

SEC 3500 Operator Interface

Instruction and Operation Manual



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Part Number 75-3500 Version 122207-001

Commitment

Our quality and service are uncompromising. We back each of our products with a two-year warranty on all materials and workmanship. We offer technical support, user training and on-site service and maintenance of equipment to meet the needs of our customers.

Gas Detection Service

Individually designed maintenance packages are available for specific customer needs. Service begins with verification of the system installation that includes an initial system check and calibration. We then offer customer training programs (on-site and at factory) to insure that technical personnel fully understand operation and maintenance procedures. When on-the-spot assistance is required, service representatives are available to handle any questions or problems immediately.

Warranty

Sensor Electronics Corporation (SEC) warrants products manufactured by SEC to be free from defects in workmanship and materials for a period of two (2) years from date of shipment from the factory. Any parts returned freight pre-paid to the factory and found defective within the warranty would be repaired or replaced, at SEC's option. SEC will return repaired or replaced equipment pre-paid lowest cost freight. This warranty does not apply to items, which by their nature are subject to deterioration or consumption in normal service. Such items may include:

Fuses and Batteries.

Warranty is voided by abuse including rough handling, mechanical damage, alteration or repair. This warranty covers the full extent of SEC liability and SEC is not responsible for removal, replacement costs, local repair costs, transportation costs or contingent expenses incurred without prior written approval. Sensor Electronics Corporation's obligation under this warranty shall be limited to repair or replacement of any product that has been returned to Sensor Electronics Corporation for warranty consideration. This warranty is expressly in lieu of any and all other warranties expressed or implied, and all other obligations or liabilities on the part of Sensor Electronics Corporation including but not limited to, the fitness for a particular purpose. In no event shall Sensor Electronics Corporation be liable for direct, incidental, or consequential loss or damage of any kind connected with the use of its products or failure to function or operate properly.

Year 2000 Compliance

All Sensor Electronics products have been tested and are certified by Sensor Electronics to accurately process date/time and date/time related data from, into and between the 20th and 21st centuries. Sensor Electronics products neither contain nor create any logical or mathematical inconsistency, will not malfunction, and will not cease to function when processing date/time data.

Please contact Sensor Electronics for further information.

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I. SPECIFICATIONS

Model: SEC3500 Operator Interface

Interface

RS485 Port: Interactive "Modbus" (expandable to two)

RS232 Port: "Statcast" System parameter broadcast

Ethernet Port: Remote Screen Access

16 Programmable Relays (expandable to 40)

Construction: Powder Coated Steel

Dimensions: 16" X 16" X 10"

Weight: 45lbs

Operating Temperature Rating:

0° to +50°C at 0 to 99% RH (non-condensing)

Operating Voltage: 19 to 29 VDC $\overline{\text{---}}$

Power Consumption: 40 Watt Max. (Not including relay contact current or 24VDC power supplied to external devices)

Relay Contacts: 1 NO, 1 NC per Relay.

Contact Rating: 8A @ 30VDC, 8A @ 250VAC

System Components:

SEC3500 Operator Interface (Master)

SEC3100 Gas Transmitter

Remote Relay Module

AIM Interface Module

Repeater

Approvals: CSA: C22.2 No 0, No 0.4-04, No 14-05, No 142
UL 508

Installation Category: Cat. I, Pollution Degree 2

II. GENERAL DESCRIPTION

CONVENTIONS

The following conventions are used in this manual.



Warning Statement



VDC (DC Voltage)

SEC 3500

The SEC3500 Operator Interface continuously interrogates up to 254 system devices over the 9600 baud RS485 Modbus Interface. The OI, operating as the Modbus Master, can communicate with any SEC3XXX Device and any 4-20 transmitter via the SEC3100AIM.

Network devices can be interrogated, configured, and calibrated using the password protected touchscreen user interface.

16 embedded programmable relays provide external device control/interface based on network events.

Additional relays can be located anywhere on the network (groups of 8).

The Statcast RS232 interface continuously scrolls through system operating status. (Read only for the user)

An Ethernet port allows remote access to system screens.



WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR SAFETY

III. OPERATION

The SEC3500 Operator Interface is an intuitive operator interface. For the individual page operations please refer to the following individual instruction manuals on the SEC website:

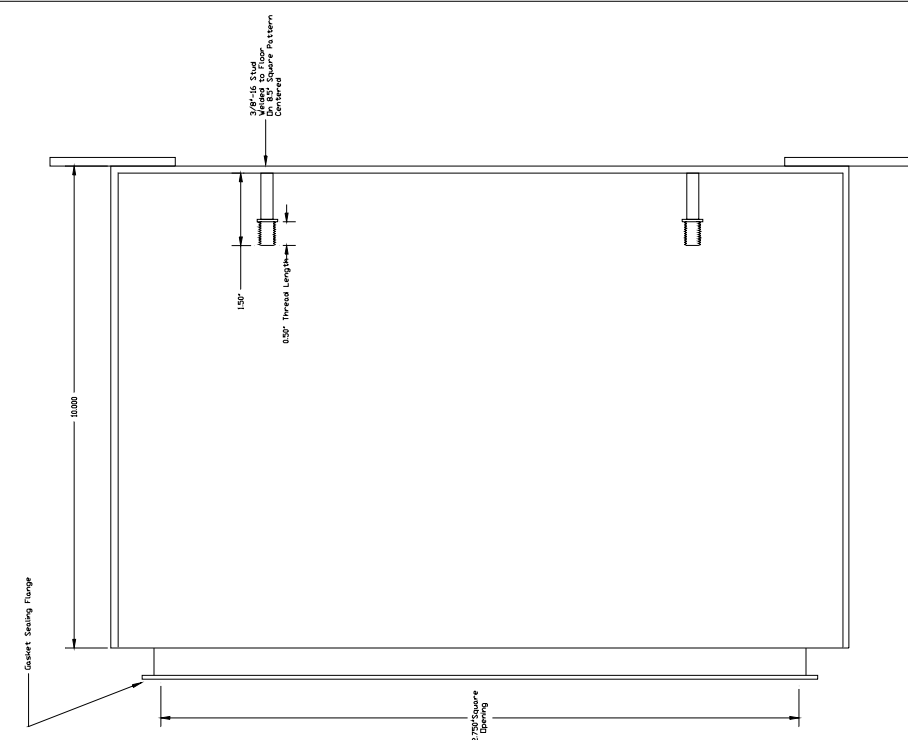
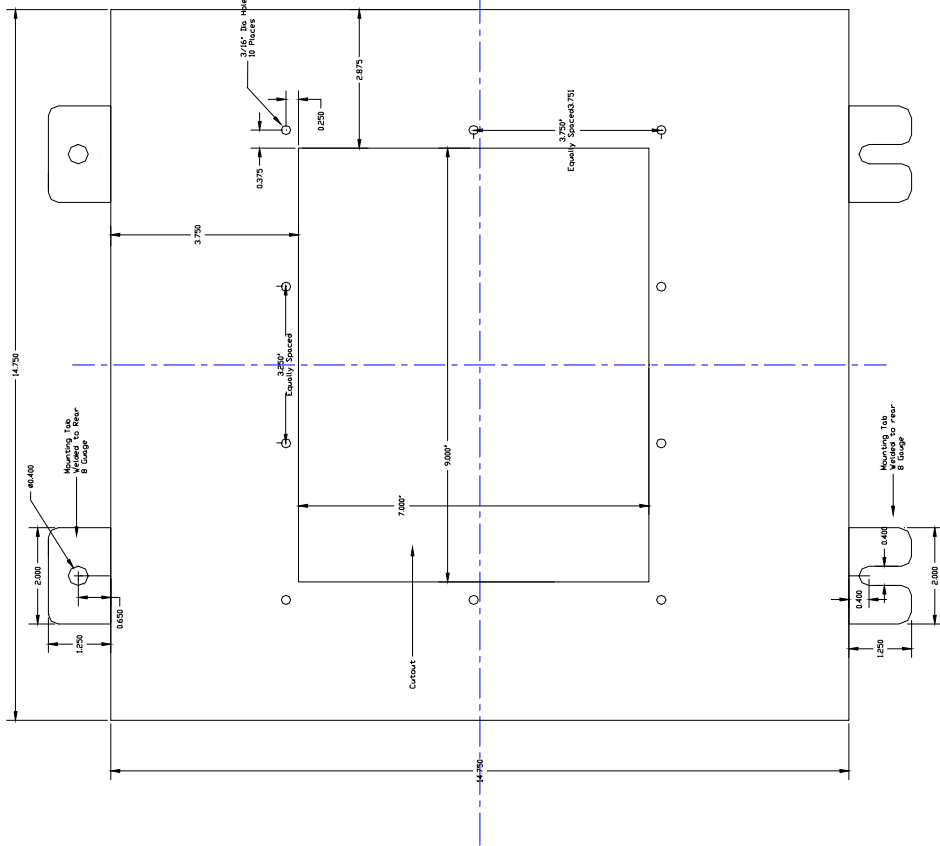
[3500 OI Basic Operators Guide.pdf](#)

[3500 OI Startup Basics Guide.pdf](#)

[StatCast.pdf](#)

IV. DRAWINGS

1421901	Mounting and dimensional drawing
350000016X16X10	Internal component layout
	Wiring Examples



- Notes
- 1) Finish: Steel, 14 Gauge, Unless Specified Otherwise
 - 2) Finish: Powder Coat, White
 - 3) Manufacturer: Delta
 - 4) Manufacturer: Delta
 - 5) Hidden Hinges
 - 6) Tolerance +/- .0025"

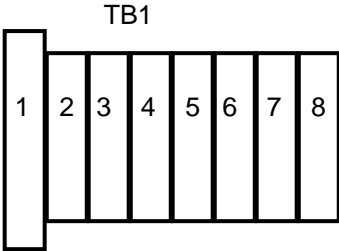


SENSOR ELECTRONICS CORP.
5500 LINCOLN DRIVE
MINNEAPOLIS, MINNESOTA
55436

SCALE: 2:1	DESIGN BY: FGS	REVISED BY:
DATE: 9/29/06	DRAWN BY:	APPROVED BY:
PGS: 10/4	BY: DATE:	REVISION:
06	CHKL:	A
RELEASED	REVISION	1421901
NI	SIZE: A	DRAWING NO. 1421901
		REVISION: A

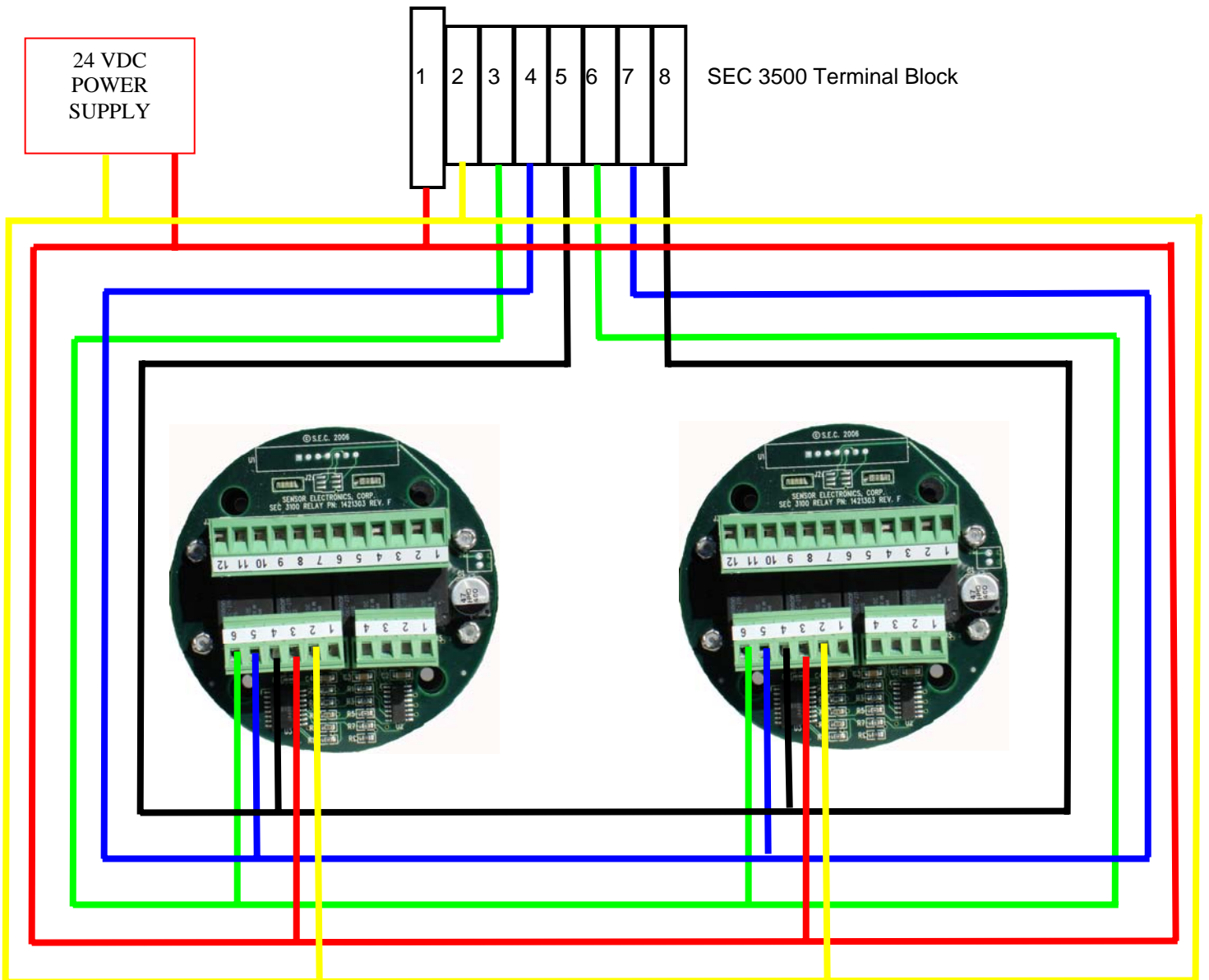
WIRING TERMINATION

The wiring diagram is for the input power to the SEC 3500 and RS485 Data Highway Connection.

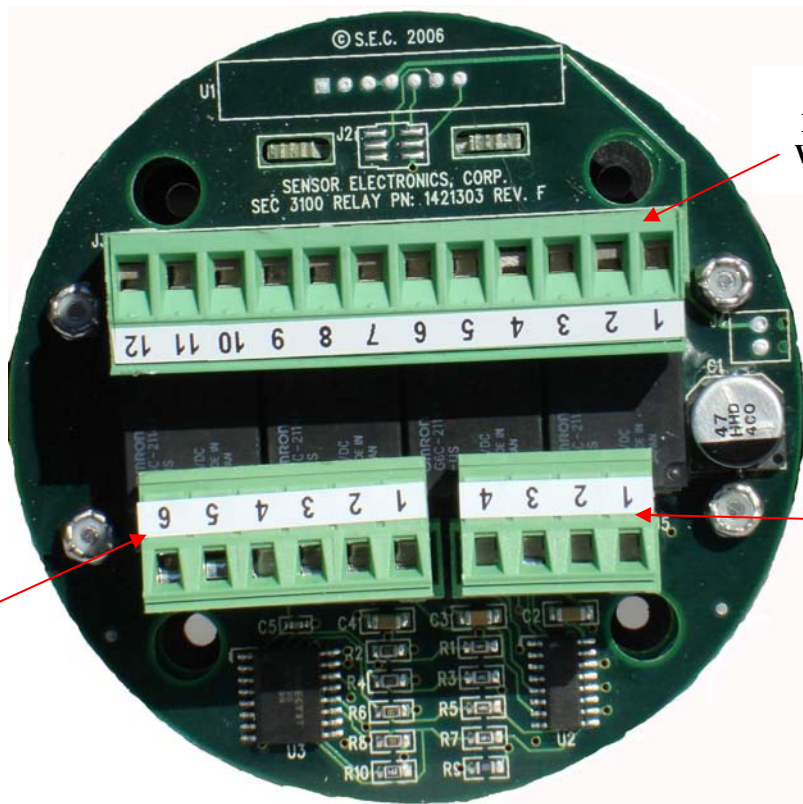


Enclosure Wall

Terminal	Description:
1	2 AMP Circuit Breaker Power for SEC 3500 only
2	DC Common
3	LAN Y DATA A
4	LAN Y DATA B
5	LAN Y ISOLATED DC COMMON
6	LAN X DATA A
7	LAN X DATA B
8	LAN X ISOLATED DC COMMON



**WIRING EXAMPLE:
SEC 3500 TO SEC 3100
TRANSMITTERS**



**TB 1
RELAY
WIRING**

**TB 3
SENSOR
WIRING**

**TB 2
POWER,
DATA HWY,
ANALOG
OUTPUT**

- TB 1**
- (12) LOW ALARM N.C.
 - (11) LOW ALARM COMMON
 - (10) LOW ALARM N.O.
 - (9) MID ALARM N.C.
 - (8) MID ALARM COMMON
 - (7) MID ALARM N.O.
 - (6) HIGH ALARM N.C.
 - (5) HIGH ALARM COMMON
 - (4) HIGH ALARM N.O.
 - (3) FAULT (N.E.) N.C.
 - (2) FAULT (N.E.) COMMON
 - (1) FAULT (N.E.) N.O.

- TB 2**
- (1) 4-20 mA ANALOG OUTPUT
 - (2) DC COMMON
 - (3) +24 VDC
 - (4) DATA ISO COMMON
 - (5) RS485 DATA B
 - (6) RS485 DATA A

- TB 3**
- (1) WHITE (DATA/CAL)
 - (2) BLUE OR GREEN (4-20 mA)
 - (3) RED (+24 VDC)
 - (4) BLACK (DC COMMON)

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BACK VIEW OF SEC 3100
SEC 3100 WIRING

TB 1 Relay Wiring

- 1 High Alarm N.C.
- 2 High Alarm Common
- 3 High Alarm N.O.
- 4 Fault N.O.
- 5 Fault Common
- 6 Fault N.C.

TB 2 Relay Wiring

- 1 Low Alarm N.C.
- 2 Low Alarm Common
- 3 Low Alarm N.O.
- 4 Mid Alarm N.C.
- 5 Mid Alarm Common
- 6 Mid Alarm N.O.



1 TB5 4 1 TB6 6

TB 5 Sensor Wiring

- 1 DC Common (Black)
- 2 + 24 VDC (Red)
- 3 4-20 mA (Blue or Green)
- 4 Communication (White)

TB 6 Power / Data Wiring

- 1 Data A
- 2 Data B
- 3 Iso-Common
- 4 + 24 VDC Input Power
- 5 DC Common
- 6 4-20 mA Output

Housing Dimensions

3.54 (W) x 4.17 (L) x 2.28 (H) inches
{90 (W) x 106 (L) x 58 (H) mm}