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Please feel free to pass copies of the newsletter along to anyone who would benefit from the information presented in it.

The latest additions of **TechLine** can be viewed at <http://www.container.carrier.com>.

TechFact

Loss of Cool Logic (Scroll)

With the addition of software release 5315 and greater, the scroll unit will have a loss of cool " loss of refrigerent charge" feature.

A new Alarm 15, loss of cool alarm, will be generated when the Suction Modulation Valve is greater than 15% open, the unit is operating in either the economized or standard modes of operation, and the return air to supply air temperature difference is less then 0.5C after 4 minutes of compressor run time.

When the alarm occurs the unit will revert to a failure action:

With a Perishable Set Point - Failure action C (Evaporator Fan Only) or Failure action D (All Machinery Off) as determined by User Selectable code select 29.

With a Frozen Set Point - Failure action D (All Machinery Off)

The alarm will remain active until the unit is power cycled. Note, power cycling does not correct the alarm. The unit should be inspected for cause prior to releasing.

□ P. Hoover

TechTips

Pass It Along

The **TechLine** newsletter is written by CTD Service Engineers and is distributed worldwide, however we limit the actual mailings to CTD service centers, customers and their end users.



TRANSCOLD

Please circulate this newsletter to all of your support personnel

General

Number of Days Since Last Successful PTL.

With the addition of software release 5315 (scroll) and 5127 (Recip) or greater, code select **49** has been added to allow the technician to view the number of days since a successful pre-trip sequence was completed.

When scrolling to code select 49 the right display will show the number of days in whole numbers since the last successful completion of an Auto (P0-P6), Auto2 (P0-P10) or Auto3 (P0-P8) sequences with no test failures.

On initial loading of software – it shall be assumed that no successful pre-trip sequences have been completed upon initial loading of the software. In this case, the value shall default to 9999. The value will reset to 0 days after successful completion of a pre-trip sequence or after initiation of a trip start. The value will not reset if the pre-trip sequence was terminated prior to completion or if any of the tests in the sequence fail.

Note: the days since the last pretrip will also be reset upon entering a "Trip Start" via all methods except by timer.

□ P. Hoover

FAQ

Data Analysis

Q: From time to time, when looking at downloads I noticed an "unable to decode event ##" called out on the report. What are these and why do they occur?

A: The unable to decode event message is a result of the DataLine interrogation program not being able to interpret the event generated by the controller. This normally occurs as a result of the controller having a new operational software version installed in the controller, along with the use of an older version of DataLine interrogation software. If this event occurs, it is recommended that the interrogation software be upgraded to the latest released version.

Note, DataLine interrogation software will lag behind operational releases. If you are using the latest version, then you will need to wait for the upcoming release.

Q: If a Datacorder Sensor (SRS –dal70) fails due to probe check, does the Datacorder switch to the controller (STS) sensor for recording purposes in the Datacorder?

A: NO, The Datacorder will continue to log the invalid sensor.

Q: What are the meanings of the following events?

- ❖ Power On (Battery Not Present)
- ❖ Power Down (Battery Not Present)
- ❖ Power On (Battery Present)
- ❖ Power Down (Battery Present)

A: These events indicate that the AC power has either been applied or removed from the unit. The battery comment indicates whether there is a charged battery back present in the controller.

i.e Power Down (Battery Not Present) means AC voltage is not applied to the unit and that the Battery Not Present means that it is either missing or not charged.

Q: Is the dcx file a legal document?

A: Yes, the data in the dcx format is considered a legal document that can be used for load claim purposes.

□ P. Hoover

TechTips

Software Release

Listed are the latest software releases for the models listed. All of these can be downloaded from TransCentral within the Carrier Transicold Website except for DataLine. DataLine can be upgraded from the home page as long as you own an original copy.

See the procedures on the Website for downloading.

- ❖ Scroll - ML2i/ML3 – 5316
 - ❖ Recip - ML2i / ML3 – 5130
 - ❖ ML2 – 1207
 - ❖ ML2 Datacorder – 2104
 - ❖ CA – 3109
 - ❖ DataLine - 1.5
-

DataBANK™

As part of its continuous product improvements and meeting customer needs, Carrier Transicold introduced a new patent-pending technology called DataBANK. The new DataBANK card, shown in the picture below, interfaces with the controller through the programming slot and can download the data at a much faster rate when compared to the PC or DataReader devices that are currently used in the field.



DataBank Card
P/N 12-00615-00

The DataBANK and ML3 software cards are physically the same PCMCIA card but with different file content. As in the case with the ML3 card, the DataBANK card files are accessible through the Omni PC Card Drive, introduced in the last TechLine issue. The Omni Drive can be used for periodic upgrades of the DataBANK file, as well as to give the user the ability to view downloads saved on the DataBANK card when opened via DataLine software.

The DataBANK file format is: **READ05xx.ML3** where "xx" is the version number. This file should be the **only** file, other than saved downloads (dcx files), inside the card memory. Any other files may result in card corruption.

The unit trip data can be downloaded with the DataBANK card if the battery pack has sufficient charge, or the unit can be plugged into power. Data is downloaded by first powering-down the refrigeration unit (if running), inserting the DataBANK card in the controller programming slot, and then powering-up the refrigeration unit, (battery power can be used if unit is not plugged in). The display module will show the available card memory space and the user can make the choice of downloading by trip, last 30, 60, 90 days, or ALL Data download by pressing arrow keys on the keypad. Depressing the enter key at the chosen selection will execute the downloading. Upon completion, the display will show "dnLd done". The unit should be powered down before the card is removed. If battery power was used, the controller will go back to sleep a few seconds after completing the download.

Downloaded/transferred files to the DataBANK card will be in Carrier 'dcx' format. A file name example would be: **ABCD5083554_0410200150.dcx**, where the first part of the name is the actual container number while the second part is the year, month, day, hour, and minute of the last event record or sensor data record contained in the transfer. If the unit does not have a valid container number, then the last seven digits of the controller serial number will be substituted with a "CTDE" prefix; therefore, the above file name example would look like: **CTDE4255636_0410200150.dcx**.

Operational Notes:

If the DataBANK card contains a dcx file from the same controller that is less than twenty-four hours old, the older file will be replaced by the more current data once the transfer is initiated.

Data transfers will be completed fully or not at all. If not enough space is available to complete the transfer, the transfer will not be initiated and '_CARD_FuLL' will be displayed.

In some cases, the MicroLink 3 controller will take up to 30 seconds to complete the power up sequence after the removal of the DataBANK card. During this period the status LED on the MicroLink 3 controller will blink, but the display will not power up. During this period the "boot loader" software is being updated.

Currently, DataBANK cards can be used for downloading data from units fitted with the ML3 controller only. This feature will be optimized for the ML2i in 2005.

Feature Article - DataBANK™ (cont)

If the card is write protected, then "CHECK CARD" will be displayed (see the card picture for the correct switch position).

If for any other reason a download/transfer cannot be completed, the application will attempt to erase any partial transfer and "bAd CaRd" will be displayed.

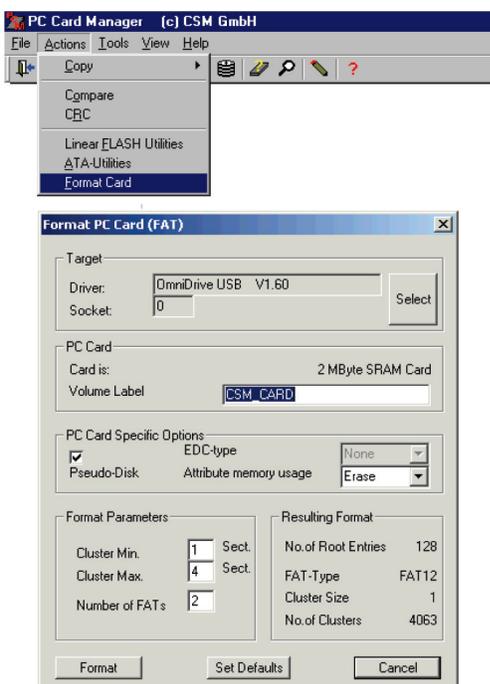
□ Z. Asprovski

TechTips

Formatting the ML3 PCMCIA Card

The new ML3 controller utilizes a PCMCIA card for loading software and configuration codes, as well as for downloading data from the controller via Databank. If in the process of either uploading software or downloading data the user sees a "**Bad Card**" message on the unit display, it will be necessary to re-format the PCMCIA card.

Procedure to re-format the PCMCIA card using the OmniDrive



1. Using a PC that has the OmniDrive installed on it, click on the PC Card Manger icon located on the desktop. If the icon is not there, locate the OmniDrive program file on the hard drive. It is usually installed at C:\Program Files\PCM\PCM.EXE, but may be at a different location depending upon where the user installed it. If you cannot locate the file, use the Windows search option accessed from the Windows Start menu and search for PCM.EXE file. After locating the PCM.EXE file, click on it to open. This will open the PC Card Manager.

2. Verify that the Write Protect switch on the PCMCIA card is not in the Not Protected position. Install the card to be formatted in the OmniDrive. Remember to install the card with the label face down.

3. As shown below, in the PC Card Manager, go to **Actions, Format Card** and verify that the settings match the ones shown. After verifying the setting, click on **Format** button and card will be formatted.

4. After successfully formatting the card a message, "**All Jobs successfully done**" message will be displayed.

5. If you see "**Check Media**" button in the drop down menu instead of "**Format**" referenced in step 4, then the card was unable to be formatted. Verify that the Write Protect switch is not in the protected position and re-try formatting. If after verifying switch position, you still get the "**Check Media**" message, the card is defective and is unable to be formatted. Replace the card.

□ G. Busse

TechTips

Genset Annual Inspections

Since the introduction of the 69RG and 69UG model generator sets, some OEM reliability enhancements have been introduced.

We would like to provide detail on these enhancements and suggest that they be implemented at your next scheduled maintenance interval.

Oil Filter Repositioning - The oil filter housing, if in the horizontal position, can be relocated to the vertical position to eliminate nuisance oil spillage during oil filter changes. (Refer to *TechLine* Volume 1, Number 8, 2003)

Hour Meters – Change the 12 volt hour meters from continuing to clock time if the unit was to run out of fuel and or the start switch left in the RUN position to operating only when the engine is operating.

UG Models (PIDS)

UG0413 & Lower Not Applicable (230volt hour meter)

UG0414 to UG999 Can Be Rewired

UG1000 & greater Changed OEM

RG Models (PIDS)

RG0429 & Lower Not Applicable (230volt hour meter)

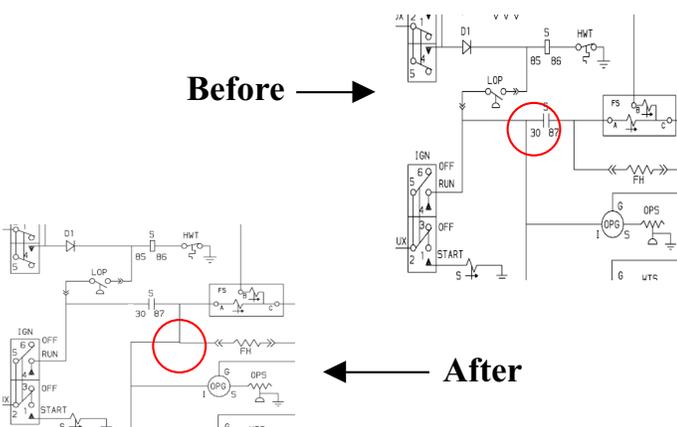
RG0430 to RG 967 Can Be Rewired

RG0968 & Higher Changed OEM

This is accomplished as follows:

1. Removing the S30-OPGI wire from the S30-IGN4 wire on the S30 terminal on the safety relay.
2. Perform a 2 to 1 butt splice with the S87-FHB wire.

This will place the hour meter on the load side of the safety relay preventing the continuous running of the hour meter.



AC Generator Terminal Block – Operating in some extremely contaminated environments can cause the terminal block of the generator to become coated with residue. This coating, if not removed during the annual maintenance of the unit and left for long durations, can cause a short (line to line) to occur if the contaminant has any electrolytic properties. This potential can be eliminated by removing the top cover and using butt splices and heat shrinks, remove both the Line and Load side of the L1, L2, and L3 wires from the terminal block and butt splicing them together. At the same time, clean the screws on the remaining wires on the terminal block and apply a silicone sealer to the terminal block. This will prevent the contamination from affecting the operation of the unit.

Shockmounts - These seemingly insignificant components are the lifeline to the longevity of any piece of equipment. With worn or damaged shock mounts, vibration and shock loads are transmitted through the equipment (in this instance the genset frame) into the components within the frame. These inputs can cause catastrophic failure, which can occur in either the frame structure itself, main AC generator, or to the bearings of the engine causing fretting. It is very important to check the engine and generator shock mounts at the recommended maintenance intervals and replace them as needed. By performing this function, you can ensure that your genset will remain in operating condition.

Oil Bath Air Cleaners – Under certain conditions, (heavily saturated moist air) droplets of water may be drawn into the oil cup through the oil cup-retaining ring of the oil bath air cleaner. This results in frequent changing of the oil. The installation of a channel type gasket on the inner cup of the assembly will significantly reduce the amount of water ingress. These gaskets may be obtained by contacting your local Service Engineer.

□ G. Barkowski

TechTips

Anti-Corrosion Coating

It is recommended that if an AC Alternator is replaced that an anti-corrosion coating material, P/N 02-00083-00, (available from Replacement Components Group) be applied to both the bearing housing and the bell housing mounting surfaces prior to re-assembly. This will assist in the prevention of corrosion.

□ G. Barkowski

FAQ

Scroll Compressor Troubleshooting

Q: The scroll compressor makes noise when turned off. How do I know if something is wrong with the compressor internally and needs to be replaced?

A: Below are some important notes to remember as well as the recommended procedure for diagnosing a "noisy" scroll compressor.

- The Scroll compressor can rapidly equalize its internal pressure, which could drive the compressor backwards. During this condition there may be a loud noise as pressure equalization takes place.
- If the unit is turned OFF while running in economized mode, pressure equalization could take place through the economizer port. This is normal and there is nothing wrong with the compressor.
- If the compressor discharge reed valve is damaged, pressure equalization will take place every time the compressor cycles off while running in frozen set.

Scroll Compressor Discharge Valve Checkout Procedure

1. Turn the unit ON and run it in full cool mode for five minutes.
2. If the unit has service valves, skip the next step and go to step #4.
3. Access Code Select 41 on the keypad and make sure **CAP** (Capacity Mode) is set to **UnLd** (Unloaded Mode); **SM** (SMV %setting) is set to **100%** ; **OIL** (Oil Valve) is set to **CLOSE** ; and **LIV** (Liquid Injection in StreamLINE Unit ONLY) is set to **CLOSE**. Set the **tIM** (Timer) to **3 00** (3 minutes) and run the unit for 2 minutes before going to step #5.
Note: If the timer is not active, the unit will run in whatever mode is normal for the current conditions and the test may not diagnose the compressor correctly.
4. Front-seat (fully close) the economizer service valve.
5. Turn the unit OFF.
6. Replace the compressor **ONLY** if noise is present after turning the unit off.

Z. Asprovski



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FAQ

Condenser Coils

Q: I would like to use a three row condenser coil (7mm p/n 81-01575-00SV) as a replacement to the four row condenser coil (3/8" p/n 69NT43-202-10SV) my unit now has. Can I use the three row coil as a drop in replacement for the four row coil?

A: No. The three row condenser coil (7mm p/n 81-01575-00SV) depth measurement from back to front is larger than that of the four row condenser coil (3/8" p/n 69NT43-202-10SV). The coil will not fit when you try to install the condenser cover.

Always use the component specified by the PID (Part Identification) number on the nameplate of the unit.

M. Donahoe

General

2005 School Schedule

Listed below is the planned schedule for Container training courses being offered for the first quarter of 2005. This information is also available on the Internet at <http://www.container.carrier.com/> and click on the Training tab.

JANUARY	Program	Location	Language(s)
10 - 14	1-Week Container	Mombasa, Kenya	English
17 - 21	1-Week Container	Port Said, Egypt	English
FEBRUARY			
1/31 - 2/4	1-Week Container	Tacoma, WA	English
7 - 11	1-Week Container	Long Beach, CA	English
7 - 11	1-Week Container	Lima, Peru	Spanish
14 - 18	1-Week Container	Santos, Brazil	Spanish, Portuguese
MARCH			
2/28 - 3/4	1-Week Container	Piraeus, Greece	English
7 - 9	3-Day Container Product Update	Liverpool, UK	English
15 - 16	2-Day Container/Genset Product Familiarization	London, UK	English

G. Busse



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Please circulate this newsletter to all of your support personnel



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