

TS-STS Overview

The TS-STS system includes a TS-STS console within a convenient portable case, leak testing probes with 50 feet of cable, and probe hanging hardware (slip rings and chain).

After all fittings within the sump are sealed, the sump is filled with a water-based test solution that covers all sump penetration holes. The probe is installed so the float is floating on the surface of the test solution. The TS-STS console is quickly programmed with the site name and address, number of sumps, the 7-digit code-names for each sump, and the correct Time/Day/Date before leak testing.

Pressing the **Test** key at the console keypad starts sump leak tests for all sumps. The test time is 15 minutes and tests for a level change greater than 0.002 inches. If the level of a sump drops more than the leak limit during the test, the Sump Leak Test Report will show a fail result when the test is finished. Leak tests can also be programmed (scheduled) to start at desired times.

When finished, leak test reports will automatically print out at the console printer. Extra copies of this report can be printed using the report key. A newly completed Sump Leak Test will overwrite the previous results stored in memory. Save sump leak test reports and provide copies as evidence of compliance with regulations.



Recommendation: Use a computer and the Tech version of System Sentinel™ to record site data, sump code-names, and test results. Test results can also be extracted from Comm Port 1 at the bottom of the TS-STS console (also see Section 4).

Reference Federal and State regulations for leak limit and test time requirements. Recommendations for locating the TS-STS console outside of the (Class I, Division 1, Group D) Hazardous Areas during testing, are based on NFPA 30, NFPA 30A and NFPA 70 (NEC).

1 TS-STS Installation

1.) Required Materials:

- a.) Tape to secure the probe cable
- b.) Safety cones & signs
- c.) Grounded, 3-pronged extension cord
- d.) Flat pieces of metal to suspend leak testing probe over sumps

2.) Work safely — install Safety Cones and Signs at the site

3.) The probes are precision instruments — handle with care!

4.) The STS probes are shipped with cables attached, do not remove the cable from the probe end... remove at the console case **only**.

5.) Inspect probes for proper float movement before use, then install probes as shown in Section 1

6.) Connect the yellow probe cables to the receptacles at the TS-STS case. *Make sure to line up keyways before inserting cable and tightening the screw-on connector.*

7.) Locate the TS-STS case outside of the Hazardous Area and tape the cable down to prevent probe movement during the test and to reduce tripping hazards

8.) Setup / Program the TS-STS console per Section 2

9.) Start sump leak test(s) on sumps that are ready

10.) Always clean, dry, and store probes in the probe carrying case after each use

11.) Test each of the probes on a monthly basis to ensure its ability to detect leaks. Install the probe in a test container and initiate a test. After 5 minutes, remove about 0.12 inches of water. When the test completes, the test report should show a **Failed** result if the probe is working properly.

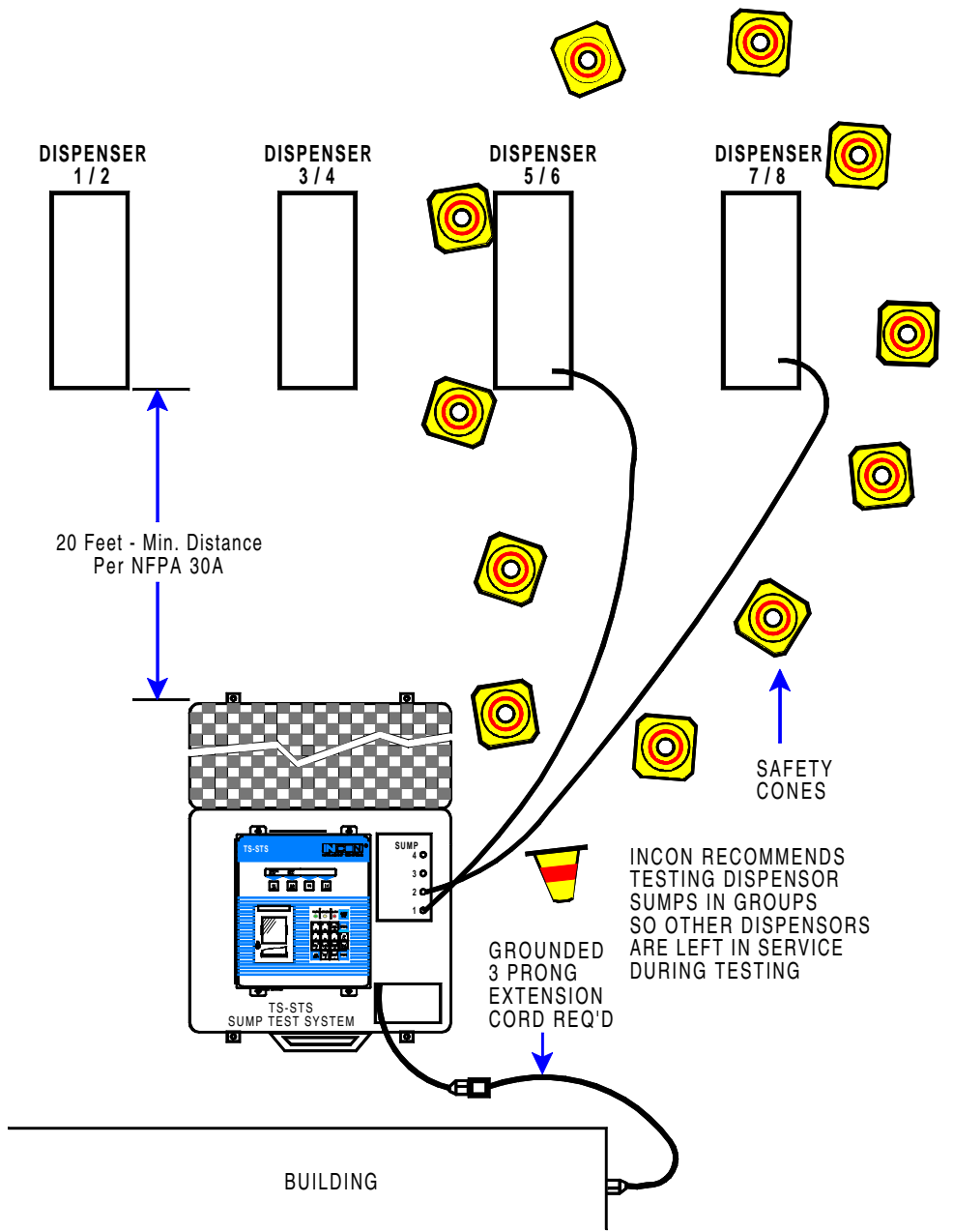


Figure 1.1 Typical Leak Detection Probe – Dispenser Sump Installation Overview

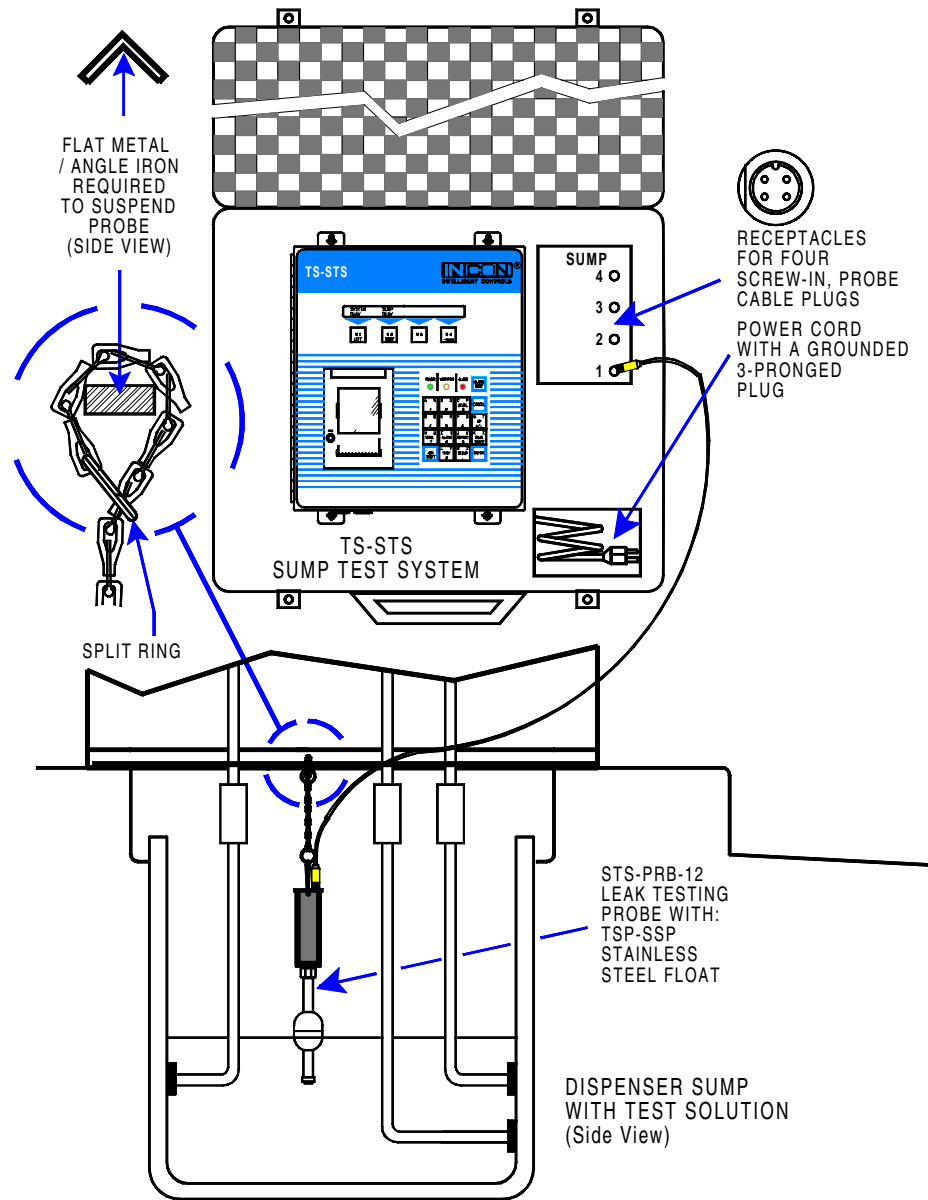


Figure 1.2 Leak Detection Probe Installation Dispenser Sump

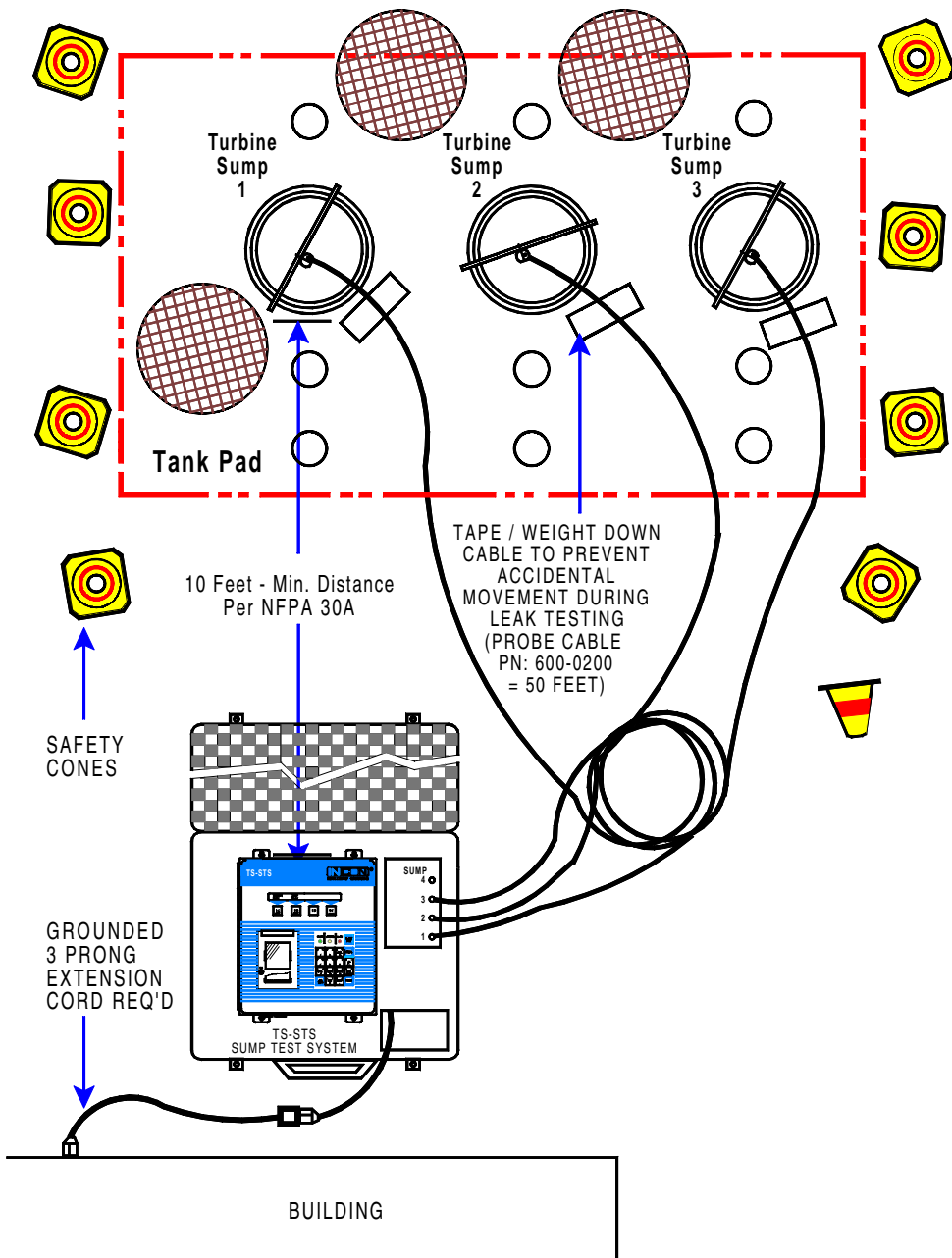


Figure 1.3 Typical Leak Detection Probe – Turbine Sump Installation Overview

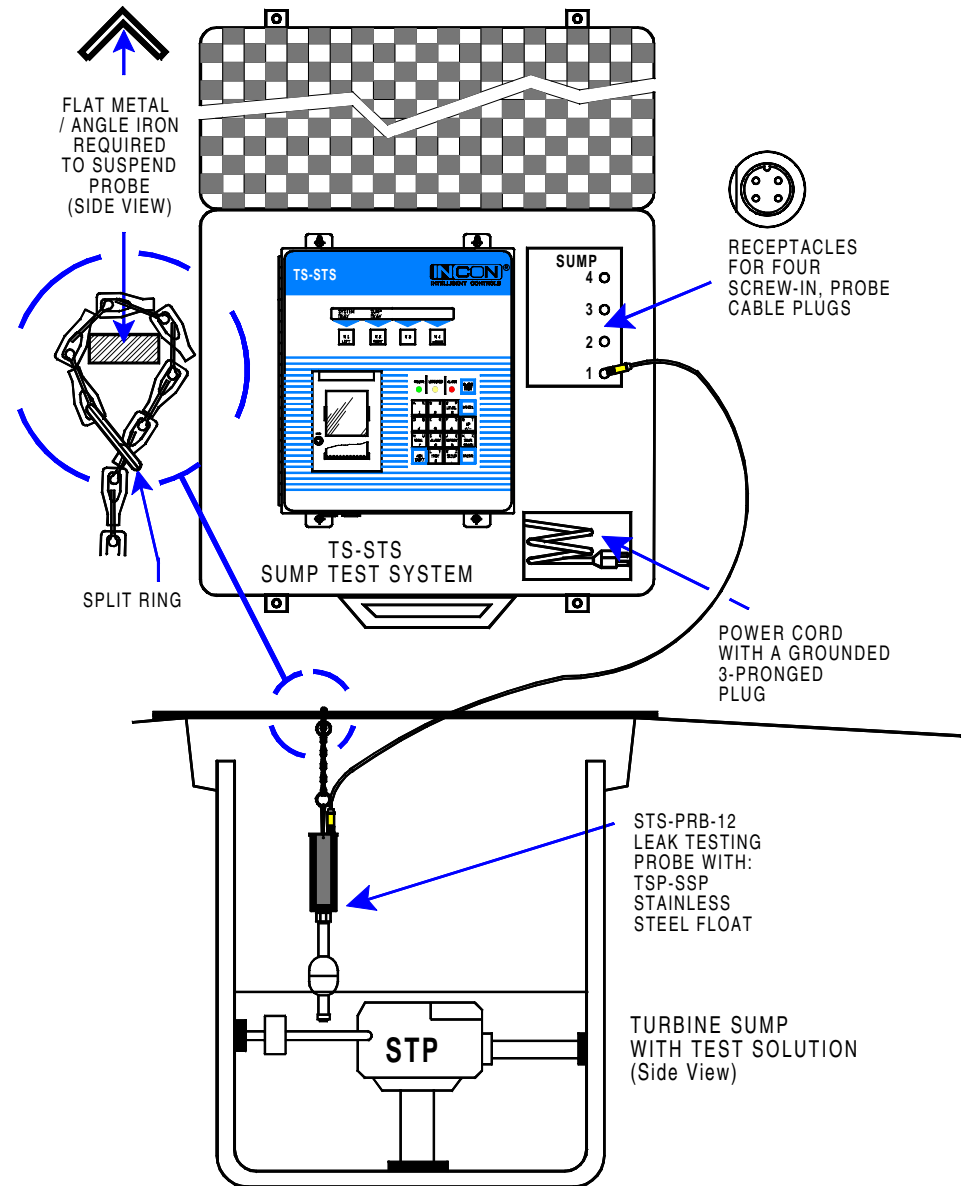


Figure 1.4 Leak Detection Probe Installation Turbine Sump

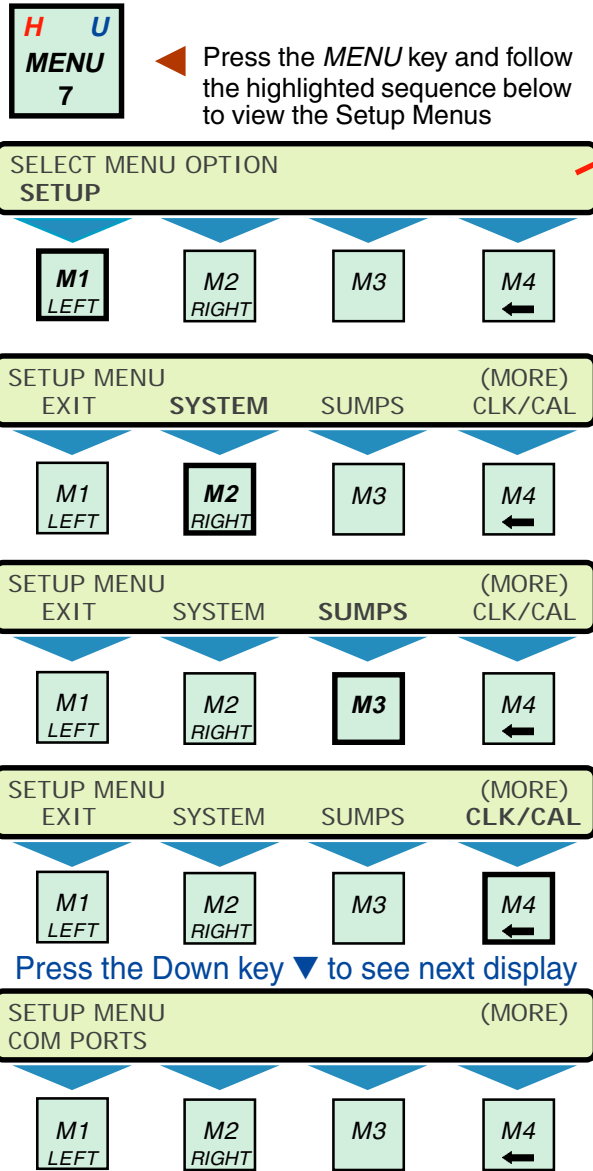


2

Setup - Program the Console

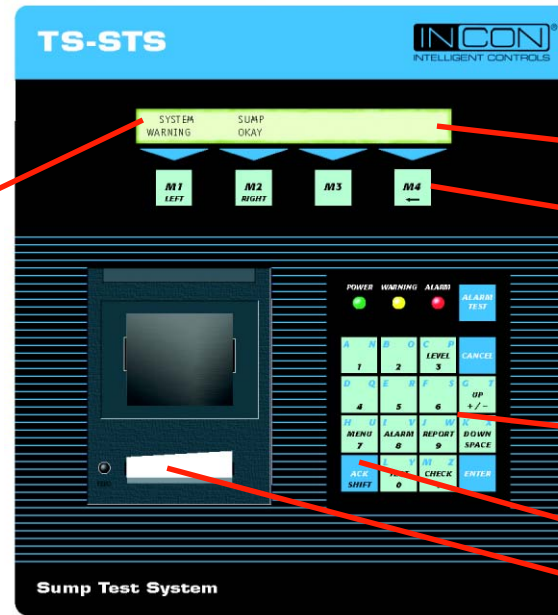
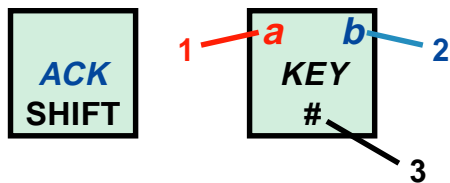
Navigating Menus:

- Push the **UP/DOWN** keys ▲ ▼ to show other menus or other choices
- Use menu keys (**M1** to **M4**) to access menus or to help edit text
- Press the **ENTER** key to make a setup choice or to move down in the menu tree
- Press the **CANCEL** key to cancel before entry or to move up and out of the menu tree



Input Alphanumeric Text (in setup mode):

Press the **ACK SHIFT** key at the keypad **1**, or **2**, or **3** times to cycle between the unique key characters (at positions **1**, **2**, and **3**). Select and press a key to input the desired alphanumeric character.



- Display
- Menu Select Keys (M1 – M4)
- Keypad: (Multi-Function, Alphanumeric)
- ACK SHIFT key
- Report Printer (thermal printer)

Editing Text:

- Press the **M1** key to move the cursor to the left |
- Use **M2** to move the cursor to the right |
- Use **M4** to backspace & delete text to the left of the cursor |



Follow the highlighted sequence at left to program the console.

Menus are in indented format (lower levels to the right).

The setup program **factory default settings** are shown in **ITALIC TEXT**. The console will auto-exit the setup mode if no key is pressed after 3 minutes.

Minimum Setup Requirements

- 1) From SETUP>SYSTEM (SYSTEM INFO), program the System ID data and the No. (number of) Sumps
- 2) SETUP>SUMPS>DATA>SUMP N>NAME>Sump Name (code-name for each containment sump that will be leak tested)
- 3) SETUP>CLK/CAL>Set Time (input the correct time), Set Date (input the correct date), Set Day (choose the day of the week)

EXIT SYSTEM SUMPS CLK/CAL COM PORTS

Setup>System menu

SYSTEM INFO

SYSTEM ID (customize the Site ID information)

LINE 1

LOCATION LINE 1 (input 24 characters Max)
INCON *Enter the Business Name*

LINE 2

LOCATION LINE 2 (input 24 characters Max)
INTELLIGENT CONTROLS INC *Enter other Business data*

LINE 3

LOCATION LINE 3 (input 24 characters Max)
P.O. BOX 638 *Enter the Street Address*

LINE 4

LOCATION LINE 4 (input 24 characters Max)
SACO ME 04072 *Enter the City and Zip code*

LINE 5

LOCATION LINE 5 (input 24 characters Max)
1-800-984-6266 *Enter the Business Number*

NO. SUMPS (enter total number of sumps [4 max.])

NUMBER OF SUMPS
1

SUMPTST (sump leak test, start time + leak limit)

START TIME (Do not set when tests are started from the front panel)
 SUMP TEST START TIME Tests are 15 minutes in length
00.28.00 (12:28 am in 24 hour format)

***Input time in 24 hour format...
 Add 12 to pm times from 1 to 11:59 pm***

LEAK LIM

LEAK LIMIT
0.002 (alarm threshold... 0.002 to 9999 in level units)

Setup>System menu Continued...

COLD BOOT (Replaces **all** custom-setup data with default values)
 IF YOU CONTINUE, ALL SYSTEM PROGRAMMING
 AND DATA WILL BE LOST...
 :
 PRESS ENTER IF YOU ARE SURE THAT
 YOU WANT TO CONTINUE WITH COLD BOOT

Setup>Sumps menu

SUMPS

DATA

N = Sump number

SUMP DATA

SUMP 1

Select sump and program new name

SUMP 2

:

SUMP 4

SUMP DATA N

NAME

(Rename the sump using a

SUMP NAME N

Code-Name for each Sump)

SUMP N

code-names can be up to 7

alphanumeric characters long

(e.g. ULD SMP, SUP SMP, DSP 1-2)

Setup>Clk/Cal menu

CLOCK/CALENDAR

DAY SAV

DAYLITE SAVINGS

ENABLED *Enable* = allows daylight savings time changes

DISABLED Disable = does not

TM STYLE Select the time style for displays & reports

TIME STYLE

12 HOUR

24 HOUR

DT STYLE Select the time style for displays & reports

DATE STYLE

MM/DD/YY

DD/MM/YY

YY/MM/DD (YY = Year, MM = Month, DD = Day)

SET TIME

Input current time in 24 hour format

SET SYSTEM TIME Two digits are required, use leading

zeros before single digits

(e.g. input 05 not 5) **Add 12 to p.m. times from 1 to 11:59 p.m.**

SET DATE

Input current DATE

SET SYSTEM DATE

YYYY:MM:DD

(YYYY = year, MM = Month, DD = Day)...

2 digits are required for month and day – use leading zeros before single digits

(e.g.. input 04 not 4)

SET DAY

SET SYSTEM DAY OF WEEK **Select the current day**

SUNDAY

MONDAY

TUESDAY

WEDNESDAY

THURSDAY

FRIDAY

SATURDAY



3 Leak Testing / Console Operation

Displays:

1.) Normal Display

SYSTEM OKAY	SUMP OKAY
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2.) Press the Check key to check the time and date.

SELECT FUNCTION DISPLAY	10:39:08 AM	10-29-2001
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3.) The System – Warning message alternates with the No Paper (if out). Replace printer paper before starting sump leak tests.

SYSTEM WARNING	SUMP OKAY
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SYSTEM NO PAPER	SUMP OKAY
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4.) Press the Level key to check the test fluid level in sumps (sumps can't be leak tested if empty).

LEVEL INCHES	SUMP 1	SUMP 2	SUMP 3	SUMP 4
	2.01	3.09	1.76	3.12

5.) Press the Test key at the keypad & and the menu select key (M1 M2 or M3) and follow instructions to:

SELECT LEAK TEST OPTION	STATUS	START	ABORT
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M1
LEFT

M2
RIGHT

M3

M4
←

- Show the Status of tests including Start time / date
- Start tests, and to
- Abort leak test(s)...

SYSTEM OKAY	SUMP OKAY
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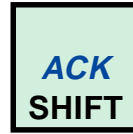
SYSTEM OKAY	SUMP TEST
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Okay & Testing are alternately displayed when a sump leak test is running.

SYSTEM OKAY	SUMP LEAK
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Leak Testing / Console Operation Continued...

- 6.) To view an alarm/warning, **press** the **M1** or **M2** Key under the word Alarm / Warning. While viewing the alarm, **press** the **ACK SHIFT** key at the keypad to acknowledge. *Cleared and transient alarms should be acknowledged prior to starting another test.*
- 7.) **Press** the **Report** key at the keypad to show various report choices.



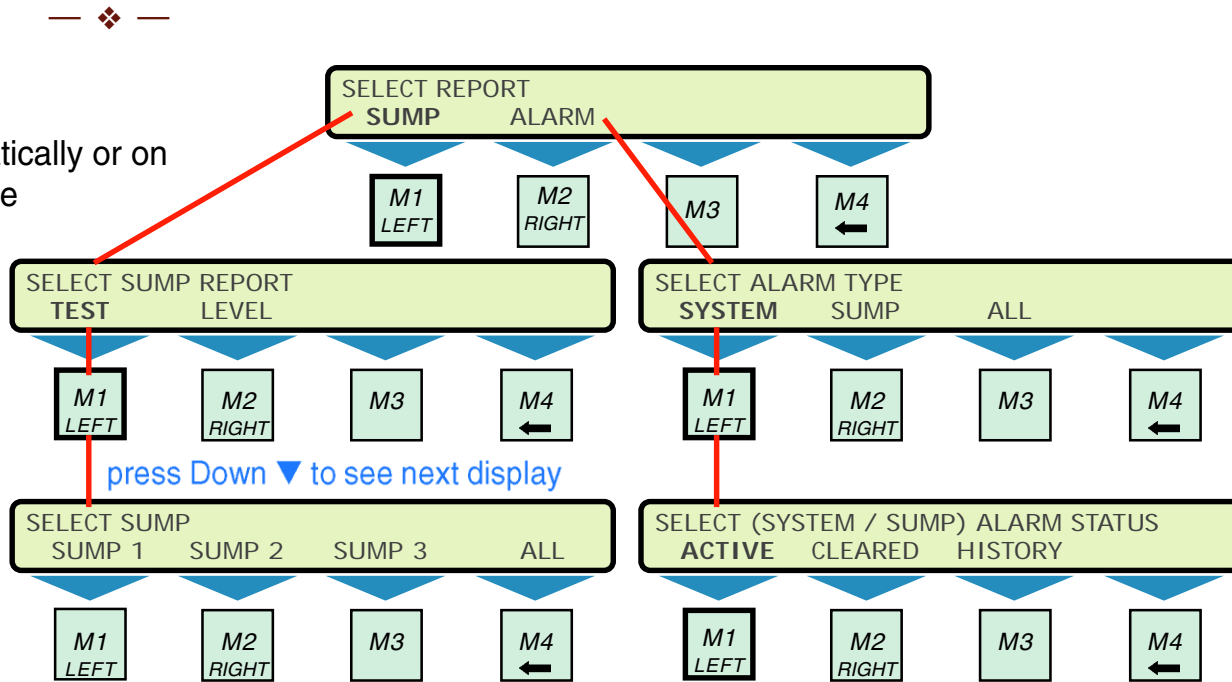
4 Reports

Reports can printout automatically or on demand from the keypad. The Sump Leak Test and Alarm Reports print automatically. The other reports, such as the Sump Level Reports, Alarm Reports, and Sump Test Reports can be printed on demand.

Press the menu select keys and choose the type of report that you wish to printout. Alarm reports will print as soon as an alarm is detected. Leak test reports print automatically after the leak test is finished. *Note that when a new leak test is complete the data will overwrite a previous result.*

Of the three reports shown here, one is a Level Summary report and two are Sump Leak Test Reports.

Up to 4 sumps can be leak-tested at the same time.



press Down ▼ to see next display

2.

INCON INTELLIGENT CONTROLS INC. P.O. BOX 638 SACO ME 04072 1-800-984-6266	
10/31/2001	12:15 PM
SUMP LEAK TEST REPORT	
SUMP 1	
TEST STARTED	12:00 PM
TEST STARTED	10/31/01
BEGIN LEVEL	2.0120 IN
END TIME	12:15 PM
END DATE	10/31/01
END LEVEL	2.0120 IN
LEAK THRESHOLD	0.002 IN
TEST RESULT:	PASSED

3.

INCON INTELLIGENT CONTROLS INC. P.O. BOX 638 SACO ME 04072 1-800-984-6266	
10/31/2001	12:15 PM
SUMP LEAK TEST REPORT	
SUMP 2	
TEST STARTED	12:00 PM
TEST STARTED	10/31/01
BEGIN LEVEL	7.0230 IN
END TIME	12:15 PM
END DATE	10/31/01
END LEVEL	7.0209 IN
LEAK THRESHOLD	0.002 IN
TEST RESULT:	FAILED

INCON INTELLIGENT CONTROLS INC. P.O. BOX 638 SACO ME 04072 1-800-984-6266	
10/31/2001	11:58 AM
SUMP LEVEL REPORT	
SUMP 1	2.012 IN
SUMP 2	7.201 IN
SUMP 3	3.218 IN

4 Reports Continued...

A digital copy of the Sump Test Report can be retrieved from the TS-STs console through the communications port (Comm Port 1). This port is located at the bottom side.

As with the printed reports, this data is overwritten when a new test is run, so it must be collected after each test. The data can be stored in a database as opposed to saving the printouts.

For more information on this feature contact INCON Technical Service at 1-800-984-6266.

