



# Installation and Maintenance

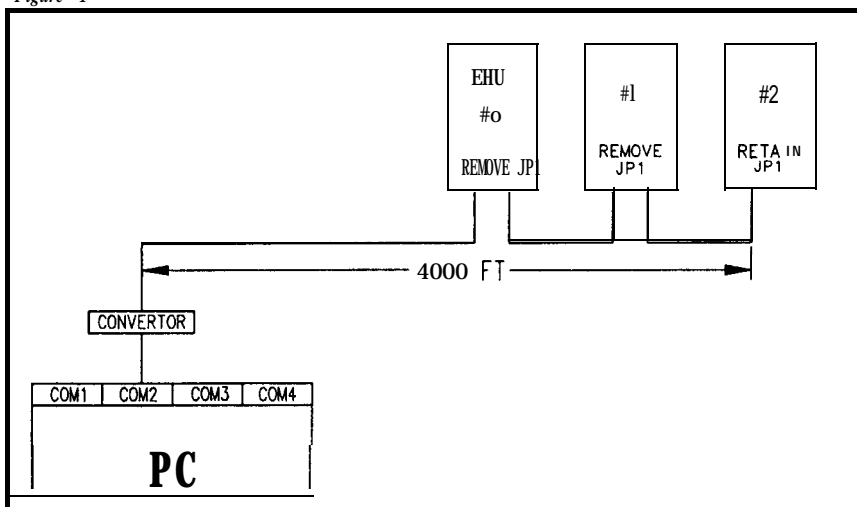
## THE SERIES EHU-700 COMMUNICATIONS LINK PROGRAM

An engineer in the central control room of a large facility served by several remotely located humidifiers has previously only had an alarm signal to notify him of a problem. With the EHU-Link he can periodically check the operation of the humidifiers and examine the diagnostic message remotely in the case of an alarm. If actuating the tank contactor or drain valve will alleviate a problem, this can also be accomplished.

The EHU-Link is a communications program allowing information to be passed between Armstrong Series EHU-700 electronic humidifiers and an IBM PC (or its equivalent). It is available on either 5-1/4" or 3 1/2" media. The program can address up to 10 Series EHU-700 humidifiers in a daisy chain configuration using a dedicated serial communication port on the PC (choose 1 of 4) and a convertor attachment. Communications is established using the RS-485 protocol, allowing up to 4,000 feet between the computer and the final humidifier in the chain (see Figure 1). The EHU-Link program allows for remotely controlling the tank contactor and drain valve, and allows complete monitoring of all Series EHU-700 functions. These include; drain valve, fill valve, and tank contactor status, current consumption, percent power and demand, unit operating status, and diagnostic message (if any).

All Series EHU-700s equipped with an E-PROM Version 3.6 or greater (Figure 3) are equipped to interface directly with RS-485 communications lines. Please contact Armstrong International or your local Armstrong Representative if you wish to use EHU-Link on a humidifier with an E-PROM pre-dating this version.

Figure 1



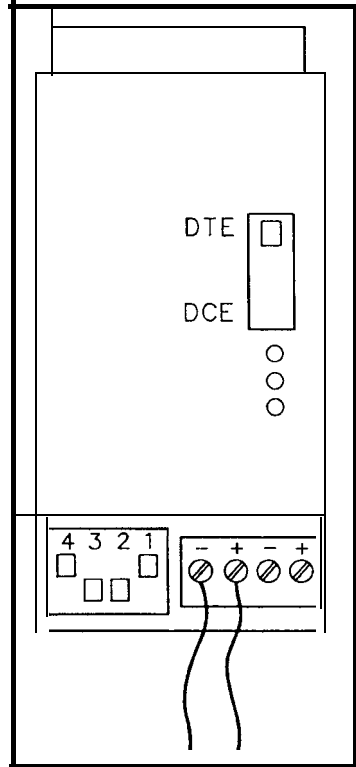
FOR MORE INFORMATION ON ARMSTRONG SERIES EHU-700 HUMIDIFIERS PLEASE REFER TO BULLETINS #514 AND #527.



The communications ports on most PCs are RS-232 protocol but the Series EHU-700 requires RS-485, so an RS-232-to-RS-485 convertor must be purchased. Armstrong recommends the Telebyte Model 266 Convertor (available thru Telebyte Technology, Inc., Greenlawn, NY, 1-800-835-3298). The switch labels in the following instructions refer to this unit (see Figure 2).

1. **CONFIGURE THE CONVERTOR.** The Series EHU-700 is a DTE type device. Select DTE on the DTE/DCE selector on the top of the convertor.
2. **SET THE OPERATING MODE OF THE SYSTEM.** To set the operating mode of the transmitter (controlled by RTS) and receiver (enabled when no RTS), select switch 3 "on" and switch 4 "off" near the output terminals of the convertor.
3. **SET THE LINE TERMINATION TO 12052.** Select "off" for switch 1 and "on" for switch 2 to terminate the communication lines at 12052.
4. **ATTACH THE POWER TRANSFORMER.** Plug transformer into the power jack on convertor.

Figure 2



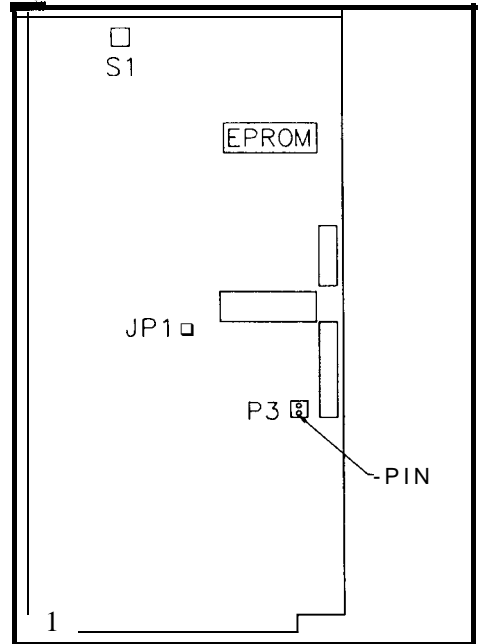
## INSTALLING THE WIRING

The wiring between the serial convertor and any Series EHU-700s should be accomplished using stranded 24 ga., unshielded, twisted pair cabling.

1. **RUN THE CABLING.** As many as ten Series EHU-700s can be connected in daisy chain fashion to the convertor (see Figure 1). The Serial communication connector P3 (see Figure 3) on the Series EHU-700 is polarized with pin 1 positive and pin 2 negative.
2. **CONNECT THE CONVERTORS.** Secure one end of the cabling under the screws in the terminal block at the end of the convertor. **BE CAREFUL** to note the polarity, i.e. which color wire goes to the plus (+) terminal and which to the minus (-) terminal.
3. **CONNECT THE HUMIDIFIERS.** Attach the Humidifier end of the cabling to the connector. The wires should be attached to P3 using the supplied pigtail and crimp connectors. Attach the positive (+) lead to pin one and the negative (-) lead to pin two. If you are connecting more than one humidifier in a daisy chain, slip both the incoming and outgoing leads into one crimp connector. **BE CAREFUL** to check the continuity at each Series EHU-700 location.

4. **SET THE TERMINATION.** The communications lines must be terminated at the end of each line only. Jumpers have been provided on the Series EHU-700 circuit board for this purpose (see Figure 3). Jumper JP1 should be in place wherever the serial convertor communicates with just one Series EHU-700. When several Series EHU-700s are connected in daisy chain, jumper JP1 should be **REMOVED FROM ALL UNITS EXCEPT THE LAST ONE** (see Figure 1).
5. **SET THE SCAN ADDRESS.** Each of the humidifiers must have a separate address set by the rotary switch S1 on the Series EHU-700 circuit board (see Figure 3). The appropriate setting when a convertor serves only one humidifier is 0. If there are several humidifiers in a daisy chain, each of them can be given a separate address by rotating the switch to a different digit (for example: the first unit in line to 0, the second to 1, the third to 2, etc.). **MAKE A NOTE OF THE SCAN ADDRESS OF EACH HUMIDIFIER!**
6. **PLUG THE SERIAL CONVERTOR INTO THE COMPUTER.**

Figure 3



## INSTALLING AND STARTING THE SOFTWARE

The EHU-Link program occupies less than 64KB of disc space. It is best to operate the program from a hard drive. However, it may be operated from a floppy drive if you desire.

1. **MAKE A NEW DIRECTORY.** To install the program on a hard drive, begin by making a new directory with a name of your choice (for example: Humid). From the DOS prompt, log on the hard drive you want to use (C for example) by typing the drive letter followed by a colon and press the enter key (for example: C:[ENTER]. Type **mkdir** and leave a space, then type the name of your new directory. Finally, press the enter key (for example: mkdir humid[ENTER]).
2. **COPY THE PROGRAM.** Insert the EHU-Link program into a floppy drive and log onto that drive (for example A:[ENTER]). Now type the copy wild card command to copy all the files on the disc into your new directory (for example: copy \*.\* c:\humid[ENTER]).
3. **START THE PROGRAM.** From the DOS prompt change to your new directory (for example: cd \humid[ENTER]). Alternatively, if you are running the program from floppy disc, log onto the drive which holds the disc (for example B). In either case, start the program by typing **c700** and pressing the enter key.



## OPERATING THE PROGRAM

The first screen is a title page. After you have read it, push the enter key.

1. **PORT SELECT MENU.** You are given a list of communication ports (COM 1 thru COM 4). Select the port to which the humidifier(s) you want to monitor is connected. Type in the number to the left of that port and press the enter key (for example to choose COM 1: type 1 [ENTER]). If you have selected the wrong communication port switch to the main menu and quit the program (see instructions below). Restart the program and select the appropriate communications port on the port select screen.

2. **COMMUNICATIONS SCREEN.** The communications screen is divided into two menus; the main menu and the list menu. The active menu is toggled by pressing the enter key. A cyan background behind the menu name indicates the active menu.

The list menu is scrolled by using the up and down arrows. Choices are made by toggling to the main menu and pressing the appropriate number key and then enter. To quit the program, toggle to the main menu and press Q and then the enter key.

There are three prompt lines at the bottom of the screen which have a cyan background. These lines constantly keep you informed as to what your choices are in the present menu. Additional information is provided as the main menu expands, prompting you as to what you must choose, what you have chosen and what the computer is doing.

3. **SELECT THE HUMIDIFIER.** Ten humidifier choices are available. The location numbers 0-9 are shown on the list menu and correspond to the scan address setting you made with S1 on each Series EHU-700 circuit board (Figure 3). From the main menu enter the number corresponding to the location you wish to look at and press enter.

4. **SELECT THE REQUEST.** On the list screen is a list of the information and actions you can request from the humidifier. From the main menu type in the number corresponding to the information you require or the action you wish taken, then press enter.

5. **NOTE THE RESPONSE.** In about ten seconds the computer should give you a response. If the computer finds no humidifier at the requested address, it will ask you if the unit is operating. CHECK TO SEE: 1) if the location code and com port selections are right; 2) if the EHU is on; 3) if the cabling is properly connected and the polarization correct; 4) if the scan address switch (S1 Figure 3) is properly set.



If you have a problem with the package, or you need any more information about its operation or application, please contact Armstrong International, Inc. or your local Armstrong Representative.

**Armstrong International, Inc.**

816 Maple Street, P.O. Box 408, Three Rivers, Michigan 49093 -USA Phone: (616) 273-1415

**Steam Traps \ Humidifiers \ Steam Coils \ Valves**