



# APPLICATIONS NOTICE

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Form NS 006

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APPLIC. NOTICE GENERAL LIST

ISSUE NO. : 05/01  
DATE : 1 October 2001  
FROM : T King/K Edwards

SUBJECT: HANWEST CONTROLS TROUBLE SHOOTING

UNITS: All Split & Packaged Air Cooled Units

Attached to this Application Notice is a Service Bulletin trouble shooting guide for HanWest HAN-L5 Controllers. Also attached is a service bulletin for the Control Display Codes.

The information contained will be extremely useful in diagnosing any apparent on-site problems with a controller.

We have found that 95% of allegedly faulty controllers returned were in fact not faulty at all and some simple on-site diagnosis would have found a remedy. Most alleged faults turn out to be mis-connection of sensors, wrongly set dip switches, mis-connection of wiring (refer previous Application Notice 02/01) and links, or a misunderstanding of how the control operates or needs to be set up.

For further information relating to remote sensors, averaging sensors or any other special requirement, refer the HanWest Data and Installation Sheets for connections and dip switch setting changes.

**SERVICE BULLETIN : HAN-L5B & HAN-L5.**  
**SUBJECT : CONTROL DISPLAY CODES.**



The HAN-L5 series microprocessor air conditioning controllers provide a series of display codes to assist the field service technician during the commissioning and servicing of the air conditioning system. The numbers or symbols listed in the following table are displayed on the LED display on the front of the HAN-L5 (B) wall controller.

The display code and the reference are as follows:

Display Code No.	Reference
"1"	1) Incorrect Dip Switch (DS) setting; ( DS on back of HAN-L5 wall control). a) DS 8 & 9 Both switches off. b) DS "8" off and "9" on and no remote sensor fitted. 2) Damaged sensor or cable. a) Open circuit in control sensor when using sensor in wall control only. b) Open circuit in remote sensor when using remote sensor only. c) Short in remote sensor or sensor cable when using remote sensor from PCB installed at fan coil unit.
"51"	1) Damaged sensor or cable. a) Short in wall control sensor when using wall control sensor only. b) Short in remote sensor or sensor cable when using remote sensor only plugged into CN-TH on HAN-L5(B) wall control.
High Temp. Display	1) Incorrect Dip Switch setting. a) DS "5" Set to "ON" displaying °F. Set DS to "OFF" to display °C. 2) Incorrect Installation. a) Remote sensor connected to "CN-TH" on HAN-L5(B) wall control without disabling on board sensor in the HAN-L5(B) wall control.

**DIP SWITCH SETTINGS.**

Controllers are often thought to be faulty when the problem is only an incorrect Dip switch setting. The correct Dip switch settings for reverse cycle (heat pump) air conditioners are as follows.

**Reverse Cycle Operation.**

Service Switch	Room Temp. Display						Wall Control Sensor	Remote Sensor	
	1	2	3	4	5	6	7	8	9
ON			■	■		°F....	■ ON	■	
OFF	■	■			■	°C ■	OFF		■

For correct heat pump operation, Dip Switches No 1 to 5 must be set as shown above.

**Cool Only Electric Element Heat.**

Service Switch	Room Temp. Display						Wall Control Sensor	Remote Sensor	
	1	2	3	4	5	6	7	8	9
ON		■	■	■		°F....	■ ON	■	
OFF	■				■	°C ■	OFF		■

For correct cool only/electric element heat operation, Dip switches No 1 to 5 must be set as shown above.

IN THE INTEREST OF CONTINUOUS PRODUCT IMPROVEMENT SPECIFICATIONS OR PERFORMANCE DATA MAY CHANGE WITHOUT NOTICE.

**SERVICE BULLETIN : HAN-L5(B)/PCB-058.  
HAN-L5(B)/PCB-043L4.**  
**SUBJECT : TROUBLE SHOOTING.**



**INTERFACE CABLE COLOUR DESIGNATIONS.**

Pin Number	Colour	Designation
1	Brown	Compressor
2	Red	High Fan
3	Orange	Low Fan
4	Yellow	Med. Fan
5	Green	Rev. Valve
6	Blue	Low Voltage Positive
7	Black	Low Voltage Common
8	Purple	Remote Sensor

This trouble shooting guide is for the HAN-L5 series microprocessor controllers when used with PCB-043L4 or PCB-058. The PCB-058 was introduced in November 1998 and has additional features to the earlier PCB-043L4. The PCB-058 is identified by the model on the PCB base near the LF relay.

Problem	Cause	Remedy
<b>Wall control will not operate.</b>  <b>Note: e &amp; f for PCB-058 only.</b>	a) No power to relay board.  b) Fuse on relay open circuit.  c) Damaged interface cable.  d) Bad connection of interface cable.  e) Jumper missing from "CSD" pins on PCB-058. f) Jumper missing from "CN-12V" plug pins No. 1 & 2 on PCB-058 if no ZSU (zone switch) fitted.	a) Check 240V power supply at relay board at terminals "L" & "N". Note:- The relay board is polarity sensitive. Active must be on "L". b) Check fuse for continuity & replace if open circuit. c) Check with multimeter across the blue & black wires at the interface cable plug at wall control end. Reading should be approx. 5V DC. d) Check plug connection at both ends of cable to ensure a good connection to relay board & wall control. e) Fit jumper bridge to "CSD" pins. f) Fit jumper bridge to pins No. 1 & 2 on "CN-TH1" on PCB-058.
<b>HAN-L5(B) wall control on but nothing operates.</b>	a) Jumper missing from "RSD" pins on PCB-058.	a) Fit jumper bridge to "RSD" pins on PCB-058.
<b>Indoor fan will not run on heat (PCB-058 only).</b>	a) Indoor coil sensor not fitted to plug "CN-TH2" on PCB-058 or sensor bulb incorrectly positioned. b) No indoor coil sensor installed.	a) Fit indoor coil sensor & check for correct position. b) Fit jumper to pins on plug "CN-TH2" on PCB-058.
<b>Compressor will not run.</b>	a) Dip switches incorrectly set. b) Link Removed.  c) Selection switch is in fan only position. d) Mode selector switch or temperature adjustment changes have been instigated 4 min. safety delay.	a) Check settings & adjust if necessary. b) For 240V control system, the link must be between terminals "L" & "24". c) Move selection switch to cool, auto or heat position. d) Set mode switch to required position, adjust temp. to start cooling or heating. Reset No. 1 dip switch on HAN wall control to on. When commissioning of unit is complete, No. 1 dip switch must be set to off (down) for normal operation.

	<ul style="list-style-type: none"> <li>e) Delay timer in condenser unit .</li> <li>f) Jumper missing from "RSD" pins on PCB-058.</li> </ul>	<ul style="list-style-type: none"> <li>e) Check for timer in condenser &amp; wait for time delay period to complete.</li> <li>f) Fit jumper bridge to "RSD" pins. If remote switch or fire trip connected to "RSD" check if remote switch is closed.</li> </ul>
Temperature display reads extremely high.	<ul style="list-style-type: none"> <li>a) Display set to read in °F.</li> <li>b) Remote sensor connected to plug on wall control (HAN-L5 only).</li> <li>c) Warm air from wall cavity affecting control reading.</li> </ul>	<ul style="list-style-type: none"> <li>a) No. 5 dip switch must be in the OFF position to read in °C.</li> <li>b) If using a remote sensor from the wall control, this sensor becomes the on board sensor &amp; one leg of the bead sensor must be disconnected.</li> <li>c) Check temperature of wall cavity behind control. Cover cable hole with duct tape.</li> </ul>
Display reads 1.	<ul style="list-style-type: none"> <li>a) Room sensor on wall control turned off.</li> <li>b) Remote sensor installation, damage to remote sensor cable.</li> <li>c) Damaged on board sensor.</li> <li>d) Damage to interface cable between HAN wall control &amp; PCB power relay board.</li> </ul>	<ul style="list-style-type: none"> <li>a) Move dip switch No. 8 to the on position.</li> <li>b) Check remote sensor for damage &amp; replace if damaged (No. 9 dip switch ON).</li> <li>c) Check on board sensor for damage. Replace wall control if damaged.</li> <li>d) Check for damage to purple wire or cable plugs</li> </ul>
A/C unit will not turn off on heat.	<ul style="list-style-type: none"> <li>a) Wiring fault.</li> </ul>	<ul style="list-style-type: none"> <li>a) Check that compressor contactor is connected to terminal CO &amp; not RH or RV on PCB-058.</li> </ul>
Compressor will not run on heat	<ul style="list-style-type: none"> <li>a) Wiring fault.</li> <li>b) Location of remote sensor (if used).</li> </ul>	<ul style="list-style-type: none"> <li>a) Check that compressor contactor is wired to terminal CO &amp; not RC on PCB-043L4.</li> <li>b) Check location of remote sensor.</li> </ul>
Time Clock programs not working.	<ul style="list-style-type: none"> <li>a) Time clock override button in wrong position.</li> <li>b) Incorrect setting of ON/OFF programs.</li> </ul>	<ul style="list-style-type: none"> <li>a) Override button must be in the "AUTO" position on the time clock display for the programs to operate.</li> <li>b) Check that for every "ON" program there is an "OFF" program.</li> </ul>
12hr countdown timer counts down in seconds.	<ul style="list-style-type: none"> <li>a) No. 1 service dip switch is in the on position.</li> </ul>	<ul style="list-style-type: none"> <li>a) Return no. 1 dip switch to the off position after commissioning is completed.</li> </ul>
Indoor fan runs continually on heat.	<ul style="list-style-type: none"> <li>a) Jumper JP1 on power board is bridged.</li> </ul>	<ul style="list-style-type: none"> <li>a) For auto fan operation on heat, the jumper must be removed.</li> </ul>
No time clock settings but control switches on system after power failure.	<ul style="list-style-type: none"> <li>Incorrect sequence setting of time clock.</li> </ul>	<ul style="list-style-type: none"> <li>a) Press override button and set time clock to OFF.</li> <li>b) If time clock has on/off settings, press override button to off then auto. To start system press main on/off button on front of control.</li> </ul>
Erratic control function. No heat or no cool function. Fan speeds changing rapidly. Control functions will not work.		<p>Check interface cable between HAN-L5 wall control &amp; PCB in a/c unit. If excess cable length is left in coil, unroll and spread out. Coiled cable will create an electro magnetic field which could corrupt control communications causing erratic operation.</p> <p><b>Also</b>  Do not install interface cable parallel with high voltage cables.  Do not run &amp; fasten interface cables to water or other copper pipes which could act as a conductor for electrical interference.</p>