



Chemical Injection Technologies

Installation/Service Bulletin

SUPERIOR™ Gas Detector Series SLD Single & Dual Channel

This manual covers both single and dual channel SUPERIOR Gas Detectors, and applies to all gasses for which sensors are available. Some instructions apply only to Dual Channel (two sensors) MODEL SLD-2 detectors, and are so noted. **IMPORTANT NOTE:** *Chemical Injection Technologies, Inc. recommends the use of an UPS (Uninterruptible Power Supply) connected directly to the main AC power supply and then running the Series SLD Gas Detector directly from the UPS device. These devices are readily available wherever computers are sold. They offer complete functioning of all features in the event of power loss, as well as excellent power surge and lightning protection. An optional internal battery backup is available, but like all other similar types of instrumentation, these internal backup power supplies only allow limited functions, to conserve power, and do not offer any surge or lightning protection.*

TECHNICAL SPECIFICATIONS

Power supply: 115 or 230 VAC, 50/60 Hz, single phase (user selectable by internal switch)

Power consumption: 12 watts

Sensor Input: 4-20 mA DC, current loop

Loop voltage: 15 VDC, short circuit protected

Sensor output: 4-20 mA DC

Maximum load: 600Ω

Gas Sensors Available: chlorine, sulfur dioxide, ammonia, ozone

Relays:

Maximum current rating: 5 amps (resistive)

Maximum voltage: 250VAC/30VDC

Maximum Distance between controller & sensor(s): 1000 ft. (305 meters)

Operating temperature: 32°F to 122°F (0°C to 50°C)

Expected sensor operating life: Two years in air (decreases with exposure to measured gasses)

Models: SLD-1 = Single Channel
SLD-2 = Dual Channel

QUICK START GUIDE

INSTALLATION:

- 1). Mount the SUPERIOR Series SLD Controller/Monitor at eye level. Mount the sensor(s) 12" (30.5 cm) off the floor in the area(s) where the gas level is to be monitored. The SUPERIOR Series SLD is supplied with 25 ft. (7.6 meters) of 2-wire cable, for each sensor. Sensor(s) may be located up to 1000 ft. (305 meters) from the controller/monitor.
- 2). Standard cable(s) is attached at the factory. If it is necessary to disconnect a cable, in order to run through walls or conduit, etc., note the connections so they can be re-connected properly. If in doubt, consult the wiring and connection diagrams at the back of this manual.
- 3). Turn on AC power to the controller/monitor. On power-up, a two (2) minute delay is started to allow the sensor device(s) time to stabilize, which prevents false alarms. First, the countdown timer is

SENSOR STABILIZE 2:00
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displayed and then the main run screen is displayed.

- 4). The **MAIN RUN SCREEN** will display both channels if they are enabled in Model SLD-2, or just the single channel if the unit is Model SLD-1. Detector is ready to operate. To change or adjust options & settings, see the following:

1:Cl ₂	0.00 ppm
2:SO ₂	0.00ppm

(Model SLD-2 Shown)

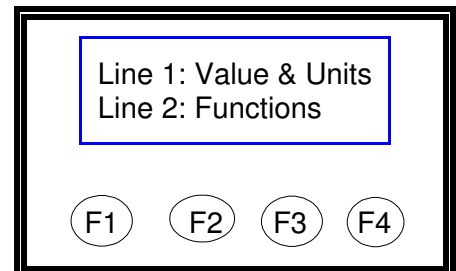
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SUPERIOR Series SLD Gas Detector OPERATION:

DISPLAYS:

The display is a backlit LCD (Liquid crystal display) consisting of two (2) lines each containing a maximum of sixteen (16) characters. The top line displays a selected value along with its engineering units. The bottom line normally provides function labels for the four (4) pushbuttons located below the functions. The functions are linked to the specific menu being displayed, and will vary depending on the necessary operator input. The push buttons are labeled F1, F2, F3, and F4.



MAIN MENU

- 1). Press any function button on the Main Run screen and immediately release. The MAIN MENU will appear for approximately four (4) seconds, and after 4 seconds the display will return to the main run screen. You may push any of the function buttons again if the MAIN MENU screen reverts to the main run screen before you choose one of the function buttons.

MAIN MENU
ALM LOG TEST CFG

- ALM** = Allows operator to set both the low level (Warning) and high level (Danger) alarm set points, for each channel. The alarm set points are password protected. Factory default settings are: DANGER = 1 PPM, WARNING = 3 PPM.
- LOG** = Allows operator to view the EVENT LOG which records each time the gas level goes above a set point. It will also log any accesses to the CALIBRATION/PARAMETER programs if changes are made. Up to 256 events can be logged. Events cannot be cleared.
- TEST** = Energizes all relays to test the alarm devices.
- CFG** = Allows operator, with password access, to calibrate the sensor inputs, and the monitor analog outputs. It also allows access to the program parameters and “real time” clock time & date settings.

F1	ALM	Go to ALARM: SELECT CHANNEL MENU
F2	LOG	Go to PRESS PUSHBUTTON TO VIEW LOG menu
F3	TEST	ALL RELAYS ENERGIZED
F4	CFG	Go to CALIBRATION/CONFIGURATION MENU (CAL/CFG)

ALARM: SELECT CHANNEL MENU

1). NOTE: On Model SLD-1 Single Channel Gas Detector, the screen will automatically default to the SELECT ALARM menu for Channel 1. For Model SLD-1, skip the table below and proceed directly to the CH1 SELECT ALARM MENU table.

ALM: SELECT CHAN
CH1 CH2 ESC

F1	CH1	Go to CH1 SELECT ALARM MENU
F2	CH2	Go to CH2 SELECT ALARM MENU
F3		
F4	ESC	Go back to ALARM SELECT CHANNEL MENU

CH1 SELECT ALARM MENU:

Select either the WARNING (Low Level) or DANGER (High Level) alarm Set Points to be adjusted. After you choose either WARN or DNGR, the actual SET POINT menu will open. Push the UP or DWN function keys to change to respective alarm set point. When the set point shown is correct, press ENT to return to the CH1 SELECT ALARM MENU.

CH1 SELECT ALARM
WARN DNGR ESC

F1	WARN	Go to CH1 WARNsp Menu
F2		
F3	DNGR	Go to CH1 DNGRsp Menu
F4	ESC	Go back to ALARM: SELECT CHANNEL menu

CH2 SELECT ALARM MENU: (MODEL SLD-2 ONLY)
SAME AS CHANNEL 1 SELECT ALARM MENU, ABOVE.

NOTE: To exit the ALARM SETTINGS area, press ESC until you return to the MAIN RUN SCREEN.

EVENT LOG

When the LOG function key (F2) is pressed on the Main Menu, the PRESS PB TO VIEW menu displays:

PRESS PB TO VIEW
UP↑ DWN↓ ESC

PRESS PB TO VIEW, MENU:

Up to 256 Events are logged and can be viewed on the display. All alarm conditions, sensor failure, loss of sensor signal, and calibration/parameter accesses will be logged, with time and date. Pressing the UP or DWN function keys will take you to the most recent or earliest event in the log, respectively. Pressing the F4 function key will take you back to the MAIN RUN SCREEN.

10 / 05 / 05 09:36am
CH1 WARNING ACT

TEST

Pressing the TEST menu choice from the MAIN MENU will energize all relays, in order to test the functioning of lights, horns, or any other signaling devices connected to the Gas Detector. This will NOT check any of the sensor circuits, and is not intended, in any way, to test either the ability of the sensor to detect a gas, nor to check the sensor output level.

CALIBRATION & CONFIGURATION

From the MAIN MENU press the CFG function key (F4). This will open the CAL/CFG MENU.

CAL/CFG MENU
CAL PARM T&D ESC

F1	CAL	Press CAL to enter a password screen, then to the CALIBRATE MENU.
F2	PARM	Press Parm to enter a password screen, then to the Set Parameters area.
F3	T&D	Press T&D to set the Time and Date for the system.
F4	ESC	Press ESC to enter a SET CAL/CFG PASSWORD screen.

CALIBRATION:

*NOTE: To calibrate the Series SLD Gas Detector, you will need test instruments and a knowledge of instrumentation test procedures. A device generating a 4-20mA signal output is required to calibrate the analog input, and a Digital Multi-Meter (DMM) is required to calibrate analog output signals. SEE SUPERIOR SERIES SLD WIRING DIAGRAMS AT THE BACK OF THIS MANUAL AND WIRE THE 4-20mA SIGNAL GENERATOR AS SHOWN FOR "CALIBRATOR WIRING". **THE SENSOR SHOULD NOT BE CONNECTED TO THE INPUT TERMINALS WHILE PERFORMING THIS CALIBRATION.***

CALIBRATE MENU:

From the CAL/CFG MENU press CAL function key (F1) and you will be prompted to enter a password (default is 0000). Use the UP and DWN keys to change the value of the first digit, then press the NXT key to move to the next digit. After you have entered the last correct digit, press NXT to enter the CALIBRATE MENU. Pressing ESC will take you back to the CAL/CFG MENU.

PASSWORD 0 ★ ★ ★
UP↑ DWN↓ ESC NXT

CALIBRATE MENU
IN OUT ESC

F1	IN	Go to CALIBRATE INPUTS menu
F2	OUT	Go to CALIBRATE OUTPUTS menu
F3		
F4	ESC	Return to the CALIBRATE MENU

CALIBRATE INPUTS MENU:

From the CALIBRATE MENU screen Press the IN (F1) key. The CAL INPUTS menu appears. Choose Channel 1 or Channel 2 (SLD-2 Only).

CAL INPUTS
CH1 CH2 ESC

F1	CH1	Set Channel 1 ZERO and SPAN.
F2	CH2	Set Channel 2 ZERO and SPAN (Model SLD-2 Only).
F3		
F4	ESC	Return to CALIBRATE MENU.

CALIBRATE ANALOG INPUT CH1 SCREEN:

With the 4-20mA signal generating device wired as shown in the wiring diagram at the back of this manual under CALIBRATOR WIRING, the current analog input is displayed in the top right of the screen. Calibrate the zero and full scale value.

CH1	X . X X ppm
ZRO SPAN	ESC

CALIBRATE ANALOG INPUT CH2 SCREEN: (Model SLD-2 Only)

Repeat procedure shown above for Channel 1.

CALIBRATE OUTPUTS MENU:

From the CALIBRATE MENU screen Press the OUT (F2) key. The CAL OUTPUTS menu appears. Choose Channel 1 or Channel 2 (SLD-2 Only).

CAL OUTPUTS	
CH1 CH2	ESC

F1	CH1	Set Channel 1, 4mA & 20 mA analog output.
F2	CH2	Set Channel 1, 4mA & 20 mA analog output (Model SLD-2 Only).
F3		
F4	ESC	Return to CALIBRATE MENU.

CALIBRATE ANALOG OUTPUT CH1 SCREEN : (NOTE: procedure is identical for Channel 2, on Model SLD-2 only.)

A Digital Multi-Meter (DMM) is required to proceed with calibration. Attach a DMM as shown in the wiring diagram at the back of this manual, under "CH1 OUTPUT LOAD". Press the function key under 4mA or 20mA to enter setup screen.

CH1 OUTPUT CAL
4mA 20mA ESC

F1	4mA	Press to enter 4mA output setup screen
F2	20mA	Press to enter 20mA output setup screen
F3		
F4	ESC	Return to CAL OUTPUTS menu

SET 4 mA ANALOG OUTPUT:

Press the 4mA function key (F1) on the Channel 1 or 2 OUTPUT CAL screen. The 4mA ADJUST screen for that channel will open. With the DMM attached, and the range set for mA including 4 - 20 mA, adjust the reading on the DMM using the UP or DWN keys until it reads 4mA. Then press the ENT (F4) key. Press the key under ENT (F4) to enetr the new value and return to the analog output calibration screen.

CH1 OUT 4mA ADJ
UP↑ DWN↓

F1	UP	Press to drive analog output up. View on DMM.
F2	DWN	Press to drive analog output down. View on DMM.
F3		
F4	ENT	Press ENT to set the new value and return to the CH1 (or2) OUTPUT CAL screen.

SET 20 mA ANALOG OUTPUT:

Press the 20mA function key (F1) on the Channel 1 or 2 OUTPUT CAL screen. The 20mA ADJUST screen for that channel will open. With the DMM attached, and the range set for mA including 4 - 20 mA, adjust the reading on the DMM using the UP or DWN keys until it reads 20mA. Then press the ENT (F4) key. Press the key under ENT (F4) to enter the new value and return to the analog output calibration screen.

CH1 OUT 20mA ADJ
UP↑ DWN↓

F1	UP	Press to drive analog output up. View on DMM.
F2	DWN	Press to drive analog output down. View on DMM.
F3		
F4	ENT	Press ENT to set the new value and return to the CH1 (or2) OUTPUT CAL screen.

SET PARAMETERS (PARM):

From the CAL/CFG MENU, press the PARM function key (F2). If you have not previously entered the password from the CAL/CFG MENU, you will be prompted to enter a password (default is 0000). Use the UP and DWN keys to change the value of the first digit, then press the NXT key to move to the next digit. After you have entered the last correct digit, press NXT to enter the series of Parameters screens.. Pressing ESC will take you back to the CAL/CFG MENU. The first Parameter screen that will display is the **CH1 SENSOR:** Gas Choice menu. All Parameter Settings menus contain an UP and DWN function key choice. These allow you to scroll through the various parameters. When you press the PARM key and enter the password, you are always taken directly to the CH1 SENSOR: selection screen. Press the NX↑ (Next) key to scroll forward through the menus, and the LST↓ (Last) key to scroll back to the previous menu. Pressing the ESC function key (F4) from any Parameter menu will exit back to the CAL/CFG MENU screen.

CAL/CFG MENU
CAL PARM T&D ESC

SET CHANNEL 1 GAS SENSOR TYPE:

If you wish to change the type of Gas Sensor attached to the Channel 1 Input, press the ADJ function key (F3): This will open the Channel 1 Gas Sensor choice sub-menu. Using the UP or DWN function keys, you can scroll through the Gas Sensor Types which are supported by the Series SLD. You must choose a sensor gas which matches the the sensor connected to the Channel 1 input terminals.

CH1 SENSOR:	Cl₂
NX↑ LST↓ ADJ ESC	

CH1 SENSOR:	Cl₂
UP↑ DWN↓ ENT	

F1	UP	Press to scroll up through the gas sensor types: Cl ₂ , SO ₂ , NH ₃ , O ₃
F2	DWN	Press to scroll down through the gas sensor types: Cl ₂ , SO ₂ , NH ₃ , O ₃
F3		
F4	ENT	Press ENT to enter the new value and return to the CH1 SENSOR type menu.

SET CHANNEL 1 RANGE:

From the CH1 SENSOR type menu, press NX↑ function key (F1). The Set Range menu displays. Press ADJ function key (F3) to change the Sensor Range. The Range choice sub-menu opens. Select the sensor range, in PPM (mg/l) using the UP or DWN keys.

- **This should match the sensor exactly to ensure a stable display.**
- This also limits the alarm set points.
- The sensor can be calibrated to any value at or below this setting.

CH1 RANGE:	10
NX↑ LST↓ ADJ ESC	

CH1 RANGE:	10
UP↑ DWN↓ ENT	

F1	UP	Press to increase setting.
F2	DWN	Press to decrease the setting
F3		
F4	ENT	Press ENT to enter the new value and return to the CH1 RANGE menu.

SET CH1 ANALOG OUTPUT FULL SCALE (AOFS):

From the CH1 RANGE menu, press NX↑ function key (F1). The CH1 AOFS: menu displays. This sets the concentration in PPM (mg/l) that represents a 20mA analog output. An analog output of 4mA is always zero (0) PPM (mg/l). Press ADJ function key to change the AOFS setting. The AOFS choice sub-menu opens. Select the AOFS using the UP or DWN keys.

CH1 AOFS:	10.00
NX↑ LST↓ ADJ ESC	

CH1 AOFS:	10.00
UP↑ DWN↓ ESC	

F1	UP	Press to increase setting.
F2	DWN	Press to decrease setting.
F3		
F4	ENT	Press ENT to enter the new value and return to the CH1 AOFS menu

SET CHANNEL 2 GAS SENSOR TYPE: *Model SLD-2 Only*
 SEE CHANNEL 1 INSTRUCTIONS, ABOVE. YOU MAY CHOOSE THE SAME OR A DIFFERENT GAS SENSOR TYPE AS CHANNEL 1.

CH2 SENSOR:	SO ₂
NX↑ LST↓ ADJ ESC	

SET CHANNEL 2 RANGE: *Model SLD-2 Only*
 SEE CHANNEL 1 INSTRUCTIONS, ABOVE.

CH2 RANGE:	10
NX↑ LST↓ ADJ ESC	

SET CH2 ANALOG OUTPUT FULL SCALE (AOFS): *Model SLD-2 Only*
 SEE CHANNEL 1 INSTRUCTIONS, ABOVE.

CH2 AOFS:	10.00
NX↑ LST↓ ADJ ESC	

SET WARNING RELAY OPERATION (K1 & K3 Terminals)
 Scroll through the Parameter settings menus to the WARN RLY: menu. This parameter sets the warning relay (low level) operation. You may choose a number of “Energized” and De-Energized” criteria for the relay. If you are not familiar with electronic control circuits, we recommend that you do not change the setting from the default “OFF/ACK”. Press the ADJ function key (F3) to change the setting. Using the UP & DWN keys, scroll through the choices as shown in the table below:

WARN RELAY: OFF/ACK
NX↑ LST↓ ADJ ESC

WARN RELAY: OFF/ACK
UP↑ DWN↓ ENT

RELAY SETTING	RELAY ENERGIZED	RELAY DE-ENERGIZED
OFF/ACK (Default)	INPUT >= SP	INPUT < SP OR Acknowledged by USER
ON/ACK	INPUT >= SP	INPUT < SP - When the user acknowledges the alarm condition, any noise or visual alarms attached to the Warning relay are silenced but the relay remains energized until the alarm condition no longer exists.
NO ACK	INPUT >= SP	INPUT < SP NOTE: attached alarms are not sounded for active set point conditions.
LATCH	INPUT >= SP	User must acknowledge or clear the alarm to de-energize the contacts.
OFF	NEVER	Always

SET WARNING RELAY POLARITY (N/C OR N/O):
 Scroll through the Parameter settings menus to the WARN RLY POL: menu. This parameter sets the polarity of the warning relay to either Normally Open (N/O) or Normally Closed (N/C). Press the ADJ function key (F3) to change the setting. Press the UP or DWN keys to toggle between N/O and N/C. The default setting is N/O.

WARN RLY POL: N/C
NX↑ LST↓ ADJ ESC

WARN RLY POL: N/C
UP↑ DWN↓ ENT

SET WARNING RELAY DELAY:
 Scroll through the Parameter settings menus to the WARN DLY: menu. This value, in seconds, sets the time the warning alarm condition must be detected before it is indicated on the display and the warning relay is activated. It is set in one (1) second increments. The default setting is zero (0) seconds. Press the ADJ function key (F3) to change the setting. Press the UP or DWN keys to increase or decrease the delay seconds.

WARN DLY:	0
NX↑ LST↓ ADJ ESC	

WARN DLY:	0
UP↑ DWN↓ ENT	

SET DANGER RELAY OPERATION (K2 & K4 terminlas)

Scroll through the Parameter settings menus to the DNGR RLY: menu. This parameter sets the danger relay (high level) operation. You may choose a number of “Energized” and De-Energized” criteria for the relay. If you are not familiar with electronic control circuits, we recommend that you do not change the setting from the default “OFF/ACK”. Press the ADJ function key (F3) to change the setting. Using the UP & DWN keys, scroll through the choices as shown in the table below:

DNGR RELAY: OFF/ACK NX↑ LST↓ ADJ ESC
DNGR RELAY: OFF/ACK UP↑ DWN↓ ENT

RELAY SETTING	RELAY ENERGIZED	RELAY DE-ENERGIZED
OFF/ACK (Default)	INPUT>=SP	INPUT < SP <i>OR</i> Acknowledged by USER
ON/ACK	INPUT>=SP	INPUT < SP - When the user acknowledges the alarm condition, any noise or visual alarms attached to the Warning relay are silenced but the relay remains energized until the alarm condition no longer exists.
NO ACK	INPUT>=SP	INPUT < SP NOTE: attached alarms are not sounded for active set point conditions.
LATCH	INPUT>=SP	User must acknowledge or clear the alarm to de-energize the contacts.
OFF	NEVER	Always

SET DANGER RELAY POLARITY (N/C OR N/O):

Scroll through the Parameter settings menus to the DNGR RLY POL: menu. This parameter sets the polarity of the danger relay to either Normally Open (N/O) or Normally Closed (N/C). Press the ADJ function key (F3) to change the setting. Press the UP or DWN keys to toggle between N/O and N/C. The default setting is N/O.

DNGR RLY POL: N/C NX↑ LST↓ ADJ ESC
DNGR RLY POL: N/C UP↑ DWN↓ ENT

SET DANGER RELAY DELAY:

Scroll through the Parameter settings menus to the DNGR DLY: menu. This value, in seconds, sets the time the danger alarm condition must be detected before it is indicated on the display and the danger relay is activated. It is set in one (1) second increments. The default setting is zero (0) seconds. Press the ADJ function key (F3) to change the setting. Press the UP or DWN keys to increase or decrease the delay seconds.

DNGR DLY: 0 NX↑ LST↓ ADJ ESC
DNGR DLY: 0 UP↑ DWN↓ ENT

EXITING THE CALIBRATION/CONFIGURATION SECTION

Pressing the ESC key from the various menus in this section will take you back to the CAL/CFG MENU. If you previously entered the CALIBRATION or PARAMETERS sections and you press the ESC key (F4) from the CAL/CFG menu, you will be asked if you wish to change the password.. The SET CFG/CAL PW? screen will display. Pressing the NO key (F4) will exit back to the **MAIN RUN SCREEN**. If you press the YES key (F3), you will be asked to enter a new password. After entering the new password, you will exit back to the **MAIN RUN SCREEN**.

SET CFG/CAL PW? YES NO

OPTIONS

IMPORTANT NOTE: The options section contains settings and choices that rarely need to be changed. There are no visible screens or menu choices that will prompt you to enter the **OPTIONS** Section. To enter the **OPTIONS** Section, the **MAIN RUN SCREEN** must be displayed. Press and **HOLD** the **F4** key for at least four (4) seconds. A password screen will display. Enter the password, as previously instructed. The following screens will appear, and you may scroll from one setting menu to the next using the **NX↑ (F1)** or **LST↓ (F2)** function keys:

SET THE SCREEN LANGUAGE:

Currently, the menus are available in both **ENGLISH** and **FRENCH**. From the **LANGUAGE:** screen, press the **ADJ** function key (**F3**) to change this setting. When the screen containing **UP** and **DWN** key choices is displayed, you may toggle between the available languages using those keys. Press **ENT** when the language you wish to choose is displayed.

LANGUAGE: ENGLISH NX↑ LST↓ ADJ ESC

ENABLE THE INTERNAL BATTERY OPTION:

If your Series SLD Gas Detector was supplied with the **INTERNAL BATTERY** Option installed, you may toggle this backup battery function **ON (YES)** or **OFF (NO)**. If your Series SLD does not have an internal battery backup installed, do not set this option to “**YES**”.

BATTERY: NO NX↑ LST↓ ADJ ESC

POWER DOWN - WHEN ON BATTERY POWER

If your Series SLD Gas Detector was supplied with the **INTERNAL BATTERY** Option installed, you may toggle this **OPTION** on OR off. When **ON**, this parameter permits you to power down the detector by pressing and holding the **F2** button when it is running on backup battery power. The message “**POWER DOWN**” is displayed for a few seconds before the detector is turned off. If there is a problem with the hardware (battery backup option not installed, or batteries not attached), the message “**HARDWARE FAULT - POWER DOWN CKT**” is displayed. To power up the detector on battery power, press and hold the **F1** button for greater than two seconds and release.

POWER DOWN: YES NX↑ LST↓ ADJ ESC

ENABLE THE REMOTE ACKNOWLEDGMENT:

Your Series SLD Gas Detector was supplied with a **REMOTE ACKNOWLEDGMENT** feature. You will be able to connect an external, remote, momentary contact button to the terminal connections marked **SW IN** and **COM**. From the **REMOTE ACK:** screen press the **ADJ** function key (**F3**) to toggle this **REMOTE ACKNOWLEDGMENT** Option between **YES** or **NO**. If the **REMOTE ACKNOWLEDGMENT** option is not installed, changing this setting will not make any change in the operation.

REMOTE ACK: NO NX↑ LST↓ ADJ ESC
--

ENABLE THE FLASHING BACKLIGHT FOR ALARM ACKNOWLEDGMENT SCREEN:

Scroll to the **FLASH ACK:** screen. This setting allows the backlight to **FLASH** when the alarm acknowledgment screen is displayed. **FROM** the **FLASH ACK:** screen press the **ADJ** function key (**F3**) to toggle between **YES** or **NO**. Default setting is **YES**.

FLASH ACK: YES NX↑ LST↓ ADJ ESC
--

DISABLE THE INTERNAL BUZZER:

Scroll to the **BUZZER:** screen. This setting enables or disables the local alarm buzzer. From the **BUZZER:** screen press the **ADJ** function key (**F3**) to toggle between **OFF** or **ON**.

BUZZER: OFF NX↑ LST↓ ADJ ESC

ENABLE EVENT LOGGING:

Scroll to the LOG: screen. This setting enables or disables alarm/event logging. It is recommended that the default ON setting be allowed. From the LOG: screen press the ADJ function key (F3) to toggle between YES or NO. Default setting is YES.

LOG: ON
NX↑ LST↓ ADJ ESC

ENABLE THE SENSOR LIFE TIMER:

Scroll to the SENSOR LIFE: screen. This setting enables or disables a two (2) year timer that will alert the operator that it is time to change the gas sensor. This relies on the time & date function to be set properly. Sensors should be replaced every two (2) years - A warning screen will appear if this function is enabled, to alert the operator that it is time to change the sensor. It will appear only once until the instrument is powered again. When the user enters the channel input calibration screen, he/she is prompted to answer Y/N if the sensor is new. From the SENSOR LIFE: screen press the ADJ function key (F3) to toggle between YES or NO. Default setting is NO.

SENSOR LIFE:
NX↑ LST↓ ADJ ESC

SET THE CALENDAR REMINDER:

Scroll to the CAL REMINDER: screen. This setting allows you set a number of days to alert the user that the sensor should be checked and/or calibrated. This is strictly for user convenience and does not affect operation in any way. From the CAL REMINDER: screen press the ADJ function key (F3) to change the setting. Press the UP or DWN keys to scroll through the choices of number of days. The settings available are: OFF, 31, 62, 92, 183, or 365. Default setting is OFF.

CAL REMINDER: OFF
NX↑ LST↓ ADJ ESC

EXITING THE OPTIONS SECTION

Pressing the ESC key from the various menus in this section WILL START THE EXIT PROCESS. If you have changed any settings, you will be prompted to SAVE CHANGES. If you see the SAVE CHANGES screen, press YES to save or NO to return all settings to the previous condition. If you have not made any changes, the SAVE CHANGES screen will not display. A SET OPTIONS PW (Password) screen will display prompting you to set a new password if desired.

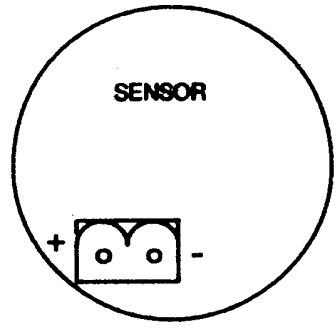
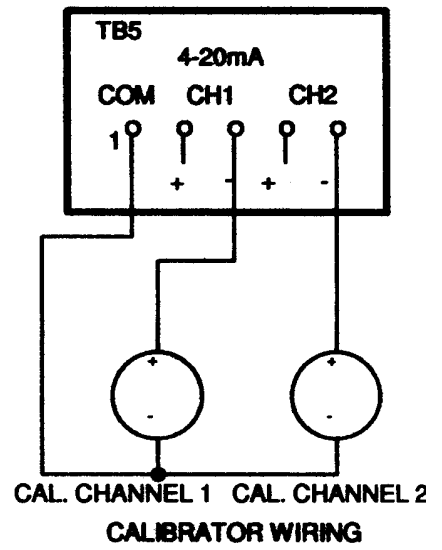
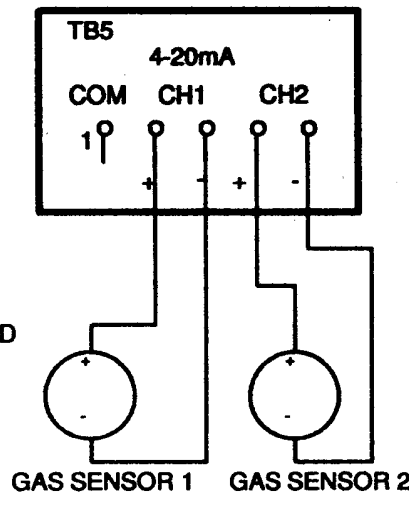
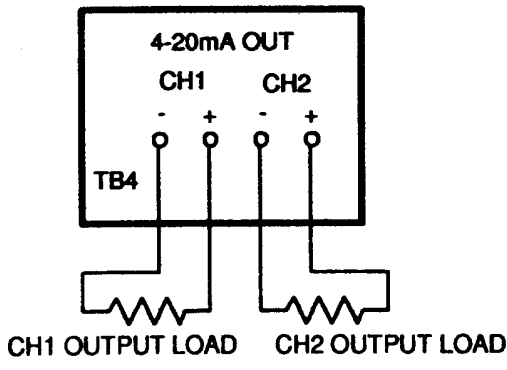
ERROR MESSAGES

K6 ALARM RELAY

The K6 alarm relay (see wiring diagram on Page 11) will energize when any of the following Error Messages are displayed:

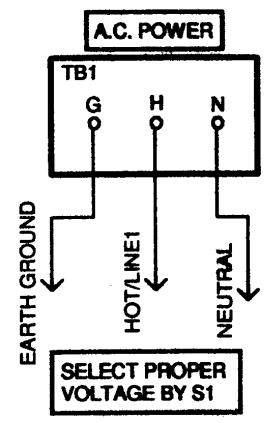
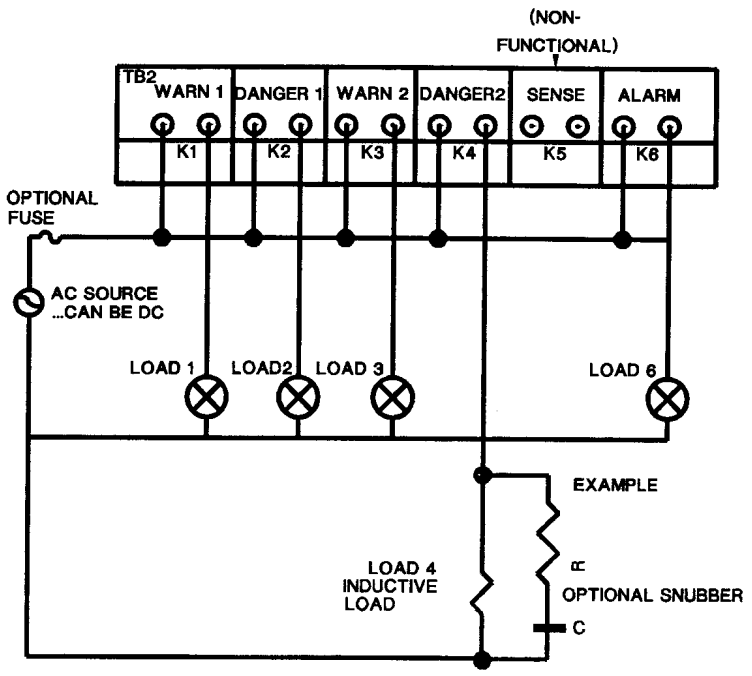
ERROR MESSAGE	PROBLEM
SENSOR SHORT	Sensor leads are shorted or the sensor is possibly reversed.
BATT REV / SHORT	Battery is reversed or the wires are shorted together.
BATTERY LOW	Battery energy is low.
BATTERY DEAD	Battery energy is completely drained.
BATTERY MISSING	Battery option is enabled but no battery is being detected.
HARDWARE FAULT- POWER DOWN CKT	Battery backup optional circuitry is not installed, but "POWER DOWN" and "BATTERY" options are enabled.

NOTE: The K5 relay terminal is non-functional; reserved for future design use.

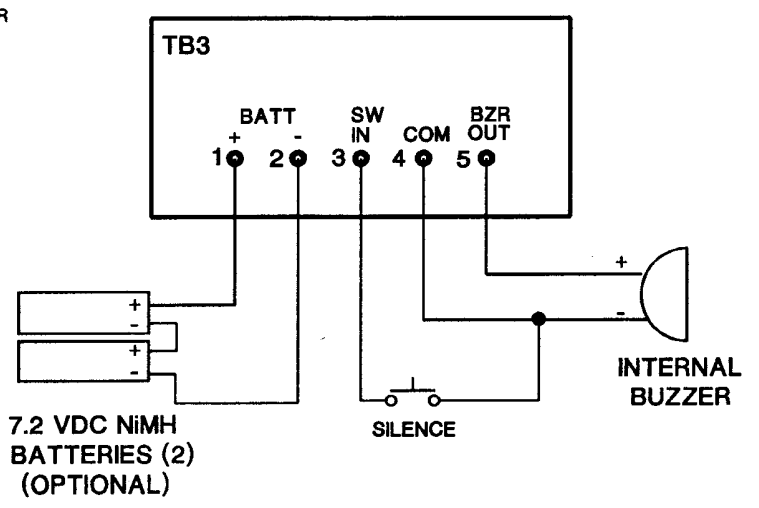


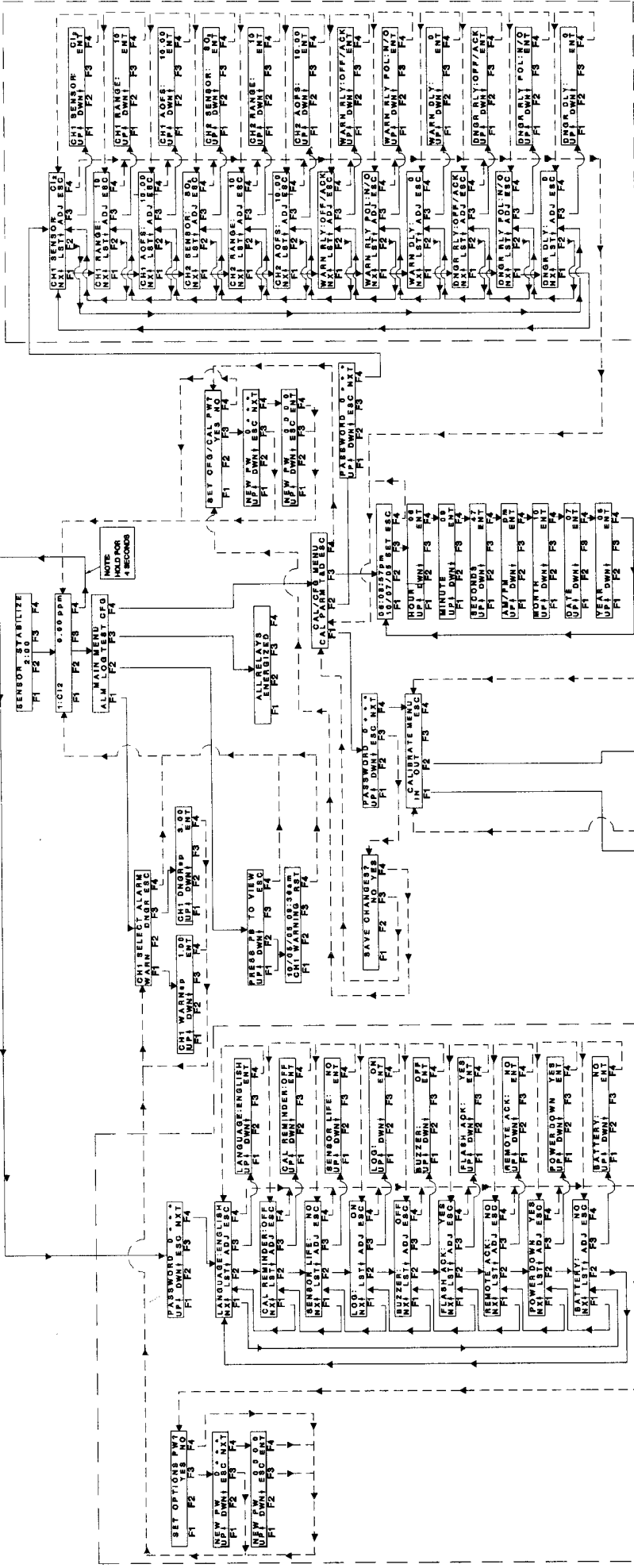
SENSOR WIRING

CALIBRATOR WIRING



BATTERY, SWITCH & INTERNAL BUZZER CONNECTIONS



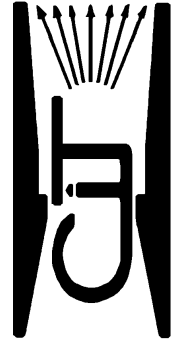


PARAMETER SETTINGS SECTION

OPTIONS SECTION

CALIBRATION SECTION

VER 1.30



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