LIABILITY

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EQUIPMENT APPLICATIONS

It is the user's responsibility to determine the suitability of the Voltage Interface for any given application. TekTone® or any of its subsidiaries cannot provide specific advice, as each application will require independent evaluation. TekTone® has no control of the use and application of the frequencies issued by the FCC. Some equipment that is licensed may have a greater protection than other equipment which is operated on an FCC License Exempt basis.

LITERATURE

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SPECIFICATIONS

Manufacturer:
Scope Marketing (Communications UK) Ltd.
Totnes, Devon, England

DESCRIPTION

This product has been designed specifically to work with nurse call systems that require four separate messages for each event. It consists of up to 128 opto-isolated inputs that will accept voltages from +12 to +30 volts. In response to a change of state on any input, messages selected from a table are sent via the serial port to a TekTone® paging transmitter. Each column of 8 inputs has a single "common" connector in the center of the group of terminals. The pager messages are held in non-volatile memory.

The Serially Programmable Voltage Board consists of a total of 128 contact inputs and is housed in a 13"H×7.5"W×2.5"D wall-mounted housing. Cable access is via four inputs fitted with strain-relief couplings. The unit requires 12 VDC, which is supplied by a 115-volt AC adapter.

The Serially Programmable Voltage Board is designed for use with a four-state nurse call system. The four states expected at the inputs are as follows:

Voltage Pulsing at 2Hz
Voltage Pulsing at 1Hz
No Voltage Present
Steady State Voltage Present

Priority is given to the four conditions in the order shown above, with the **2Hz signal** being the highest priority. All pending 2 Hz signal (highest priority) calls are sent before the next priority calls are sent.

Because of the need to analyze the conditions present on the inputs, the time between a condition being present and the message being sent is approximately 2 seconds, depending upon the priority of the call, and other pending higher priority calls. This means that a condition must be present for about two seconds to be accepted. Once accepted, a condition will be paged, even if the state changes before it is paged. In this way, during high activity periods where many inputs may be changing, messages will not be lost if the input state remains present for two seconds.

The scanning procedure does not cease when an input changes, i.e., the system does not stop to analyze a single input, but scans all inputs a number of times (approximately 20ms for each scan) within the two-second scanning period. Any pending messages continue to be sent during the scanning period. In this way, the system operates continuously under all circumstances.

INSTALLATION

1. Loosen the four screws located at the top and bottom of the unit and remove the cover.

2. The interface unit is mounted to the wall with four (4) mounting screws fixed through the backplate. Hold the backplate up to the mounting surface and mark the location of the mounting holes. Place the interface unit aside.

3. Using a ¼" drill bit, drill the marked holes 1¼" deep.

4. Using the supplied mounting hardware, mount the backplate to the mounting surface.

5. Connect the alarm input leads to the appropriate terminals. Each set of eight (8) inputs has a single common. **Do not tie commons together at the NC375. Run separate conductors to the appropriate common location(s).** Negative to common and positive to contact input.

6. Replace the unit's cover.

7. Install the AC adapter (115VAC to 12VDC) to the interface unit and plug it into a 115 VAC wall outlet.

8. Connect the unit to the transmitter using the 10-foot 9-pin to 9-pin cable supplied with the unit.

8. Connect the unit to the nurse call system as indicated in *Figure 1*.

CALIBRATION

This calibration routine is included to allow for timing variations and tolerances between products. Perform this routine in conjunction with the host equipment at the time of installation. This routine requires the NC375 to be connected to a terminal program.

1. Connect the NC375 to a desktop or laptop computer that has a terminal program.

2. Set the communications port to 9600 baud; parity N, 8, 1.

3. Set Dipswitch 8 on the PCB to ON.

4. Connect a priority 2 call (slower flashing condition) to contact 1.

5. Apply power to the interface unit.

6. ATTEMPTING TO CALIBRATE will appear on the screen.

7. After the unit adjusts the scan period, the message CALIBRATION SUCCESSFUL - TURN OFF SWITCH 8 AND HIT ANY KEY TO CONTINUE will appear on the screen.

8. Set dipswitch 8 to OFF.

9. Press any key.

10. Verify that the Priority 2 Call is still present on input 1.

11. Shortly thereafter the screen will display a BATH CALL.

This indicates that the system has successfully adjusted itself to the timings present on the equipment to which it is connected. The calibration value is saved to non-volatile memory and will not be lost if power is removed from the system. This procedure should only need to be performed when the equipment is first installed.

NC375 ROOM LABEL FIELD PROGRAMMING INSTRUCTIONS

The NC375 offers the ability to take an annunciated point from a hard-wired TekTone® nurse call system and process it through the interface to a transmitter—ultimately displaying on a pocket pager. Using the included programming software, you will be making a data file of architectural information and will save it to disk. This data file will then be sent to the NC375 Voltage Interface Unit where it is retained in memory. The data file may be revised and re-sent to the NC375 Voltage Interface Unit as needed, enabling the equipment to reflect changes in the facility.

Required Materials:

• Computer or Laptop with a CD-ROM drive and an available serial port. (Default is COM1. The COM port setting may be changed in the program from the Devices Menu.)

• Serial Cable supplied with the NC366A transmitter (CA365).

• NC375SW Programming Software CD.

Procedure:

1. Install the programming software from the NC375SW CD supplied with the NC375, following the computer-prompted directions. Once completed, shut down the computer.

2. Connect the serial cable from the computer's COM1 port to the port on the NC375 voltage interface.

3. Verify dipswitch settings on the NC375 (see *Figure 1*).

4. Power up the computer and the NC375 unit.

5. Start the NC375 program. The following will appear:

☐ Untitled
   ☐ Default Settings
   ☐ Add Another Zone

6. Double click the *Default Settings* folder icon. The following will appear:

☐ Untitled
　└ ☐ Default Settings
　　└ ☐ Location
　　└ ☐ Priority 1
　　└ ☐ Priority 2
　　└ ☐ Priority 3
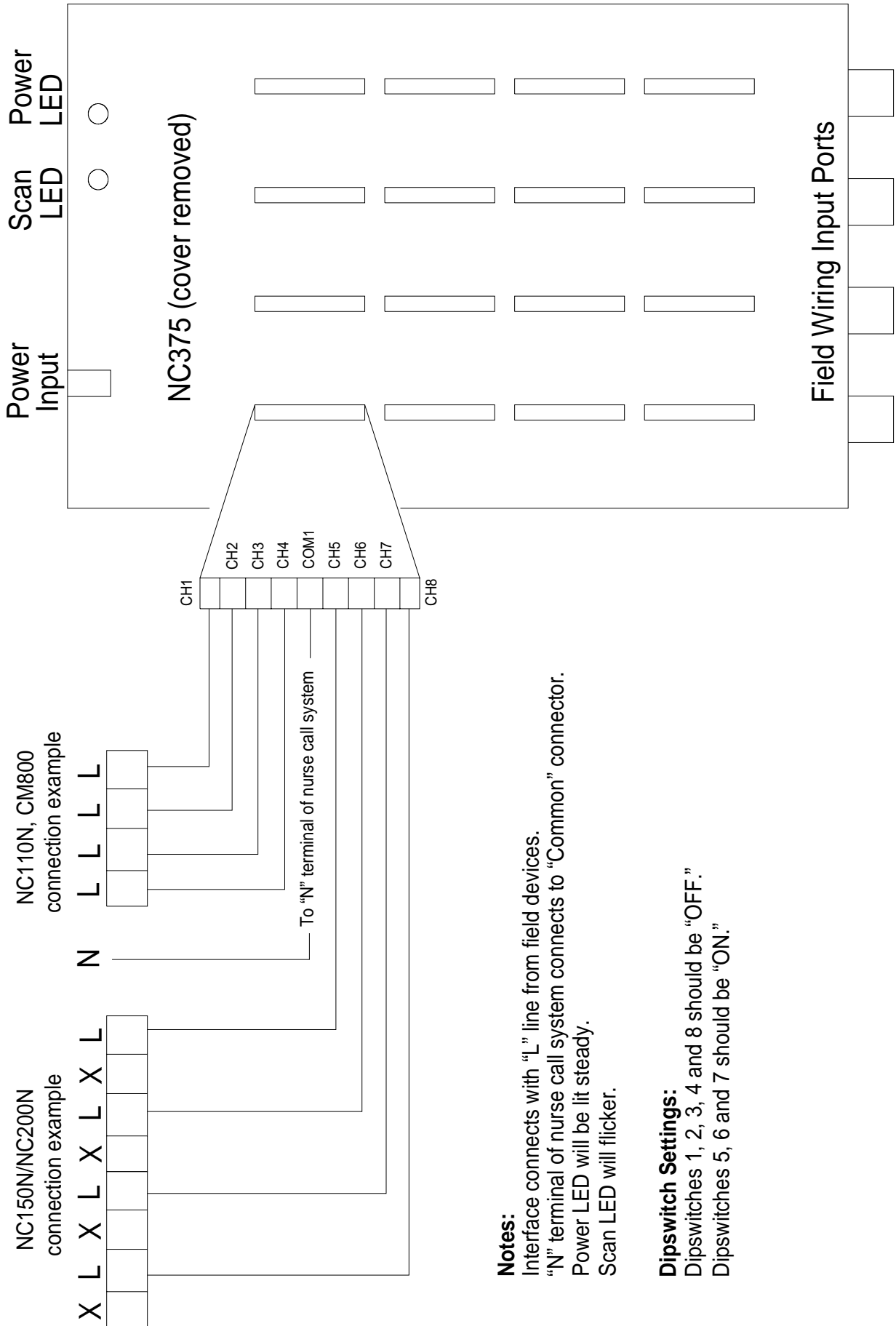　　└ ☐ Reset
　└ ☐ Add Another Zone
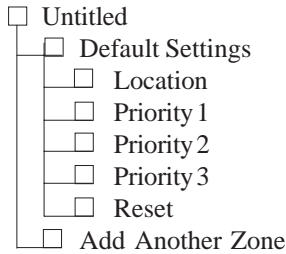
Information entered here is used as the defaults for all zone programming entries. This information can be changed for any zone entries later in the programming process.

7. Click on the *Priority 1* folder (Priority 1 = high)
   a. Location = Room Number (for example)
   b. Pager type = Alphanumeric
   c. Beep type = C
   d. Pager ID = pager cap code (calculate as $10000 + [pager\# \times 8]$, i.e., pager #400 = 13200)
   e. Message box = 1st priority label (example: "Smoke Detector")

8. Click on the *Priority 2* folder (Priority 2 = medium)
   a. Location = Room Number (This information is automatically entered from entry in *Priority 1*.)
   b. Pager type = Alphanumeric
   c. Beep type = B
   d. Pager ID = pager cap code (calculate as $10000 + [pager\# \times 8]$), i.e., pager #400 = 13200)
   e. Message box = 2nd priority label (example: "Bath/ Emergency")

9. Click on the *Priority 3* folder (Priority 3 = low)
   a. Location = Room Number (This information is automatically entered from entry in *Priority 1*)
   b. Pager type = Alphanumeric
   c. Beep type = A
   d. Pager ID = pager cap code (calculate as $10000 + [pager\# \times 8]$, i.e., pager #400 = 13200)
   e. Message box = 3rd priority label (example: "Routine")

10. Double-click the *Default Settings* Folder to collapse the directory tree. Single-click on *Add Another Zone*, click in the text box on the right, and type the numeric range of zones to add (example: "1-20" will create zones 1 through 20)

11. Single-click on *Zone 1* and enter the first room number in the Location Box on the right, after the default label. Then select each of the subsequent zones and enter the respective room numbers. NOTE: The architectural room numbers must correspond with the physical point-wire connections to the voltage interface's terminal blocks. Zone 1 in the programming setup = CH1 in the voltage interface's terminal blocks.

12. Save the data file by pressing **CTRL-A**, or select *File / Save as*. Enter a file name and click **OK**.

13. Program the NC375 unit by pressing **CTRL-W**, or select *Device / Device Write*. Then click **OK**.

14. Verify that the programming matches the unit by pressing **CTRL-V**, or select *Device / Device Verify*. Then click **OK**.

15. Power down the NC375 unit, disconnect the serial cable from the computer, and connect to the NC366A transmitter. Power up the NC375 and the NC366A, and test by placing calls from each room.

Figure 1—NC375 Field Connection Diagram

Power Input

NC375 (cover removed)

Scan LED

Power LED

Field Wiring Input Ports

CH1 CH2 CH3 CH4 COM1 CH5 CH6 CH7 CH8

NC110N, CM800 connection example

L L L L

N

NC150N/NC200N connection example

X L X L X L X L

To "N" terminal of nurse call system

Notes:
Interface connects with "L" line from field devices.
"N" terminal of nurse call system connects to "Common" connector.
Power LED will be lit steady.
Scan LED will flicker.

Dipswitch Settings:
Dipswitches 1, 2, 3, 4 and 8 should be "OFF".
Dipswitches 5, 6 and 7 should be "ON."