Digi-Cool Industries Ltd.
Digital Refrigeration System Analyzer

AK900
User manual

To take full advantage of your analyzer, please read this manual and store in a safe place for future reference.

v1.04

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1 9V battery (installed)

1 Dual Temperature Sensor

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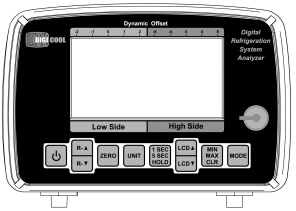
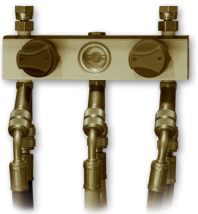


1 Two valve ball valve manifold

1 User Manual

1 Product Registration Card



Features and Use

General

The unit performs the following tasks:

- Sense and display pressures present in the manifold
- Calculate and display dew / bubble points corresponding to the sensed pressures, for the selected refrigerant
- Sense and display temperature of probe tip
- Calculate and display system superheat or subcooling, based on sensed pressure and temperature, for the selected refrigerant
- Displays maximum and minimum pressures observed since threshold reset

The unit has two 1/8" pressure ports, acting as two gauges: blue for low side, red for high side. All settings are controlled through the keypad and affect both sides of the display.

Some features of the unit include:

- Working pressure ranges:
  Low side: 0-200psia (1350 kPa, 13.5 bar)
  High side: 0-550psia (3000 kPa, 37.9 bar)
- Sensing resolution (precision):
  Low side: 0.25psi or 0.4"Hg (2kPa, 0.02 bar)
  High side: 1psi (7 kPa, 0.07bar)

- Includes profiles for 45 common refrigerants
- "Dynamic Offset" bar graph display
- Pipe-mounted temperature probe for automatic superheat and subcooling readings
- MAX and MIN pressure monitoring for control set-up
- Zero key automatically calibrates to local atmospheric conditions
- Large, easy to read LCD display
- Adjustable LCD display contrast
- Selectable reading update rates of 1 and 5 seconds, or hold current reading
- Upgradeable to handle additional refrigerants
- Automatic shutdown after 15 minutes of inactivity
- Low battery indicator
- Tough, weather resistant case for indoor / outdoor field use

Features of the unit are patented in the US (#5,311,745) and Canada (#2,107,134) by Digi-Cool Industries Ltd.

This unit is intended for use in an industrial or commercial environment. Use in a residential environment may cause interference with radio and television reception.

Proper Use

This product is intended for use by trained service personnel only, for use with vapor compression refrigeration, air conditioning and heat pump systems. Servicing of refrigeration systems require special training to ensure the safety of the service person, building occupants, local and global environment.

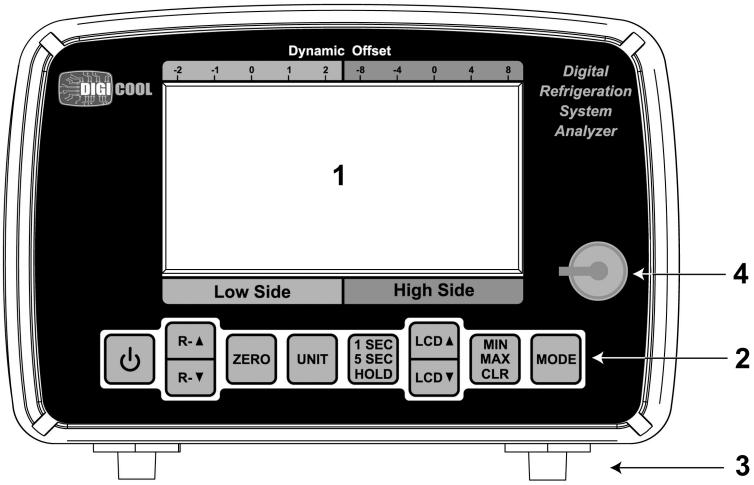
Ensure your service manifold is properly rated for the operational pressures of the analyzer, at up to 550psia (3000 kPa, 37.9 bars).

To prevent damage, never exceed the proof pressure of the analyzer:
Low side: 600psia (4100 kPa, 41 bars)
High side: 1500psia (10300 kPa, 103 bars)

For safe operation, ensure that the refrigeration system under test has working overpressure relief equipment installed, and that they are rated to trigger below the burst pressures of the analyzer:
Low side: 2000psia (13500 kPa, 135 bars)
High side: 5000psia (34500 kPa, 345 bars)

Refer to the instruction manual for your service manifold on its use.

External Features



1 Display

Extended temperature LCD display, protected with clear resilient window to prevent damage.

2 Keypad

Tactile response keypad is easy to operate, even with gloved hands.

3 Transducer Ports

1/8" NPT ports connect to the gauge ports of various service manifolds using supplied street elbows and swivel fittings.

4 Temperature Probe Plug

Connect the temperature probe to this port. When not in use, cover the plug with the sealing cap to maintain water resistance.

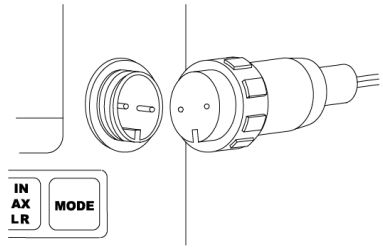
5 Vent

Allows for atmospheric and internal pressure adjustment without moisture entry. Do not cover this port.

6 Temperature Probe

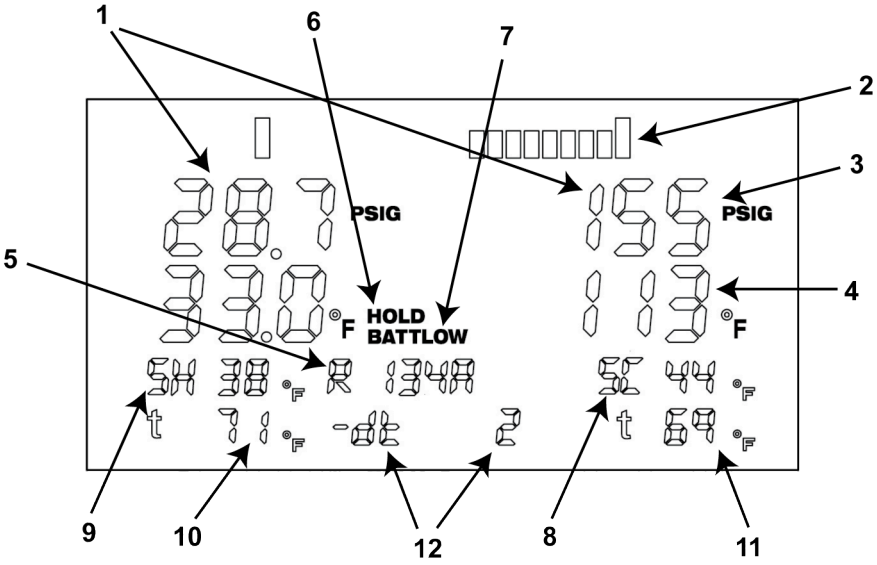
The temperature probe can be secured onto piping from 3/8" to 3" in outer diameter (1 to 7.5cm) with the attached hook-n-loop strap. The connectors are water resistant when mated or when covered by their protective caps. For accurate measurements, use a piece of pipe insulation over the sensor and pipe to insulate them against the ambient air.

To install the connector, align the key on the plug with the slot on the connector. Push connector while wiggling to mate together, and then tighten the thread on the blue collar to lock connector into place. When not in use, apply the attached cover to the connector to keep moisture and dirt out. The probe comes with a 10' (3m) long cord.



Display

The display of the unit is very user friendly. For users familiar with traditional manifold gauges, the readouts should be self-explanatory. The quantity of information offered to the user is more than any other gauge traditionally available. A full understanding of these features allow for rapid system analysis, for easier and more accurate trouble-shooting.



1 Low and High Side

In general, displays on the left side of the screen are associated with the low-pressure side of the refrigeration system, represented by the blue labeling. The right side of the display reflects the high-pressure side, represented by the red labeling.

The low or high side display will flash when one of the following abnormal pressure conditions occur on each side of the service manifold:

- The pressure detected has exceeded the working pressure range of the gauge, or
- The pressure detected far exceeds the proper operating range for the selected refrigerant, resulting in out-of-range temperature readings.

This may be caused by improper use of the ZERO key, or if the working pressure range has been exceeded. Try depressurizing the manifold and press ZERO to recalibrate to a proper atmospheric reference. Also ensure the proper refrigerant is selected.

Bear in mind that readings are subject to device accuracy limitations. For example, a perfect vacuum of 29.9"Hg may be displayed as 29.8"Hg or cause the device to blink due to an excessive vacuum

reading. Given the wide operating range of the analyzer, extremely accurate vacuum readings are intrinsically difficult to achieve.

When no pressure unit is indicated, the amounts shown are in bars.

2 Dynamic Offset Bar Graph

Each bar graph represents changes to each pressure reading since the digits were updated. The graphs are updated four times every second. They allow the user to monitor pressure dynamics in the system closely.

Each segment in the low side bar graph represents ¼ psi (2 kPa, 0.02 bars) of change in the low side reading. On the high side, each segment represents 1psi (8 kPa, 0.08 bars) of change in the high side reading. The hash marks above the bar graph show these units for quick reference. Segments on the left of the center mark mean decreased pressure, while segments on the right indicate increased pressure.

3 Pressure

The "numeric pressure" display is below the bar graph. The low side pressure is shown in 0.1 PSI (1 kPa, 0.01 bar); the high side is shown in PSI (kPa, 0.1 bar).

When operating in imperial gauge mode, vacuum readings below atmosphere are shown in "Hg below atmosphere.

4 Temperature

This field displays the saturation temperatures of the selected refrigerant at the indicated pressure. The left side reading is the vapor saturation (dew) point for the low side pressure, while the right side reading is the liquid saturation (bubble) point for the high side pressure reading.

5 Selected Refrigerant

The currently selected refrigerant is shown here. The characteristics of the selected refrigerant are reflected in the temperature readings discussed above.

ASHRAE	Trade # shown	Trade #
R12	12	12
R1234yf		
R22	22	22
R-123	123	
R-124	124	
R134A	134A	134A
R236ea	R-236ea	
R236fa	R-236fa	
R245ca	R-245ca	
R245fa	R-245fa	
R290	290	R-290 (Propane)
R401A	39	MP39
R401B	66	MP66
R402A	80	HP80
R402B	81	HP81
R404A	62	HP62 FX-70
R406A	406A	406A / GHG12
R407A	407A	407A
R407C	9000	Suva 9000
R408A	10	FX-10
R409A	56	FX-56
R410A	20	AZ-20
R413A	49	
R414B	414B	HotShot
R416A	416A	FRIGC® FR-12
R417A	59	ISCEON® 59
R420A	420A	420A
R421A	421A	Choice R421A
R421B	421B	Choice R421B
R422A	79	ISCEON® 79
R422B	22b	ICOR XAC1
R422C	422	ICOR XLT1
R422D	29	ISCEON MO29
R424A	44	RS-44
R426A	24	

R427A	R-427A	
R428A	52	
R434A	45	RS-45
R437A	49	
R438A	99	
R500	500	500
R502	502	502
R507	50	AZ-50
R508B	95	Suva 95
R600A	600A	600A (Isobutane)

If the "R" prefix is visible, the ASHRAE reference number is being shown. If "R" prefix is not visible, the number shown is the numeric portion of the refrigerant's trade name, as shown below. The user may change the set of names displayed by holding "R-↑" during power up.
The unit has been designed for use with modern HCFC and HFC refrigerants, some of which operate at substantial pressures. The resolution may be somewhat coarse for work with low-pressure refrigerants such as R-11 or R-123. Therefore, these refrigerants are not included with the unit. Contact the manufacturer if you wish to upgrade your unit to handle these or other refrigerants.

6 Hold Time

These indicators show how often the digital readings are being updated. The 1SEC indicator shows that it is updated once every second. The 5SEC indicator means the digits are updated once every 5 seconds. The HOLD indicator means the digits are not being updated but the bargraph remains dynamic.

7 Low Battery

The indicator will be visible when the battery should be replaced. Continuing to use the unit when batteries are low will lead to less accurate measurements.

8 SubCool Temperature

This character of the display is for the subcooling reading, in either °F or °C. If temperature reading higher than the high-side bubble point for the selected refrigerant, the SC is negative.

9 SuperHeat

This character set of the display is the superheat reading, in either °F or °C. If temperature reading lower than the low-side dew point for the selected refrigerant, SH is negative.

10 SuperHeat Temperature (lowside sensor)

The is the actual temperature being measured by the Superheat sensor on the line it is mounted on.

11 SubCool Temperature (highside sensor)

This is the actual temperature of the highside sensor on the line it is mounted on.

12 Delta T

This is the differential temperature of the highside sensor temperature minus the lowside sensor temperature should you want to take a 'delta T' differential reading.

When the MODE key is toggled the dt will then disappear and either the HI or LO will appear to:

- HI Maximum pressure recall mode: pressure fields display highest pressures sensed since threshold reset, and their associated saturation temperatures. In this mode, the 15-min automatic shutdown is disabled.
- LO Minimum pressure recall mode: pressure fields display lowest pressures sensed since threshold reset, and their associated saturation temperatures. In this mode, the 15-min automatic shutdown is disabled.

Keys

PWR

This key turns unit on for a period of 15 minutes. If it is pressed again while the unit is on, the unit will turn off.

- To disable automatic shutdown, hold UNIT while pressing PWR to turn the unit on. "Pr" will be shown on the screen. Press PWR to continue.
- Automatic shutdown is disabled when in HI or LO modes.

R- ↑ / ↓

These keys select between available refrigerants. When the last available refrigerant has been reached, the first one is shown again. If the unit has been upgraded with additional refrigerants, they will be shown following the original refrigerants. Refrigerants are labeled according to their ASHRAE designations or trade numbers.

- To change between ASHRAE and trade number display, hold R-↑ while pressing PWR when turning the unit on.

ZERO

Depress this once to calibrate the unit. Regardless of what pressures the low and high side are sampling at the time that this key is pressed, these pressures will then be considered the "0" or atmospheric pressure reference reading. For best accuracy, allow unit to reach ambient temperature before pressing ZERO.

UNIT

This key toggles the pressure and the temperature readings through the following combinations of pressure units in sequential order:

- kPa / ºC (atmospheric reference)
- BAR/ ºC (atmospheric reference)
- PSIA / ºC
- PSIG / ºC
- PSIA/ ºF
- PSIG/ ºF

Temperature units also apply to superheat and subcooling readings when active.

NB To toggle the backlight on and off in the display, hold the UNIT key down for 5 seconds.

1SEC / 5SEC / HOLD

This key selects the time between updates of the numeric pressure reading and corresponding temperature displays.

For example, if the update time selected is 1SEC, the pressure and temperature displays are updated every second. With 5SEC, the display is updated every 5 seconds. If the update time selected is HOLD, the temperature and pressure readout are held at the readings when HOLD was initiated.

In HI and LO pressure recall modes, only 1SEC setting is available.

Regardless of the update period, the bar graph updates automatically 4 times per second. At the moment that the numeric readout is updated, the bar graph will clear itself. In this way, the bar graph indicates the current deviation from the displayed numeric reading.

LCD ↑ / ↓

These keys increase and decrease the contrast of the LCD display respectively.

MIN / MAX CLR

This key clears the memory of the HI and LO pressure recall modes. Depress this when you wish to begin a session of minimum and maximum pressure monitoring. Depending on the mode selected, there may not be any visible effect from this key press.

MODE

This key toggles between the following modes in sequence:

- Normal Mode*
- HI Maximum pressure recall mode
- LO Minimum pressure recall mode

- no temperature display if temperature sensor is not plugged in.

Using the Pressure Gauges

Once mounted properly onto a service manifold, the pressure gauges behave just like traditional needle pressure gauges. Usually, the low side of the manifold is connected to the low-side service port, and the high side of the manifold to the high-side service port.

Using Pressure Recall Modes

The pressure recall modes are useful when setting switching equipment and observing load changes over long periods. In HI mode, the highest pressure sensed since the MAX / MIN CLR button was pressed is shown for both low and high pressure sides, along with the corresponding saturation temperatures. In LO mode, the lowest pressures are shown.

To begin observing pressure fluctuations, press the MIN/MAX CLR key. If not in HI or LO mode, the display will not show any changes, but the threshold memory has been updated to the current pressure readings.

When in HI or LO modes, the dynamic update bar graphs is inactive. 15-minute automatic shutdown is also disabled to allow continuous monitoring of pressure. Be sure to turn off the unit manually when finished.

Using Temperature Modes

The temperature probe is designed for pipes of varying diameters. Using the hook-and-loop fastener or other types of straps, secure it firmly onto the pipe, with the concave side firmly on the pipe surface.

For best accuracy on temperature related measurements, insulate the sensor against ambient air by wrapping the installed sensor and pipe with a piece of pipe insulation.

Once the temperature probe is connected to the analyzer, the system automatically enters t mode after several seconds. Several operation modes are then available through the MODE key:

t mode

The temperature of the probe is shown on the lower right, following t. It is in ºF or ºC, depending on the unit selected. Depending on the measurement and sensor contact, it takes 30 seconds to 2 minutes for the sensor to settle to the correct temperature reading.

SH mode

The superheat mode is useful when verifying proper operation, to safeguard against compressor damage. Secure the temperature probe on the compressor suction line. Ensure the correct refrigerant is selected. If the system is operating properly, superheat should be between 10 to 30°F (5 to 15°C) while the compressor is operating steady-state. If superheat is negative, the compressor may be drawing some liquid.

SC mode

The subcooling mode is useful to verify full condensation. Some systems required subcooling for proper operation; refer to the equipment specifications. Secure the temperature probe on the condenser outlet line. Ensure the correct refrigerant is selected. If subcooling is negative, the refrigerant is not completely condensed, indicating poor heat rejection.

Backlight

In order to turn on the green backlight you will need to push on and hold down the units button for 5 seconds. This will then turn on the backlight for the duration of the 15 minute on cycle.

The absolute zero function

This gives the 900 the ability to zero the pressure readouts to absolute zero and thus read out accurately in high altitude locations. In order to take advantage of this function you will need to put the 900 into the ^{o}F/psia mode and then with both the low side and high side connected to a vacuum pump at 100 microns or less (the lower the better); press the zero key and hold it down for 4 seconds. The unit will then read 0 psia and reference every other pressure to that so that a high elevation atmospheric may read 3"Hg. with the hoses open to atmosphere. In order to go back to the factory settings, select ^{o}F/psig and again press and hold down the zero key for 4 seconds.

Dual Temperature Sensors and Delta T

The last feature enhancement is the dual temperature sensor assembly and the ability to switch not only back and forth between SH and SC but to read a 'dt' or delta temperature as the blue lead (SC) sensor temperature is subtracted from the red lead (SC) sensor. The blue sensor is the SH sensor as it is always associated with the low side and the vast majority of SH settings are taken for the evaporator superheat. Remember; blue=low side=superheat for evaporator whereas red=high side=subcooling for the condenser. The temperature "t" mode is always accessing and referring to the blue sensor.

Specifications

Sensing resolution:	
Low side:	0.25psi (2kPa, 0.02bars)
High side:	1psi (7 kPa, 0.07 bars)
Sensing accuracy:	0.6% FS ± 1 least significant digit
Working pressure:	
Low side:	0-200psia (1350 kPa, 13.5 bars)
High side:	0-550psia (3000 kPa, 37.9 bars)
Proof pressure: Tolerable pressure without internal damage	
Low side:	600psia (4100 kPa, 41 bars)
High side:	1500psia (10300 kPa, 103 bars)
Burst pressure: Tolerable pressure without lost of seal	
Low side:	2000psia (13500 kPa, 135 bars)
High side:	5000psia (34500 kPa, 345 bars)
Temperature sensor range:	-40 to 250°F (-40 to 125°C)
Temperature accuracy:	±0.9°F (±0.5°C) between 32 to 158°F (0 to 70°C)
Dimension:	7.3 x 4.9 x 2.6" (18.5 x 12.5 x 6.5cm)
Weight with batteries:	1.6 lb (~720g)
Battery life:	approx. 6 months with normal use
Usage environment:	Indoors and outdoors Dew and splash resistant Do not immerse in water
Storage and operational temperature:	
	-4°F to 122°F (-20°C to 50°C)

Care & Maintenance

General Care

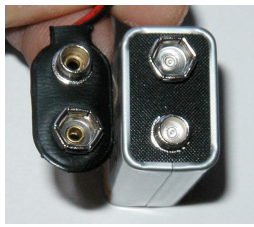
Follow these basic precautions to ensure that your analyzer will perform well for years to come:

- Do not push keys with sharp objects
- Do not expose the unit to extreme heat, or leave in direct sunlight for extended periods of time.
- Do not leave the unit in contact with water or other fluids for extended periods of time.
- Do not immerse the unit in liquids.
- Do not pull on the temperature probe cord.
- Avoid rapidly heating or cooling the unit.
- Store in a dry location near room temperature, away from direct sunlight, in a vibration-free environment.

Replacing Batteries

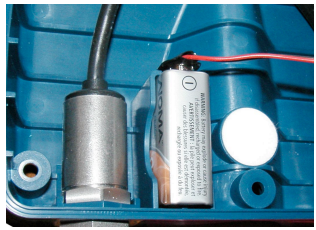
The unit is designed for use with a 9V alkaline battery. Carefully follow all instructions and warnings on the battery label and package.

1. Find a dry environment, preferably at room temperature or lower. This will keep condensation from forming in the unit at a later time. Air-conditioned rooms are ideal.
2. Remove the rubber boot if installed by stretching it and shifting it toward the front of the analyzer.
3. Using a dry towel, clean exterior so it is free of dirt and fluids.
4. Using Phillips screwdriver, remove the 5 screws and back cover.
5. Remove old battery by pulling the middle of the contact terminal with your fingers. Do not pry with metallic objects. Do not pull on the wire.
6. Each contact on the battery snap mates against the opposite gender contact on the battery. DO NOT connect the battery in reverse.
7. Place battery into the holding tabs in the



back half of the case.

8. Replace the back cover and install screws, while taking care not to crush internal cabling. Reinstall boot if desired.



If the unit will not be used for several months, remove batteries from the unit.

Do not heat or open battery. A battery not designed to be recharged can leak or rupture if recharged.

Where facilities exist, alkaline batteries can be recycled.

Cleaning

Do not use harsh acids or bases to clean the unit. To clean the unit, wipe with a damp cloth and a warm solution of soap and water. Do not immerse the unit under water.

Maintenance

Check the connections between the pressure port and your service manifold periodically. As the unit is exposed to heat and cold, the connections may loosen. Retighten if necessary.

If the pressure port is loose against the case of the analyzer, use a wrench to tighten the speed nut up against the unit. Do not use excessive force.

There are no user serviceable parts inside the unit. Do not disassemble the case.

Calibration

The unit is calibrated to stated accuracy during manufacturing. The absolute accuracy of the calibration is traceable to the U.S. National Institute of Standards and Technology (NIST).

The measurements will perform within the specified accuracy over its life. No calibration is necessary. If the unit gives erroneous readings, please return to the manufacturer for service.

Troubleshooting

If the unit is not performing properly, please use this troubleshooting chart. Try the listed actions under the appropriate problem, in order from top to bottom until the problem is resolved. If these steps do not correct the problem, please contact the manufacturer for service.

Symptom	Action
No display when PWR pressed	• Increase LCD contrast. If no response, press PWR and try increasing contrast again. • Check if battery is installed. Install fresh batteries and try again. • Check polarity of batteries • Follow the battery replacement procedures. If any batteries were left installed in reverse for some time, they may be drained. Remove the old set, wait 30 seconds, and install a fresh set. • If the unit is hot to the touch, allow unit to cool and try again.
Strange characters or patterns seen on display	• Press 1SEC/5SEC/HOLD to exit from any test mode displays entered accidentally • Press PWR to turn the unit off and back on • If the unit has been exposed to extreme cold, allow unit to warm above -4°F (-20°C) and try again • If the unit has been exposed to extreme heat, allow unit to cool below 122°F (50°C) and try again • Remove batteries, hold PWR key for several seconds, and reinstall batteries

Display flashes	• You may be exceeding the 200psia and 550psia working ranges, or selected a refrigerant unsuitable for the current pressure reading. • Disconnect pressure connection to system, press ZERO to recalibrate
LCD has dim contrast	• Press LCD ↑ to increase contrast • Replace batteries with a fresh set
Display visibly cracked	• Contact the manufacturer for service
Condensation inside display window	• Allow unit to warm to ambient temperature. • Open battery compartment and allow unit to dehumidify in a dry or air-conditioned environment for 24 hours.
Keys do not respond	• MIN/MAX CLR does not give visual results when pressed in modes other than HI and LO, but the pressure memory is cleared. • Contact the manufacturer for service
Pressure port loose against case	• Tighten the speed nut using a deep socket or wrench. Do not use excessive force. Apply thread lock if desired
Mode changes randomly without MODE key press	• When the temperature probe is installed, it automatically enters t/sh/sc modes. • When the temperature probe is removed, it automatically enters normal mode. • Check that the temperature probe is properly installed, fully mated and locked on the plug.
Cannot access t, SH or SC modes	• Check that the temperature probe is properly installed, fully mated and locked on the plug. If either temperature sensor is defective, their will be no t/sh/sc/dt showing up on the display.

End-of-Life Disposal

Contemporary electronic assemblies such as this unit contain trace amounts of lead, which is harmful to the environment if not properly disposed of. Also, much of the plastic case is recyclable where facilities exist.

Digi-Cool Industries supports the proper disposal of this product at the end of its service life. New companies and initiatives to collect electronic products for disposal are underway around the world. Please contact your local waste disposal agency or visit the following Internet sites for more information.

USA:
Environmental Protection Agency http://www.epa.gov/
Electronics Recycling Resources http://www.electronicsrecycling.org

Canada:
Environment Canada http://www.ec.gc.ca

Warranty

Digi-Cool Industries Ltd.
Limited One Year Warranty

What is covered
This warranty covers any defects in materials or workmanship in your new analyzer, with the exceptions stated below.

How long coverage lasts
This warranty lasts for 1 year after purchase date. Coverage terminates if you transfer ownership of the product to another party during the warranty period.

What is not covered
This warranty does not cover normal wear and tear of the unit in service, including but not limited to: (1) scratches to the surface finish, (2) discharge of the supplied batteries.

This warranty does not cover the supplied alkaline batteries or damage due to leakage of battery electrolyte. Remove batteries from the unit if it will not be used for some time.

Included refrigerant information is based on data from the U.S. National Institute of Standards and Technology (NIST), as expressed by the REFPROP program (standard reference database 23, version 7.0). Digi-Cool does not guarantee the complete accuracy of encoded refrigerant properties; users are advised to use due diligence when interpreting readings from the analyzer.

Only products purchased from Digi-Cool and authorized dealers are covered by this warranty.

Damage caused by misuse or operation outside of specified limits or purposes or in a non-approved manner, immersion in liquids, user abuse, war, civil unrest, terrorism, vandalism, fire, floods, lightning, power surges, industrial or other accidents, or other natural disasters are not covered. Refer to "Proper Use", "Specifications", and "Care &

Maintenance" sections of this manual for details on for the proper use and parameters of the analyzer. GUYS IF YOU USE YOUR TEMPERATURE SENSORS TO PULL YOUR 4X4 OUT OF AXLE DEEP MUD..WE WON'T WARRANTY THEM! (the sensor leads have been selected as a fine wire so as not to channel heat into the tiny delicate sensor and give your false readings. The downside of these as opposed to our previous 'truck pullers' is that they are quite delicate.

What Digi-Cool Will Do

Digi-Cool will repair any product that proves to be defective in materials or workmanship. In the event repair is not possible, Digi-Cool will either replace your unit with another functional unit (of the same model or another with equivalent functionality), or refund the full purchase price, at the discretion of Digi-Cool. If the affected part is an accessory not permanently attached to the main unit, Digi-Cool may elect to service or replace the accessory only, or reimburse the value of the accessory.

Before returning the unit for service, please remove all attachments and accessories not originally supplied with the analyzer, such as service manifolds.

How To Get Service

In order to be eligible for service under this warranty, you MUST register your purchase by returning the registration card attached or registering at our internet site (http://www.digi-cool.com/register) within 30 days of purchasing the product.

If service is required, contact the support department at Digi-Cool by telephone or visit our internet site for a return authorization (RA) number. The user is responsible for returning the product to Digi-Cool Industries or their authorized dealers. Fill out the following information and include it when you return the product. Properly package the product to prevent damage during shipping. Fill out the shipping label on page 31 and affix it to the package.

Digi-Cool Support:
Telephone: (250) 748-1783 Internet Site: http://www.digi-cool.com

Digi-Cool's obligation under this limited warranty is strictly and exclusively limited to the repair or replacement free of charge of such articles found to be defective in material or workmanship, or to refund the full purchase price upon the return of the defective article, on the condition that the purchaser gives prompt written notice to Digi-Cool of any claim under this warranty period within the two year warranty period and, if requested, returns the defective articles to Digi-Cool. Digi-Cool will not be liable for or is responsible for any expenses arising from or out of or in connection with repairs or modifications made to its articles using components, chemicals, materials or methods not approved by Digi-Cool, by persons not authorized or approved by Digi-Cool, or without Digi-Cool consent or approval.

Limitation of Liability

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, DIGI-COOL SHALL NOT BE LIABLE UNDER ANY CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER IN TORT, CONTRACT OR OTHERWISE, TO YOU OR ANY OTHER PERSON FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES OF ANY KIND (INCLUDING BUT NOT LIMITED TO DAMAGES FOR LOST OF PROFITS, BUSINESS INTERUPTION, OR OTHER PECUNIARY LOSSES), WHETHER ARISING FROM BREACH OF ANY EXPRESS OR IMPLIED CONDITION, GUARANTEE, WARRANTY OR REPRESENTATION, OR BASED ON CONTRACT, FUNDAMENTAL BREACH, NEGLIGENCE OR ANY OTHER THEORY OF LIABILITY. IN ANY CASE, LIABILITY ARISING OUT OF THE SALE OR USE OF THE PRODUCT WILL NOT EXCEED THE COST OF REPAIR OR REPLACEMENT OF THE PRODUCT.

Other Applicable Laws

As laws vary between jurisdictions, you may have additional rights at law which are not mentioned in this warranty. In the US, you may have rights that vary from state to state.

This warranty is governed by and will be construed in accordance with the laws of British Columbia, Canada, without reference to any rules of conflict of laws. The Courts of British Columbia will have jurisdiction over all claims, disputes and actions related to or arising from or out of or in connection with the warranty and the purchased product, and Digi-Cool and all purchasers hereby irrevocably attorn to the jurisdiction of those courts.

Service and Support

If you experience problems with the use of your analyzer, please read the features and troubleshooting sections of this manual.

Should your analyzer require service, you may return it to Digi-Cool Industries. Contact Digi-Cool Industries for a return authorization (RA) number. Once we receive your unit, the repaired unit or a replacement will be sent to you within 10 business days.

Within the continental United States and Canada, you can request rapid-replacement service for an additional fee. We will ship you a replacement unit within 2 business days, after which you can return the defective unit to us.

Before returning the unit for service, please remove all attachments and accessories not originally supplied with the analyzer.

Refrigerant Expansion

The unit is upgradeable to support new refrigerants. Please visit our Internet site or contact us to inquire about the availability of upgrades for new refrigerants.

Contact Information

Digi-Cool Industries Ltd.
P.O. Box 784
Duncan, BC
V9L 3Y1
Canada

Telephone: (250) 748-1783
Fax: (250) 743-4570
Internet Site: http://www.digi-cool.com
Email: info@digi-cool.com

Return for Service

Please contact us before you return your unit for servicing. Include the following information with your package:

Return Authorization Number
Detailed Description of the Problem
Name
Company
Address
City
State/Province
Country
ZIP/Postal Code
Daytime Telephone
E-mail address
Upgrades Installed