# General Service Bulletin

# Tracer™ CH530/CH531

## *Pluggable Connector System*

## Introduction

The purpose of this bulletin is to advise field service technicians of a change associated with Tracer™ CH530/CH531 chiller controllers. This literature piece provides an overview to the new system and illustrates the various components utilized in a typical system. This new connector system will begin to ship on La Crosse Pueblo, and aftermarket CH530/CH531 products in second quarter of 2006.

This service bulletin is informational only and does not authorize any parts or labor.

Typical product applications include La Crosse Simplex and Duplex products: CVHE, CVHF, CVHG, CDHF, CDHG, Pueblo: RTAC, RTHD, CGWF, CCAF, and aftermarket: Earthwise purge PRGD and CVRD chiller controllers. This bulletin is not being taken to address a safety concern, only a product change.

**NOTICE:** Warnings and Cautions appear at appropriate sections throughout this literature. Read these carefully.

⚠ **WARNING:** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION:** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

**CAUTION:** Indicates a situation that may result in equipment or property-damage only accidents.

**May 2006** **PART-SVB16A-EN**

The new connector system will be installed on units with the following design sequence. Refer to digit 10 and 11 in the model number for the unit design sequence.

CVHE - 4F and later,
CVHG - 2M and later
CDHG - 1J and later
CCGC - B0 (China gear drive)
PRGD - E0 and later
RTHD - H0 and later (Pueblo)
CVHF - 2W and later
CDHF - 1J and later
CCHC - 2A and later (China direct drive)
CVRD - F0 and later
RTAC - N0 and later (Pueblo)
CGWF/CCAF - D0 and later

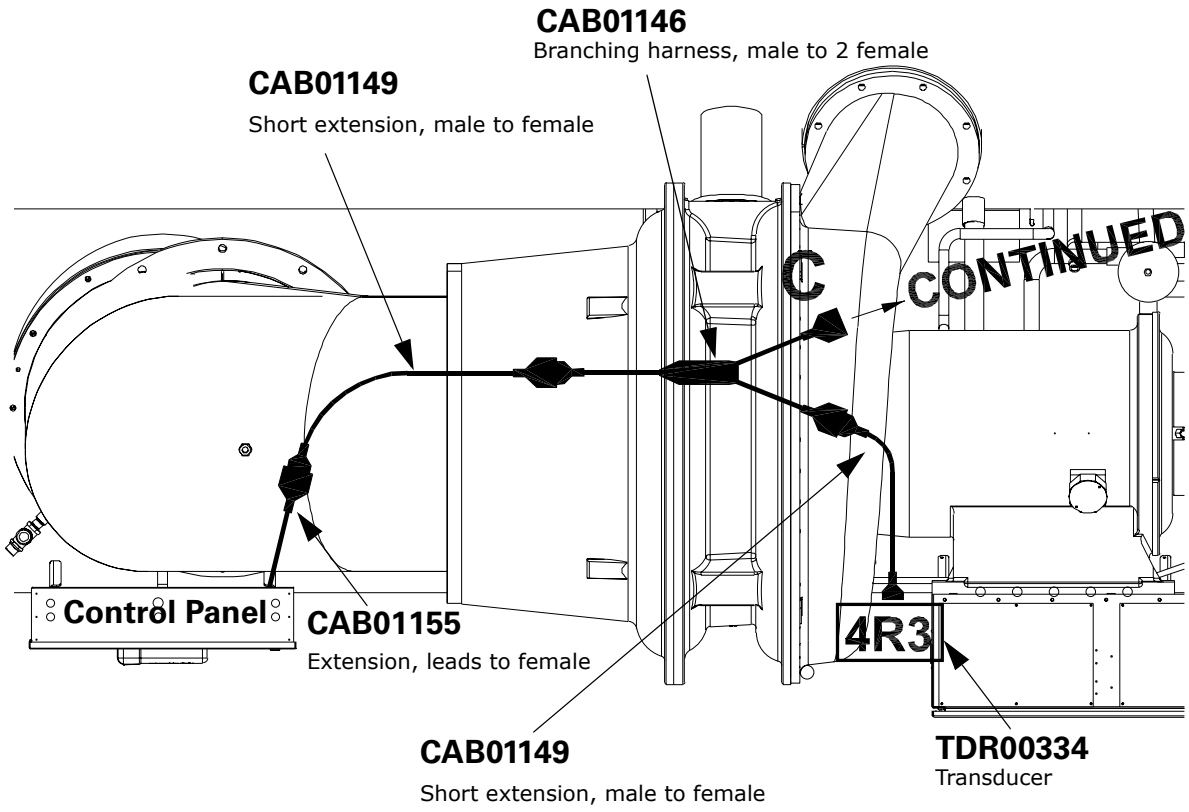
## Discussion

This bulletin will:

- Explain product changes
- Identify the various components which make up the new unit wiring system. Use it to identify parts for units that have been changed to the new system.
- Illustrate a typical system of components

This literature piece is informational only and written to inform parts and service personnel of a product change.

**Figure 1. Example of new IPC routing**



# Parts information

Use the following reference table to familiarize yourself with the various parts of the new unit wiring system.

**Table 1. Identification of parts**

| Description | Figure | Part number |
|---|---|---|
| Branching harness, male to 2 female, 19.69 in (500 mm) | Figure 2, p. 4 | CAB01146 |
| Branching harness, male to 2 female, 39.37 in (1000 mm) | Figure 3, p. 4 | CAB01147 |
| Branching harness, male to 3 female, 19.69 in (500mm) | Figure 4, p. 5 | CAB01148 |
| Short extension, male to female, 39.37 in (1000 mm) | Figure 5, p. 5 | CAB01149 |
| Long extension, male to female, 78.74 in (2000 mm) | Figure 6, p. 5 | CAB01150 |
| Extension, male to stripped leads, 39.37 in (1000 mm) | Figure 7, p. 6 | CAB01152 |
| Extension, female to stripped leads, 39.37in (1000 mm) | Figure 8, p. 6 | CAB01155 |
| Frame to panel LLID adapter, male to white LLID connector, 39.37 in (1000 mm) | Figure 9, p. 6 | CAB01151 |
| Frame to panel LLID adapter, male to white LLID connector, 78.74 in (2000 mm) | Figure 9, p. 6 | CAB01153 |
| Frame to panel LLID adapter, female to white LLID connector, 39.37 in (1000 mm) | Figure 10, p. 7 | CAB01154 |
| Actuator, stepper drive for CTV inlet vanes | Figure 11, p. 7 | ACT00415 |
| Temperature Sensor - Standard range | Figure 12, p. 7 | SEN01314 |
| Temperature Sensor - High range, Purge regeneration | Figure 12, p. 7 | SEN01340 |
| Pressure transducer - Low range (0-50 psi), CTV, | Figure 13, p. 8 | TDR00334 |
| Pressure transducer - Standard Range (0-475 psi), RTAC, RTHD, CGWF, CCAF | Figure 13, p. 8 | TDR00335 |
| Liquid level sensor, RTAC, RTHD | Figure 14, p. 8 | SEN01392 |
| Electronic expansion valve, EXV, RTHD, RTAC | Figure 15, p. 8 | See CATS[i] |
| White 4-place screw terminal connector | Figure 16, p. 9 | BLK01115 |
| Adapter Kit, four flat wire harness female connector kit | Figure 17, p. 9 | KIT12559 |
| Adapter Kit, four flat wire harness male connector kit | Figure 18, p. 10 | KIT13723 |
| Cable for communication and power, 18 AWG, 4 conductor round jacketed, twisted non-paired configuration, 600 Vac, 150 ft (45 M) roll, bare leads on both ends to be used for remote starters, etc. | no image | CAB01163 |

i) There are several expansion valves that replace the group of expansion valves. Use the complete unit model number and the CATS™ parts identification system to determine which LLID replaces the original parts. Like the original expansion valves these new valves have replacement motor parts. These are detailed in the notes associated with the new LLID part numbers.

New connector system:

- Aesthetically pleasing
- Automotive industry grade
- Sealed connector system
- Easier connection for factory and field
- Repeated manual dis-connection and re-connection allowed

- No special tools required with new system
- Supports take apart machines, supports water box removal, supports unit bus troubleshooting circuit breakdown
- Has plug to flat wire adapters available for new LLIDS with plugs to connect to old comm bus. Or, old LLIDS can be connected to new comm bus.
- OK to paint

As with the existing IPC system there are proper techniques to follow:

- Do not leave unused female or male plugs on harness; use correct piece.
- Do not cut off unused lugs. An unused plug means you did not select the right parts.
- Do not tie wrap over the plug latch as this could allow plugs to separate.
- Do not attempt to repair a plug, piece parts are not available; only replacement cable assemblies are available, as listed in this literature.

**⚠ WARNING**
**Hazardous Voltage!**

**Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.**

**Important:** Do not disconnect these plugs with the IPC powered up, as this will cause communications diagnostics, and shutdown of an operating chiller.

**Figure 2. CAB01146 - Branching harness, male to 2 female, 19.69 in (500 mm)**

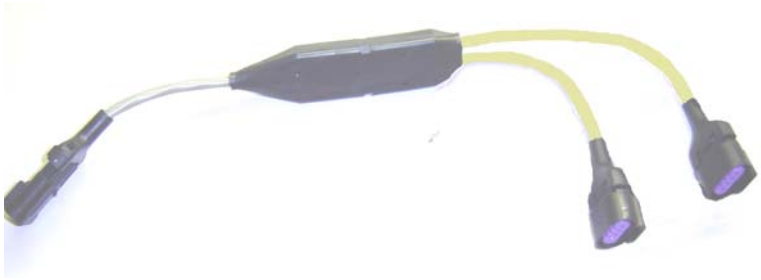


**Figure 3. CAB01147 - Branching harness, male to 2 female, 39.37 in (1000 mm)**

**Figure 4. CAB01148 - Branching harness, male to 3 female, 19.69 in (500 mm)**

**Figure 5. CAB01149 - Short extension, male to female, 39.37 in (1000 mm)**

**Figure 6. CAB01150 - Long extension, male to female, 78.74 in (2000 mm)**

**Figure 7. CAB01152 - Extension, male to stripped leads, 39.37 in (1000 mm)**

**Figure 8. CAB01155 - Extension, female to stripped leads, 39.37in (1000 mm)**

**Figure 9. CAB01151 or CAB01153- Frame to panel LLID adapter, male to white LLID connector**

**Figure 10. CAB01154 - Frame to panel LLID adapter, female to white LLID connector, 39.37 in (1000 mm)**

**Figure 11. ACT00415 - Actuator, stepper drive for CTV inlet vanes**

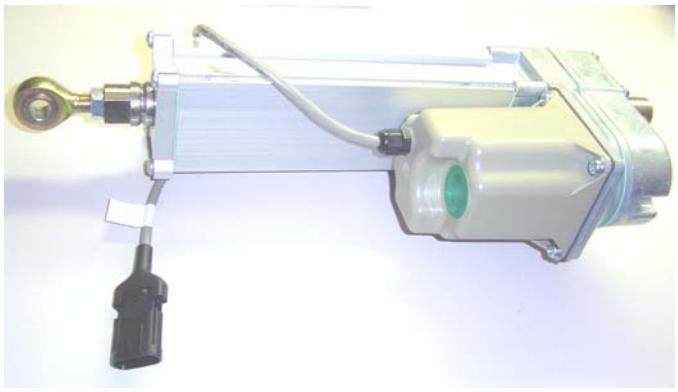
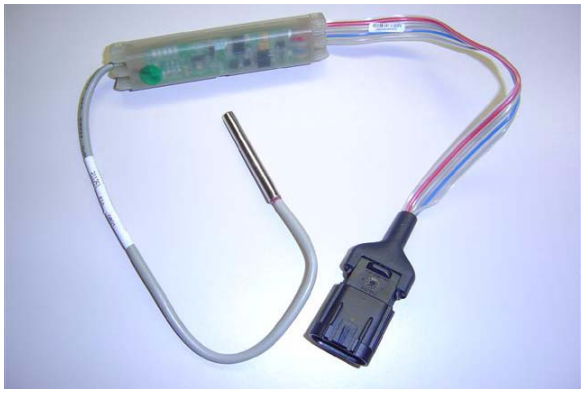


**Figure 12. SEN01314 or SEN01340- Temperature sensor - high & standard range**



***Note:*** *Early releases will use flat wire terminated by a male connector but will change to round cable in the future. Part numbers will sub to new items.*

**Figure 13. TDR00334 orTDR00335- Pressure transducer - low and std range**

***Note:*** *Early versions of this sensor will have the flat cable terminated by a male connector as shown but future production will have the male connector incorporated into the housing of the pressure sensor*

**Figure 14. SEN01219 - Liquid level sensor**

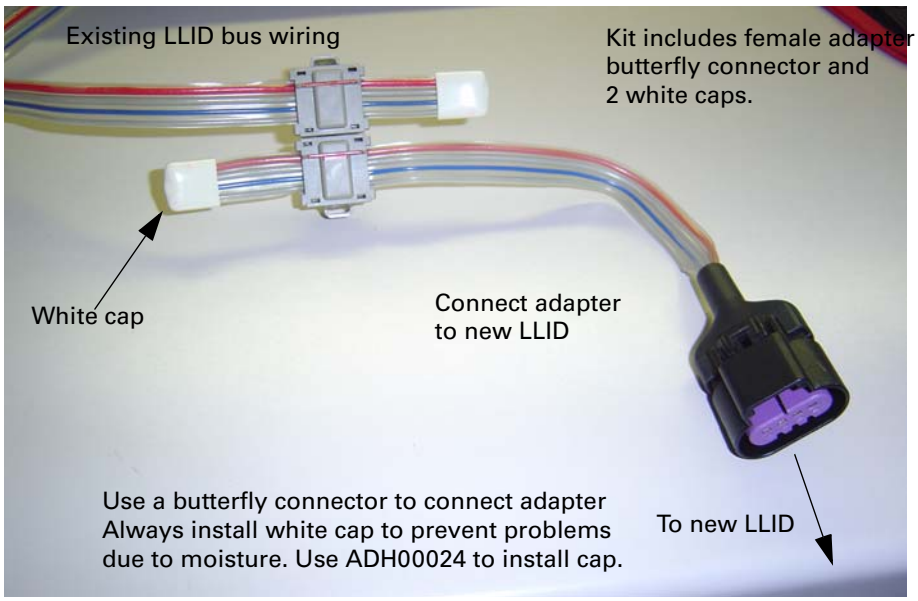
**Figure 15. Electronic expansion valve**

**Figure 16. BLK01115 - White four place screw terminal connector (used on CTV Industrial option INDP)**

## Connect a new sensor to existing four wire bus

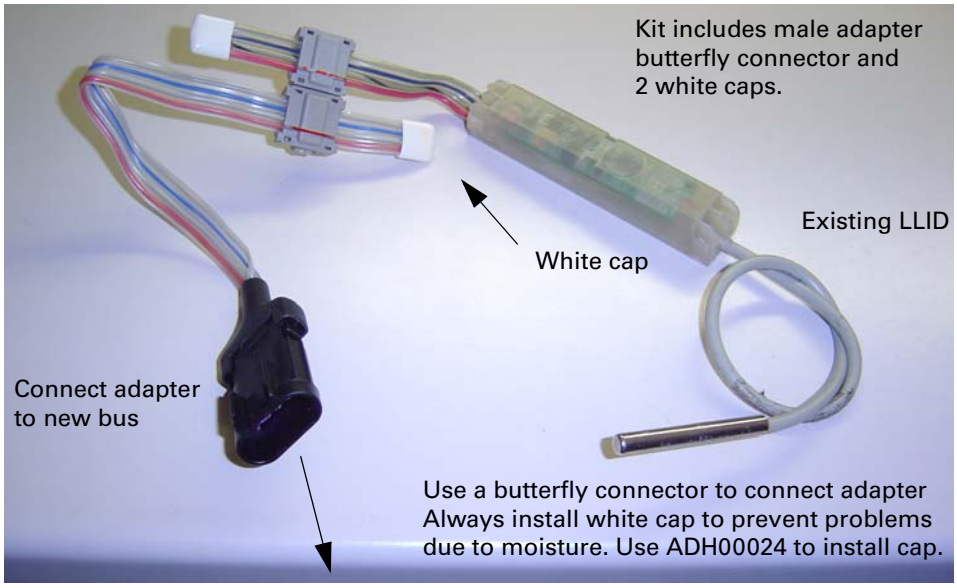
The original design flat wire LLID's will remain available for a short time. The following adapter kits will be available for connecting various configurations of old or new LLID's and cable. When the flat wire LLID's are no longer available the PRIDE™ distribution system along with CATS™ parts identification system will substitute to the newer LLID's having the pluggable connector. There will be notes that specify that an adapter kit may be needed to connect to the flat wire bus. The adapter kit will NOT ship in the package with the new LLID's.

**Figure 17. KIT12559 - Adapter Kit, four flat wire harness female connector kit**



## Connecting a existing LLID to the pluggable connector system

**Figure 18. KIT13723 - Adapter Kit, four flat wire harness male connector kit**




## Plug wire identification

**Figure 19. Female Plug wire identification (Wire color referenced to round cable)**

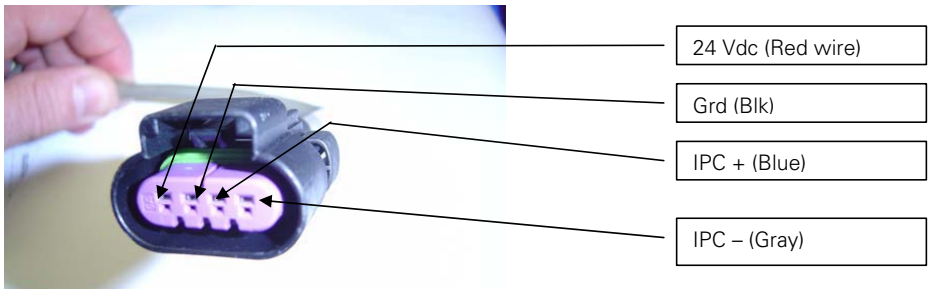
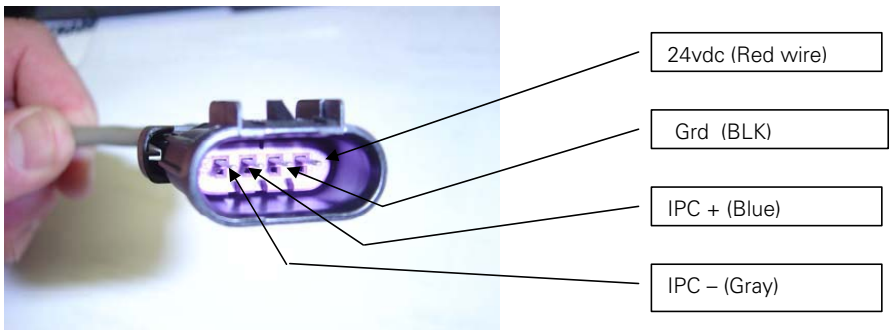



**Figure 20. Male Plug wire identification (Wire color referenced to round cable)**



## Product changes

Units built with the design sequence listed below or later have the new connector system installed. Refer to digit 10-11 of the unit model number.

CVHE - 4F and later,
CVHG - 2M and later
CDHG - 1J and later
CCGC - B0 (China gear drive)
PRGD - E0 and later
RTHD - H0 and later (Pueblo)
CVHF - 2W and later
CDHF - 1J and later
CCHC - 2A and later (China direct drive)
CVRD - F0 and later
RTAC - N0 and later (Pueblo)
CGWF/CCAF - D0 and later

## Questions

Contact the Product Technical Service department with questions regarding this Service Bulletin. They can be reached at:

| | |
|---|---|
| La Crosse | techservice@trane.com<br>Products: CVHE, CVHF, CVHG, CDHF, CDHG and PRGD |
| Pueblo | techservicepueblo@trane.com<br>Products: RTHD, RTAC, CGWF and CCAF |
| Global Parts | atechnicalservice@trane.com<br>Products: aftermarket PRGD and CVRD |

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| | |
|---|---|
| Literature Order Number | PART-SVB16A-EN |
| Date | May 2006 |
| Supersedes | New |
| Stocking Location | Electronic Only |