ASSEMBLY DRAWING, SCH = SCHEMATIC.

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Chapter 3 Functional Description

NOTE : All references to the 3000-4357 below also apply to the 3000-4357A.

3.1 Introduction

The ASCOR VXI 3000-4357 consists of 32 Single Pole Double Throw (SPDT) relays. This module can be used as a direct interchange for the Tektronix VXI module VX4357. Each relay is independently controlled and can be independently opened or closed under program control.

3.2 General Description

The 3000-4357 is a direct hardware replacement for the Tektronix VX4357. The same front panel connectors, the same signals come to the same pins, and the specifications are the same or better. No special cables or adapter are necessary. ASCOR also provides a software driver, which will run both the VX4357 and the 3000-4357.

From the system viewpoint (addressing, register map, front panel connections, etc.) the 3000-4357 and the 3000-4357A look the same.
The main hardware differences are as follows :

3000-4357 Relays

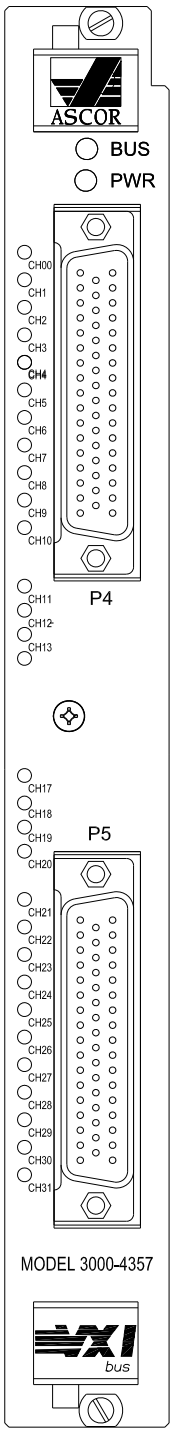
RELAY TYPE	ASCOR P/N 50100400
CONFIGURATION	SPDT
RELAY CONTACTS	SILVER ALLOY
INITIAL CONTACT RESISTANCE	< 100 mOhm
SWITCHING POWER (MAX)	1250 VA : 150W
SWITCHING VOLTAGE (MAX)	250 VAC : 110 VDC
SWITCHING CURRENT (MAX)	10 A
RELAY OPERATE TIME (MAX)	5 mS
RELAY RELEASE TIME (MAX)	2 mS
MECHANICAL LIFE (min)	10,000,000 operations
OPERATIONAL LIFE (min)	5A at 250 VAC - 50,000 operations 5A at 30 VDC - 100,000 operations

3000-4357A Relays

RELAY TYPE	ASCOR P/N 50100830
CONFIGURATION	SPDT
RELAY CONTACTS	GOLD-CLAD SILVER
INITIAL CONTACT RESISTANCE	< 50 mOhm
SWITCHING POWER (MAX)	125 VA : 60 W
SWITCHING VOLTAGE (MAX)	250 VAC : 220 VDC
SWITCHING CURRENT (MAX)	2 A (AC/DC)
RELAY OPERATE TIME (MAX)	3 mS
RELAY RELEASE TIME (MAX)	2 mS
MECHANICAL LIFE (min)	100,000,000 operations
OPERATIONAL LIFE (min)	2A at 30 VDC – 500,000 operations

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Chapter 4 **Front Panel**



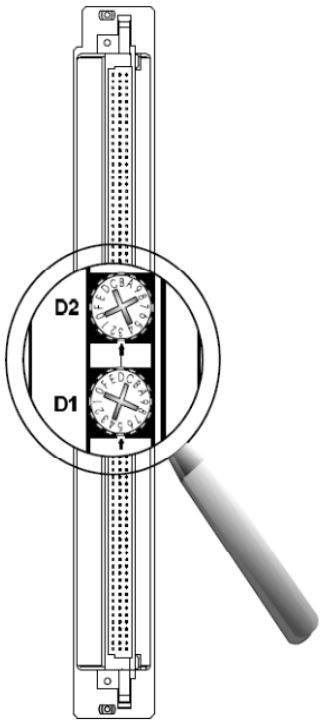
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Chapter 5 Controls and Indicators

The following controls and indicators are provided to select and display the functions of the ASCOR 3000-4357 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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5.2.3 " CH00 - CH31 " LEDS

These 32 green LEDS are used to indicate which relay has been activated.

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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 3000-4357 uses a 5 Amp fuse in the +5 Volt line and a 5 A fuse in the +12 Volt line. If any fuse opens, remove the fault before replacing the fuse to avoid any other damage.

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**

Configuration :	32 SPDT individual relays.
Cross talk between Channels:	> -51 dB at 1 MHz
Bandwidth :	> 91 MHz (at –3dB)
Power up Condition :	At power up all relays are reset (Open)
VXI Compatibility ;	Fully compatible with VXI Specification REV. 1.0 .
VXI Device Type :	VXI register based with ASCOR driver.
Power Requirements :	+5 volts @ 1.0 amps (max) +12 volts @ 1.25 amps (max)
VXI Compatibility :	Fully compatible with VXI Specification REV. 1.0 .
VXI Device Type :	VXI register based with ASCOR driver.
VXI Card Size :	C size, one slot wide.
Temperature :	0°C to +50°C, operating -40°C to +85°C, storage
Humidity	< 95% R.H., non-condensing, 0°C to +30°C. < 75% R.H., non-condensing, +31°C to +40°C < 45% R.H., non-condensing, +41°C to +50°C
VXI Bus Radiated Emissions :	Complies with VXIbus Specification
VXI Bus Conducted Emissions :	Complies with VXIbus Specification.
Dimensions :	VXI C size ; 10.3in x 13.8in x 1.2in
Weight :	3 lbs.

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A16 Address Space Register Description

Offset	**Value**
00h	CFB5 hex C = Register based, A16/A24 FB5 = ASCOR Manufacturer ID
02h	7F2C hex 7 = 10,000 hex space in the A24 Address space F2C = HV Discrete Driver/Receiver VXI Module number
04h	FFFC hex (typical after running Resource Manager) In order to reset the module: read this address, set bit 0 high, then set bit 0 low without altering the other bits.

Control	**Bit**		
3Eh	0	Low true output enable to the coil driver ICs.	
	1	When low enables read back of the coil state. When high enables read back of the data registers.	
	2	Leave set to 0, reserved by Ascor.	
	3	Interrupt bit 0 (LSB)	Used to set the Module IRQ Level:
	4	Interrupt bit 1	0 = No Interrupts
	5	Interrupt bit 2 (MSB)	1-7 = IRQ1-IRQ7
	6-7	Don’t Care.	
	8-15	Mask Off.	

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REGISTER = 8000h

RELAY	BIT
K1	0
K2	1
K3	2
K4	3
K5	4
K6	5
K7	6
K8	7
K9	8
K10	9
K11	10
K12	11
K13	12
K14	13
K15	14
K16	15

REGISTER = 8002h

RELAY	BIT
K17	0
K18	1
K19	2
K20	3
K21	4
K22	5
K23	6
K24	7
K25	8
K26	9
K27	10
K28	11
K29	12
K30	13
K31	14
K32	15

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Chapter 9 Front Panel Pin List

RELAY	NORMALLY CLOSED CONTACT	COMMON CONTACT	NORMALLY OPEN CONTACT
K1	P4-34	P4-2	P4-1
K2	P4-36	P4-4	P4-3
K3	P4-38	P4-6	P4-5
K4	P4-40	P4-8	P4-7
K5	P4-42	P4-10	P4-9
K6	P4-44	P4-12	P4-11
K7	P4-46	P4-14	P4-13
K8	P4-48	P4-16	P4-15
K9	P4-35	P4-19	P4-18
K10	P4-37	P4-21	P4-20
K11	P4-39	P4-23	P4-22
K12	P4-41	P4-25	P4-24
K13	P4-43	P4-27	P4-26
K14	P4-45	P4-29	P4-28
K15	P4-47	P4-31	P4-30
K16	P4-49	P4-33	P4-32
K17	P5-34	P5-2	P5-1
K18	P5-36	P5-4	P5-3
K19	P5-38	P5-6	P5-5
K20	P5-40	P5-8	P5-7
K21	P5-42	P5-10	P5-9
K22	P5-44	P5-12	P5-11
K23	P5-46	P5-14	P5-13
K24	P5-48	P5-16	P5-15
K25	P5-35	P5-19	P5-18
K26	P5-37	P5-21	P5-20
K27	P5-39	P5-23	P5-22
K28	P5-41	P5-25	P5-24
K29	P5-43	P5-27	P5-26
K30	P5-45	P5-29	P5-28
K31	P5-47	P5-31	P5-30
K32	P5-49	P5-33	P5-32

P4-17, 50 = AGND
P5 -17, 50 = AGND

NOTE : P4 = J1 , AND P5 = J2 ON SCHEMATIC

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