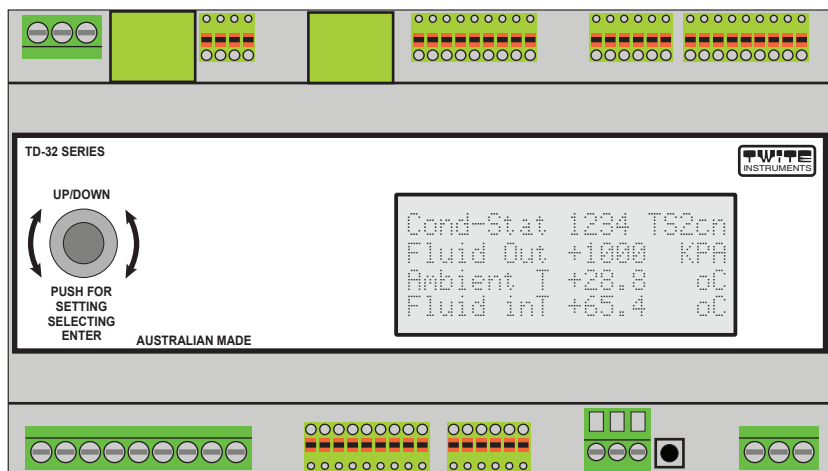


MultiScan

OPERATING MANUAL MODEL TD-32-C



3C COOLER/DRICON CONDENSER CONTROLLER



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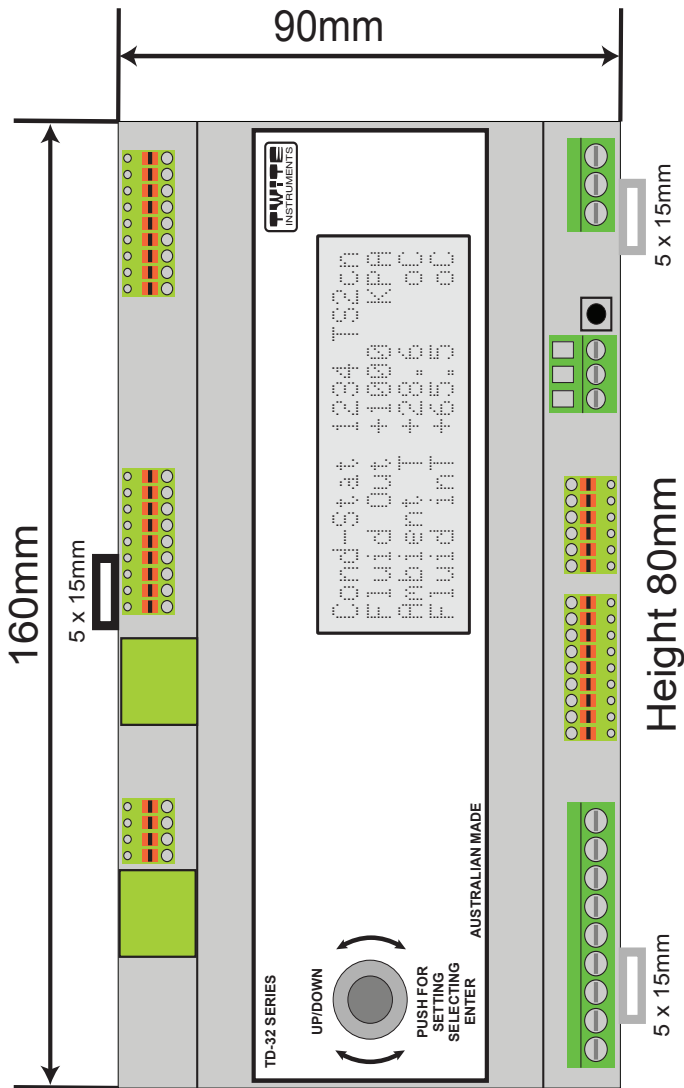
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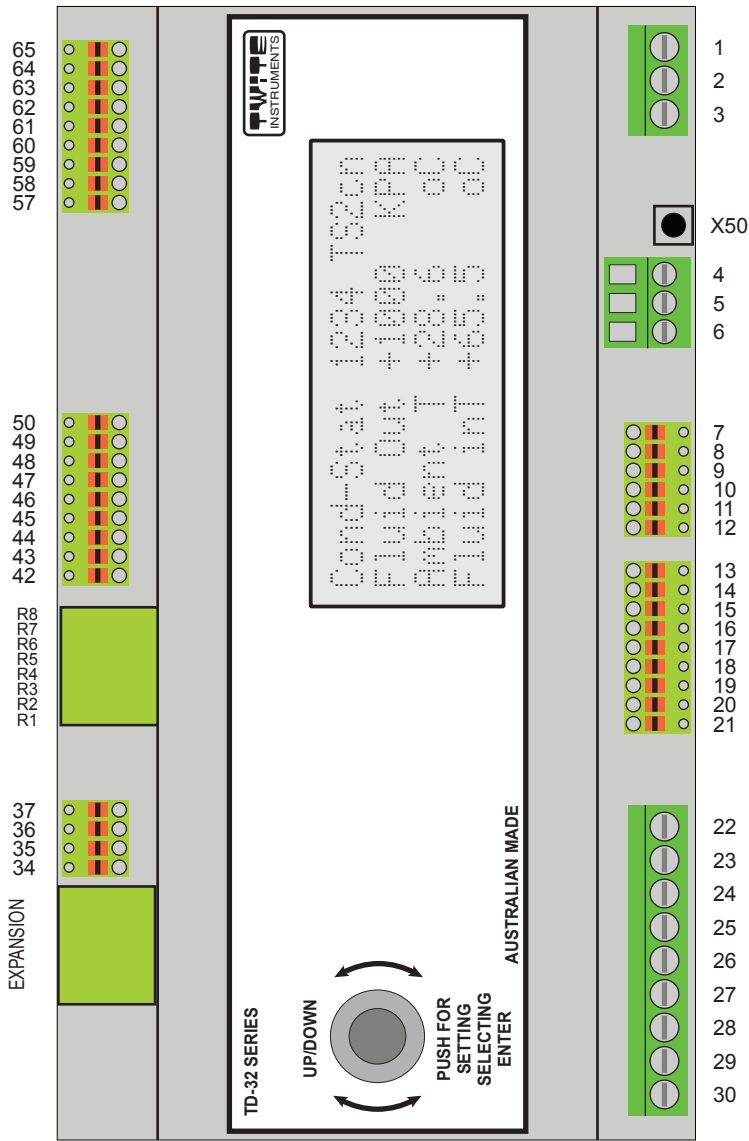
INSTALLATION :-

DIN RAIL MOUNT SIZE OF UNIT.



INSTALLATION :-

TERMINAL NUMBERS.



INSTALLATION :-

MULTISCAN POSITIONING AND MOUNTING.

The unit should be mounted at a level for easy viewing and access to setting knob, using the DIN rail mounting to mount to the DIN rail within the cabinet. Ensure it is in a dry area and not in direct sunlight and not subject to any vibration.

The unit must be mounted as far away from contactors, switching motors, solenoids etc. as possible and if possible mount the unit within its own cabinet.

MULTISCAN UNIT POWER CONNECTION.

Power to the unit must be 24 V dc. and connected to the terminal Block numbers 1 = Ground, 2 = the negative or ground side and 3 = the positive side).

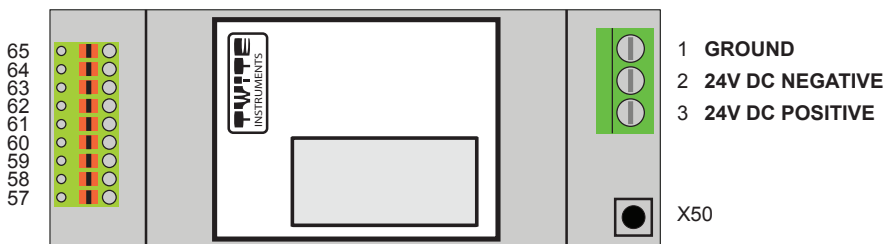
NOTE:- If more than one MultiScan is connected to the same 24v dc power supply, all terminals numbered 2 must be connected to the same side of the 24v dc (ground) and all terminals numbered 3 must be connected to the other side of the 24v dc (positive).

The power supply that is used must be used for the MultiScan only (not connected to any other units) and the cable must not run near or with any control cables.

The power supply cables must be kept away from any control cables that are connected to the relay control outputs, also sensor and transducer cables must be kept away from the control cables.

NOTE:- Terminal 1 and 2 are connected together on the circuit board.

NOTE:- The power supply for the unit should be left on at all times to conserve the battery power for the Real Time Clock and Set Points memory. See Battery Replacement later in this manual to change the battery.



INSTALLATION CONT.

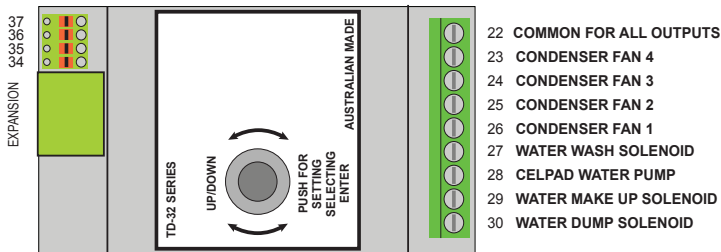
CONTROL OUTPUT POWER CONNECTIONS :-

Power for compressor and condenser control can be up to 24 V ac. and connected to the terminal Block

MULTISCAN CONTROL OUTPUT POWER CONNECTIONS. VOLTAGE ON ANY CONTROL OUTPUT AND COMMON MUST NOT EXCEED 24 VOLTS AC AND TOTAL CURRENT OF ALL OUTPUTS MUST NOT EXCEED 5 AMPS. ALL CONTROL CABLES MUST BE KEPT AWAY FROM THE SENSOR AND POWER CABLES THAT RUN THE UNIT.

Terminal No.

- 22 - The Active common input.
- 23 - Condenser fan 4 control output.
- 24 - Condenser fan 3 control output.
- 25 - Condenser fan 2 control output.
- 26 - Condenser fan 1 control output.
- 27 - Condenser water wash solenoid output..
- 28 - Condenser celpad water pump output.
- 29 - Condenser water make up solenoid output.
- 30 - Condenser water dump valve output.



INSTALLATION CONT.

MULTISCAN DIGITAL TEMPERATURE INPUT TERMINALS :-

DS18B20 Digital Type (up to 8 temperature sensors may be connected):-

Temperature probes are fitted with 1 meter of cable each (may be extended to a maximum distance of 100 meters using twisted pair shielded cable).

The shield must be connected to ground at the MultiScan terminal number 50 and the shield of the sensor cable, the positive, terminal number 48 must be connected to the white wire of the sensor and the signal, terminal number 49 must be connected to the blue wire of the sensor.

The joins for any extensions must be kept dry and clean and not subject to any voltage or damage will occur.

Each sensor is calibrated to ± 0.5 degrees Celsius (manufactures statement).

Sensors may be calibrated by the end user. See later for calibrating sensors.

Sensor cables must not run parallel or near voltage cables & must be kept well away from voltage and other control cables, at least 2 meters.

Terminal No.

- 50 - Shield of each cable (Ground).
- 49 - Signal all Blue wires to sensors.
- 48 - Positive White for each sensor.

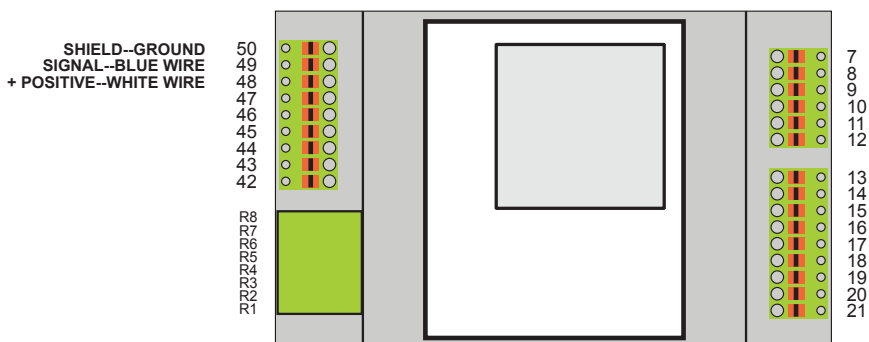
Any sensor may be used for control of the ambient temperature and if more than one sensor is used for ambient (celpad pump) control, the average of all sensors used will be used as the control temperature.

Any sensor may be used for control of the condenser (if controlled on temperature and not pressure) and if more than one sensor is used for control, the average of all sensors used will be used as the control temperature for the condenser fans.

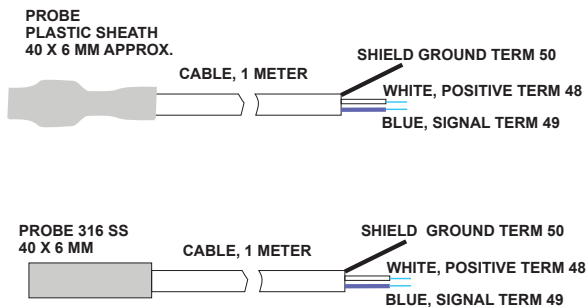
INSTALLATION CONT.

MULTISCAN DIGITAL TEMPERATURE INPUT TERMINALS CONT :-

DS18B20 Digital Type. Up to 8 temperature sensors may be connected



Types of sensors Available



INSTALLATION CONT.

MULTISCAN ANALOG TEMPERATURE INPUT TERMINALS :-

PT100 Analog Type (up to 7 temperature sensors may be connected) or

AD590 Analog Type (up to 7 temperature sensors may be connected)

But not both types on the same MultiScan.

When the MultiScan is ordered, the type of sensor to be used must be stipulated as the PCB must be configured by the manufacture.

Temperature probes that are of the type PT100 (platinum type with a resistance value of 100 OHMS at 0.0 oC) of various types can be fitted to the unit.

The PT100 type must be supplied by the end user and may use only the 2 wire type of sensor. Below is the wiring diagram and the internal jumpers that are required to allow for this type of sensor to be used.

AD590 types can be supplied by the manufacturer if required.

Sensors may be extended to a maximum distance of 100 meters using twisted pair shielded cable.

If extended, the shield must be connected to ground at the MultiScan end only and must be continuous for the full length.

The joins for any extensions must be kept dry and clean and not subject to any voltage or damage will occur.

Sensors may be calibrated by the end user. See later for calibrating sensors.

Sensor cables must not run parallel or near voltage cables & must be kept well away from voltage and other control cables, at least 2 meters

Any sensor may be used for control of the ambient temperature and if more than one sensor is used for ambient (celpad pump) control, the average of all sensors used will be used as the control temperature.

Any sensor may be used for control of the condenser (if controlled on temperature and not pressure) and if more than one sensor is used for control, the average of all sensors used will be used as the control temperature for the condenser fans.

INSTALLATION CONT.

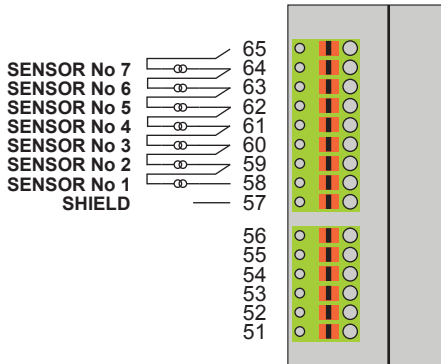
MULTISCAN ANALOG TEMPERATURE INPUT TERMINALS CONT:-

PT100 Analog Type (up to 7 temperature sensors may be connected):-

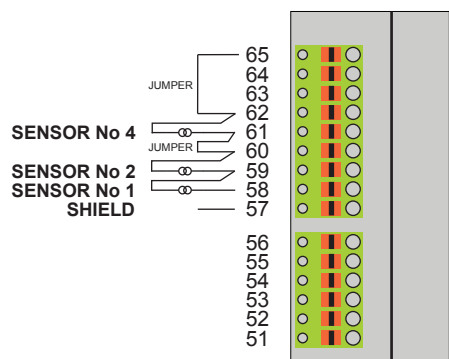
Terminal No.

- 57 - Shield of each cable.
- 58 - Sensor number 1 first wire.
- 59 - Sensor number 1 second wire and sensor number 2 first wire.
- 60 - Sensor number 2 second wire and sensor number 3 first wire.
- 61 - Sensor number 3 second wire and sensor number 4 first wire.
- 62 - Sensor number 4 second wire and sensor number 5 first wire.
- 63 - Sensor number 5 second wire and sensor number 6 first wire.
- 64 - Sensor number 6 second wire and sensor number 7 first wire.
- 65 - Sensor number 7 second wire.

ALL SENSORS CONNECTED PT100



NOT ALL SENSORS CONNECTED PT100



AD590 Analog Type (up to 7 temperature sensors may be connected):-

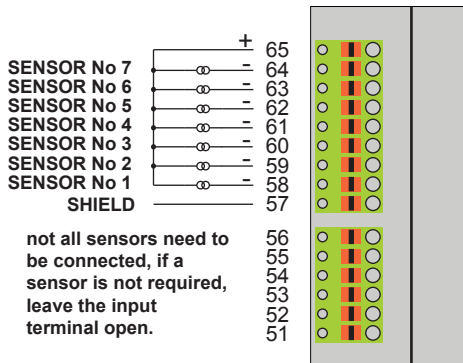
Terminal No.

- 57 - Shield of each cable.
- 58 - Sensor number 1 negative wire.
- 59 - Sensor number 2 negative wire.
- 60 - Sensor number 3 negative wire.
- 61 - Sensor number 4 negative wire.
- 62 - Sensor number 5 negative wire.
- 63 - Sensor number 6 negative wire.
- 64 - Sensor number 7 negative wire.
- 65 - Common for all sensors (Positive).

INSTALLATION CONT.

MULTISCAN ANALOG TEMPERATURE INPUT TERMINALS CONT:-

SENSORS CONNECTED AD590



TEMPERATURE AND PRESSURE CHANNELS USED FOR CONTROL:-

Default Temperature Sensors used for each Function:

Digital Sensor Number 1 :	Ambient sensor, celpad pump control.
Digital Sensor Number 2 :	Fluid out, Condenser discharge (temp. control).
Digital Sensor Number 3 :	Celpad air temperature.
Digital Sensor Number 4 :	Exhaust air temperature.
Digital Sensor Number 5 :	Celpad water temperature.
Digital Sensor Number 6 :	Fluid in temperature.
Digital Sensor Number 7 :	Spare.
Digital Sensor Number 8 :	Spare.
Analog Sensor Number 1 to 7:	Spares.

Condenser control:

Condenser fluid out pressure or temperature can be used for condenser control.

If pressure is used the pressure input used is the condenser discharge pressure, 4-20ma input number 1.

If temperature is used, any temperature sensor can be used for control and can be set by the end user. It should be the fluid out temperature.

If more than one sensor is selected, the average of all sensors that return a valid temperature are averaged and is the temperature used for control.

INSTALLATION CONT.

TEMPERATURE AND PRESSURE CHANNELS USED FOR CONTROL CONT:-

Celpad Water Pump control:

The ambient temperature is be used for the celpad water pump control.

Any temperature sensor can be used for control and can be set by the end user and is used.

If more than one sensor is selected, the average of all sensors that return a valid temperature are averaged and is the temperature used for control.

Other sensors may be selected for the other inputs as above.

If a sensor is in over range or set to "Not Connected" it will not be used in the averaging process.

MULTISCAN PRESSURE & 4-20MA INPUT TERMINALS UP TO 4 POSSIBLE:-

Pressure transducers must be of the 4 to 20ma type and a recommended span of -1 Bar to +24 Bar.

Other spans may be used if required and the span may be programmed into the MultiScan.

The voltage supplied for the transducers is 12v DC. The transducer must be able work correctly on this voltage.

The cable from the MultiScan to the transducers must be twisted pair shielded type and can be up to a maximum distance of 300 meters.

The shield must be connected at the MultiScan end only and all connections must be kept dry and clean.

The positive of each transducer must be connected to the COM of the terminal block and each Negative must be connected to its particular input terminal.

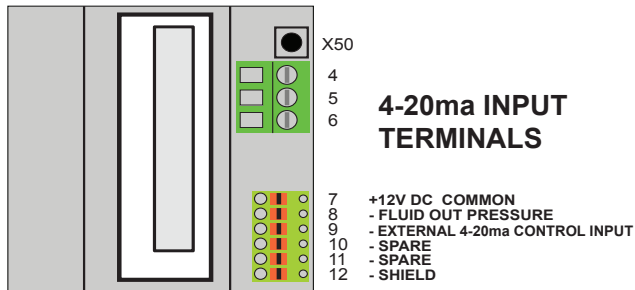
The shield must be connected to the shield terminal.

Sensor cables must not run parallel or near high voltage cables & must be kept well away from high voltage and other control cables, at least 2 meters.

Terminal Inputs for channels 1-4

- 12 - Shield of each cable.
- 7 - Common +12 Volts (all Positive wires to transducers).
- 8 - Negative for condenser fluid out pressure input.
- 9 - External 4-20ma control input (set to 40 = low and 20 = high).
- 10 - Spare.
- 11 - Spare.

INSTALLATION CONT.



MULTISCAN DIGITAL INPUT TERMINALS:-

8 Digital inputs are supplied. All inputs are optically isolated.

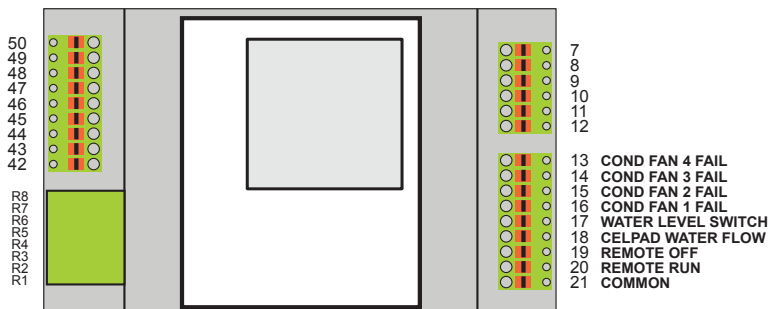
Each Digital input is ON if its input is connected (shortage) to the COM pin of the digital input terminal strip and OFF if not connected (open circuit) if the function "Digital IN Inverted" for each input is set to "NO" and the inverse is true for each input if the function "Digital IN Inverted" is set to "YES".

No voltage is to be applied to any input of the digital inputs.

The distance from the switch (voltage free relay contacts) to switch digital inputs must not exceed 10 meters and must not be run parallel or next to high voltage (240 and above) cables.

Terminal No.

- 21 - Common for all 8 digital inputs.
- 20 - Remote RUN input.
- 19 - Remote OFF input, overrides above input remote run
- 18 - Celpad Water Flow input. Alarm input. Shuts celpad pump OFF.
- 17 - Water level switch.
- 16 - Condenser Fan number 1 fail detect.
- 15 - Condenser Fan number 2 fail detect.
- 14 - Condenser Fan number 3 fail detect.
- 13 - Condenser Fan number 4 fail detect.



INSTALLATION CONT.

COMPSCAN DIGITAL INPUT TERMINALS CONT.:-

DESCRIPTIONS:-

- 21 - Common for all 8 digital inputs.**
- 20 - Remote RUN Input. (IF NOT USED THE UNIT WILL RUN ON START UP IF FUNCTION 1 (CONTROL AUTO OR OFF) IS SET TO YES).**
Used to turn the system ON from a remote location. The system will run automatically to the set points set for temperature and pressure etc. The system will shut down if this input is turned off. All control will shut the system down immediately.
- 19 - Remote OFF Input.**
Used to turn the whole system OFF from a remote location after a 10 second delay. This input also causes an alarm.
- 18 - Celpad Water Flow Input.**
Used to turn the celpad off if there is no water flow when the celpad pump is on. Also an alarm is activated within the system.
- 17 - Water Level Input.**
Controls the water make up solenoid. If the water level is not made up for 30 minutes the celpad pump cannot be operated and if the water level is not made up for 35 minutes the unit will go into alarm. The compressor continues to operate as does the condenser fans as normal.
- 16 - Condenser Fan Number 1 Fail Input.**
Goes into alarm if the number 1 fan fails.
- 15 - Condenser Fan Number 2 Fail Input.**
Goes into alarm if the number 1 fan fails.
- 14 - Condenser Fan Number 3 Fail Input.**
Goes into alarm if the number 1 fan fails.
- 13 - Condenser Fan Number 4 Fail Input.**
Goes into alarm if the number 4 fan fails.

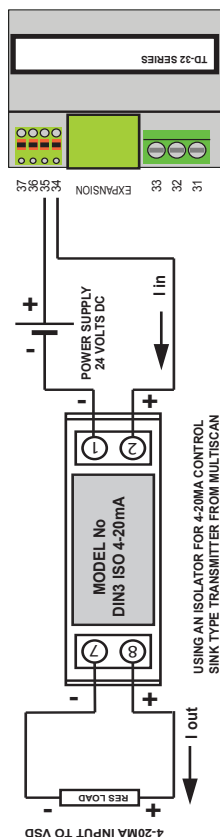
INSTALLATION CONT.

MULTISCAN 4 TO 20 MA OUTPUT TERMINALS:-

The 4 - 20ma outputs are for variable speed motor on the condenser fan motors

It is recommended that a 4-20ma isolator is used. The components are available from the manufacturer and must be wired as shown below.

For variable motor speed control see later for operation parameters.



INSTALLATION CONT.

MULTISCAN ALARM AND OUTPUT TERMINALS:-

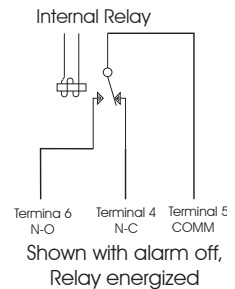
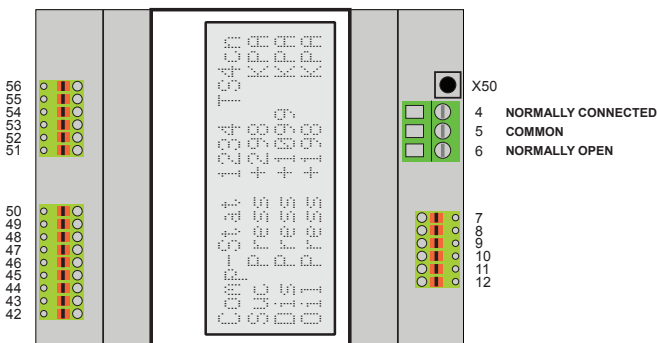
The Alarm Relay is of the voltage free type with a common, normally connected and normally not connected outputs.

The maximum voltage that can be applied to the alarm relay contacts is 24v AC/DC at 1AMP.

Terminals.

- 4 = Normally connected
- 5 = Common
- 6 = Normally open

The Relay is energized (powered on) when not in the alarm state and the normally connected terminal is active (connected). This allows for an alarm to be activated using a battery backup alarm system to trigger if the MultiScan unit losses power.



INSTALLATION CONT.

MULTISCAN RS485 TERMINALS:-

TempScan Connected for Condenser Control 4 wire.

Used if the MultiScan is to be controlled by a TempScan using the RS485 communications.

If used the "Computer Connected" set point must be set to "NO".

The MultiScan condenser controller must be one of a number (1 to 12 set in setting functions, not using the DIP switch) connected together through the RS485 Terminals as below.

The first display ("Cond-Stat 100% TS4cn" on top line) will indicate whether the 4 wire communications are successful, the right hand position will show "--" instead of "cn" if no communications are received from the TempScan after 60 seconds.

An alarm will sound after 10 minutes if no communications are received and the condenser will turn off.

All MultiScans that are connected and the set point "TempScan Ex Input Cl" set to "TempScan Con 2 Wire" or "TempScan Con 4 Wire", the condenser is controlled by the TempScan.

The cable is connected to the TempScan via the below terminal numbers.

TempScan Terminal Number		MultiScan's Connections	
Terminal No.	50	TX+	Term No. 43
Terminal No.	49	TX-	Term No. 42
Terminal No.	70	RX+	Term No. 45
Terminal No.	69	RX-	Term No. 44
Terminal No.	43	SHIELD	

The shield must be connected at the TempScan end only.

The connection to each unit must be continuous from the TempScan then one to the next then the next etc..

The units must be connected in a daisy chain configuration and not spider from one point.

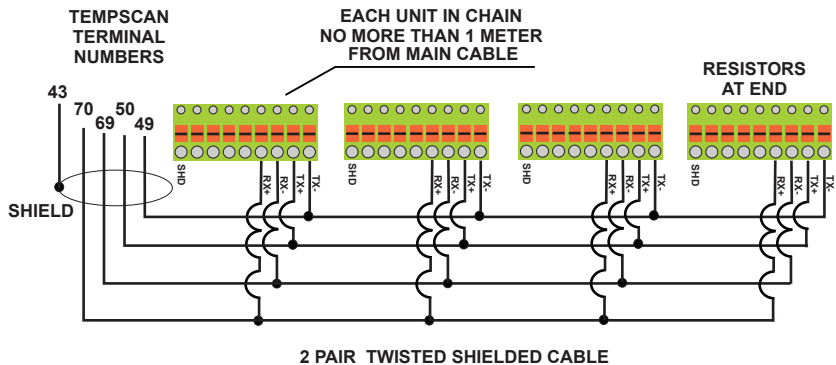
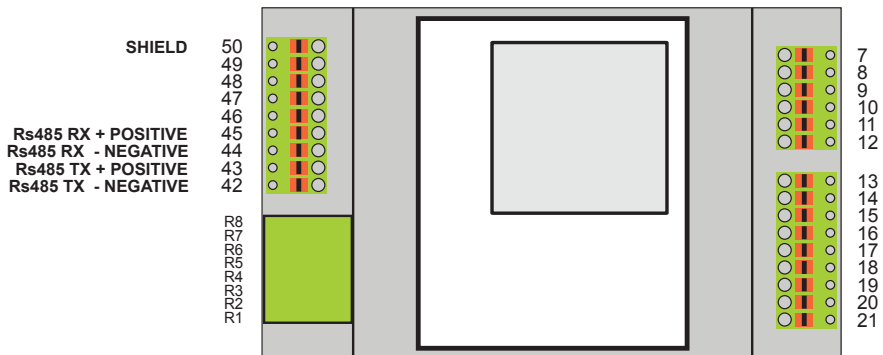
The unit at the end of the line must have 2 x 120 OHM resistors placed across the TX terminals 42 & 43 and one across the RX terminals 44 & 45.

INSTALLATION CONT.

MULTISCAN RS485 TERMINALS CONT.:-

TempScan Connected for Condenser Control 4 wire cont.

For full description of type of control see later.



INSTALLATION CONT.

MULTISCAN 2 WIRE SERIAL INPUTS :-

TempScan Connected for Condenser Control 2 wire.

If a TempScan is connected to the MultiScan, the 2 wire serial connections is required for the TempScan to control the condenser of the MultiScan in the step mode if the set function "TempScan Ex Input Cl" is set to "TempScan Con 2 Wire".

The MultiScan is one of a number (1 to 12 set on the DIP switch) connected together through the 2 wire serial the same as remote relay modules are connected to the TempScan.

One Single pair SHIELDED cable must be used to connect the remote control modules to the TEMPSCAN in a daisy chain type connection, not multiple outputs from the TempScan. The maximum distance from the TEMPSCAN must not exceed 500 meters to the furthestmost module and must not run near to high voltage cables, definitely not in the same ducting.

The shield must be connected to the SHIELD at the TEMPSCAN **Terminal No. 43** & connected to the SHIELD terminal on the remote relay boards but not connected to the shield (or ground) on MultiScans.

One wire is connected to SIGNAL - on the TEMPSCAN, **Terminal No. 62** and connected to the serial input - (*negative*) terminal 46 of the MultiScan modules.

One wire is connected to SIGNAL + on the TEMPSCAN, **Terminal No. 61** and connected to the serial input + (*positive*) terminal 47 of the MultiScan modules.

If more than one remote module is connected, they must be connected in series with each other, making sure that the Shield is unbroken at each module's position but not connected to any terminal on the MultiScan.

A terminating resistor of approximately 120 ohms must be placed between the + and the - serial signal terminals at the further most module (last module on the cable).

INSTALLATION CONT.

MULTISCAN 2 WIRE SERIAL INPUTS :-

TempScan Connected for Condenser Control 2 wire cont.

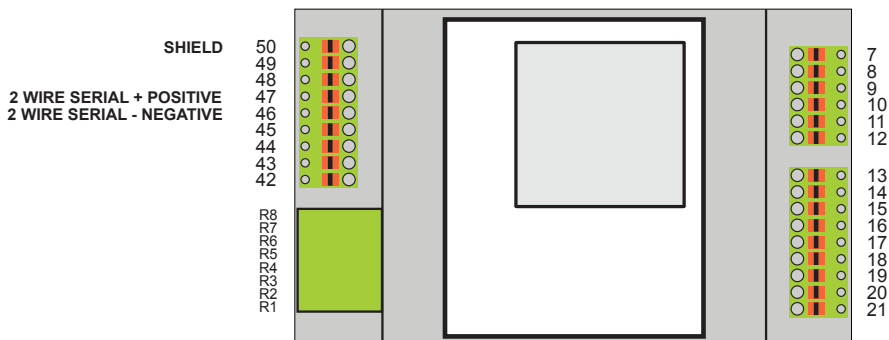
The first display ("Cond-Stat 123 TS2cn" on top line) will indicate whether the 2 wire communications are successful, the right hand position will show "--" instead of "cn" if no communications are received from the TempScan after 60 seconds.

An alarm will sound after 10 minutes if no communications are received and the condenser will turn off.

The cable is connected to the TempScan via the below terminal numbers.

TempScan Terminal Number		Connection
Terminal No.	61	+
Terminal No.	62	-
		Term No. 47
		Term No. 46

The shield must be connected at the TempScan end only.



INSTALLATION CONT.

MULTISCAN 2 WIRE SERIAL INPUTS :-

TempScan Connected for Condenser Control cont.

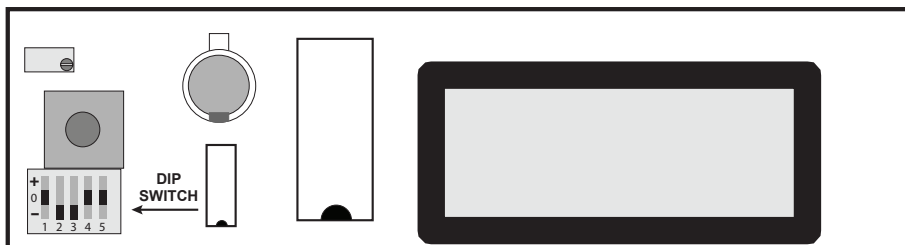
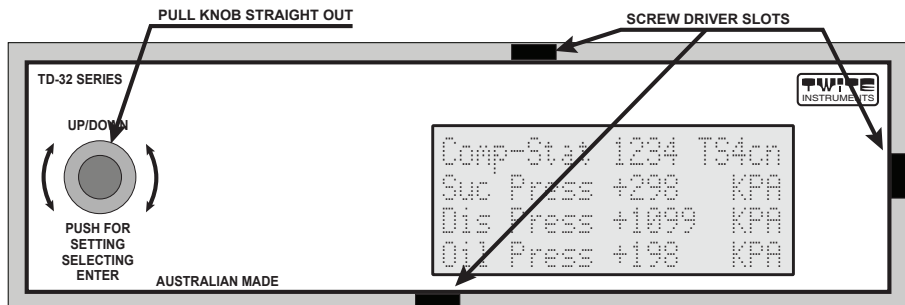
To set the DIP switch.

Remove the knob by pulling straight out.

Remove the front panel by levering it out from the display end and two sides (top and bottom) using a small screw driver being careful not to damage the front panel or the unit.

Switch each DIP switch (1 on the left to 5 on the right) to the correct channel number from 1 to 12.

The DIP switches have three positions, up, middle and down for each switch.



INSTALLATION CONT.

MULTISCAN 2 WIRE SERIAL INPUTS :-

TempScan Connected for Condenser Control cont.

For full description of type of control see later.

CHAN SWITCHES No. POSITION	CHAN SWITCHES No. POSITION	CHAN SWITCHES No. POSITION	CHAN SWITCHES No. POSITION
1 	4 	7 	10
2 	5 	8 	11
3 	6 	9 	12

INSTALLATION CONT.

MULTISCAN RS232 TERMINALS:-

All MultiScan units have a RS232 port.

Computer or Modem Connected:-

A Computer is allowed to be connected if The MultiScan unit is set to "CompCond Stand Alone" using set function "TempScan Ex Input CI".

For computer or standard modem the cable used is a 9 pin D connector (female) to the RJ45 connector (female 8 way) on the MultiScan available from the manufacture.

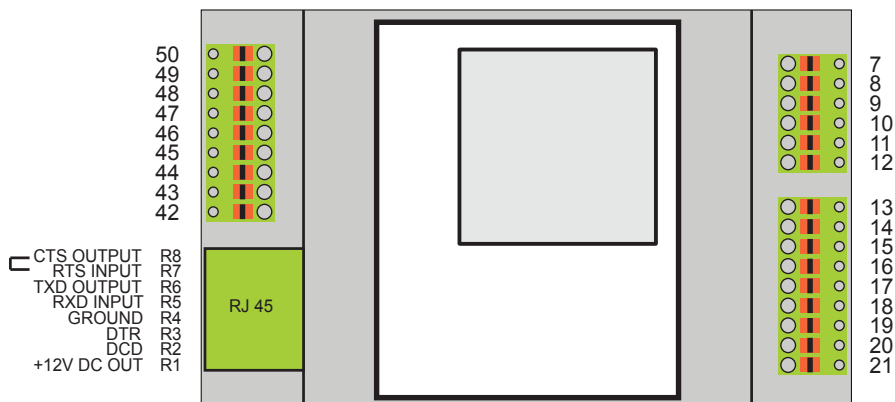
For GSM (wireless) modem connection a standard straight though RJ45 (8 way) cable is used and is available from the manufacture.

NOTE:- Do not connect pin 1 to a computer or dial up modem as this is used to power the SAM (stand alone modem) wireless GSM modem.

The maximum distance the cable can be is 5 meters.

The Baud rate must be 9600, the stop bit must be set to "1", the parity must be set to "NONE" and bit length must be set to "8".

The MultiScan can be communicated with the computer using MultiScan software available separately.



INSTALLATION CONT.

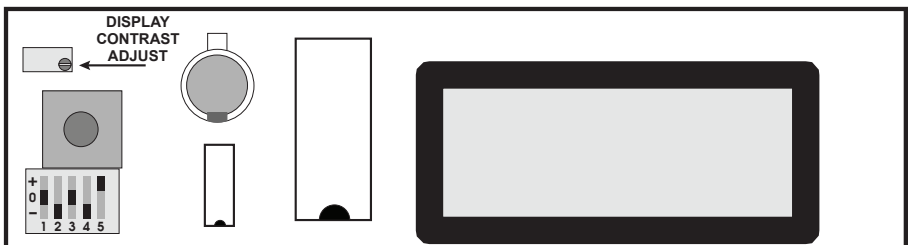
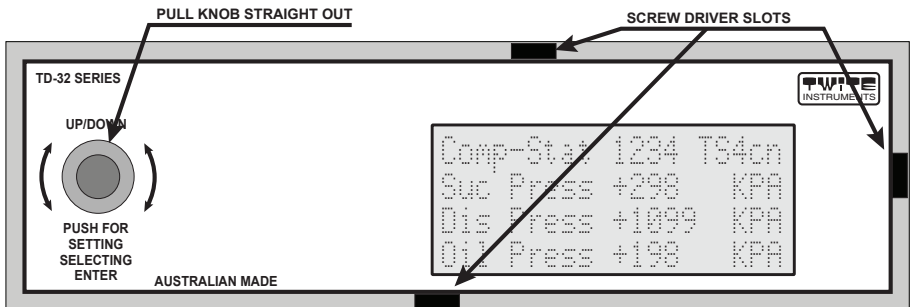
LCD DISPLAY CONTRAST ADJUST.

This trim pot adjusts the intensity of the LIQUID CRYSTAL DISPLAY. This should not normally need adjusting.

Remove the knob by pulling straight out.

Remove the front panel by levering it out from the display end and two sides (top and bottom) using a small screw driver being careful not to damage the front panel or the unit.

To adjust the contrast turn the screw on the pot shown below.



INSTALLATION CONT.

BATTERY REPLACEMENT.

If the backup battery needs replacing, the display will flash "Replace Battery" on the bottom line each second.

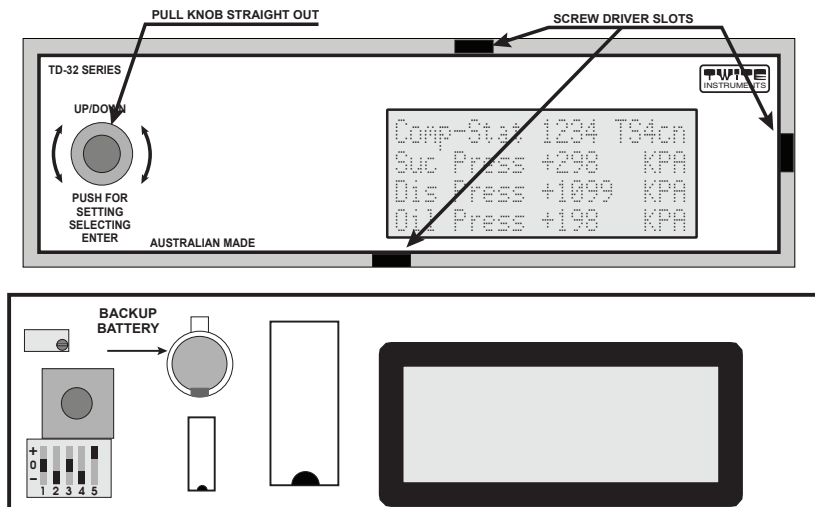
Turn off the power to the unit.

Remove the knob by pulling straight out.

Remove the front panel by levering it out from the display end and two sides (top and bottom) using a small screw driver being careful not to damage the front panel or the unit.

Replace the battery (+ to the top) and cover power on the unit. All set points will be loaded on the first minute change. The clock may need setting after a new battery is installed.

When replacing the battery, all data logged and alarms logged will be lost, save all data logged if required before turning off the power.



INSTALLATION CONT.

PROGRAM CHIP REPLACEMENT.

If the program chip needs replacing do the following.

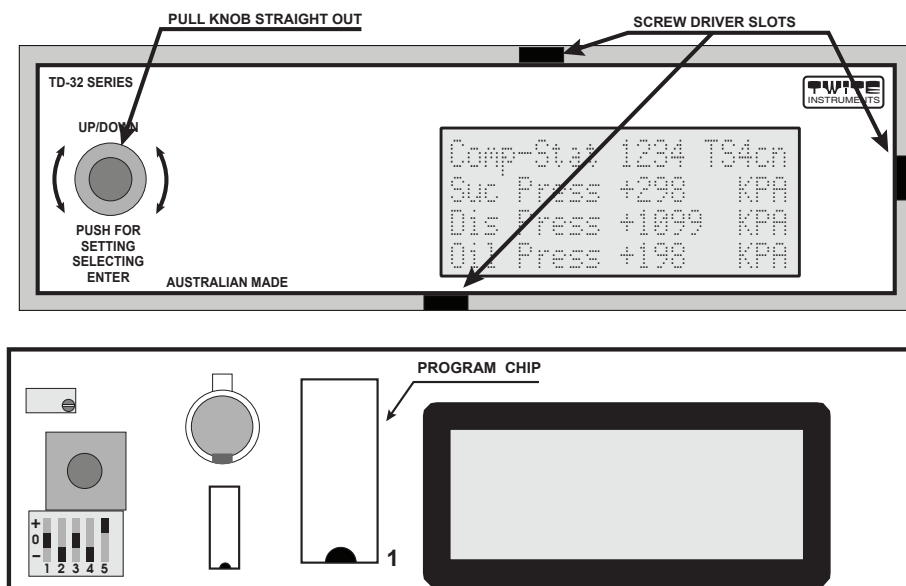
Turn the power off to the unit.

Remove the knob by pulling straight out.

Remove the front panel by levering it out from the display end and two sides (top and bottom) using a small screw driver being careful not to damage the front panel or the unit.

Pull out the program chip straight up and out of its socket.

Place the new program chip into the socket making sure that all pins are lined up to the socket and that the chip orientation is correct. The pin 1 next to the position indicated and the half moon cutout is to the bottom.



INSTALLATION CONT.

EXPANSION SOCKET.

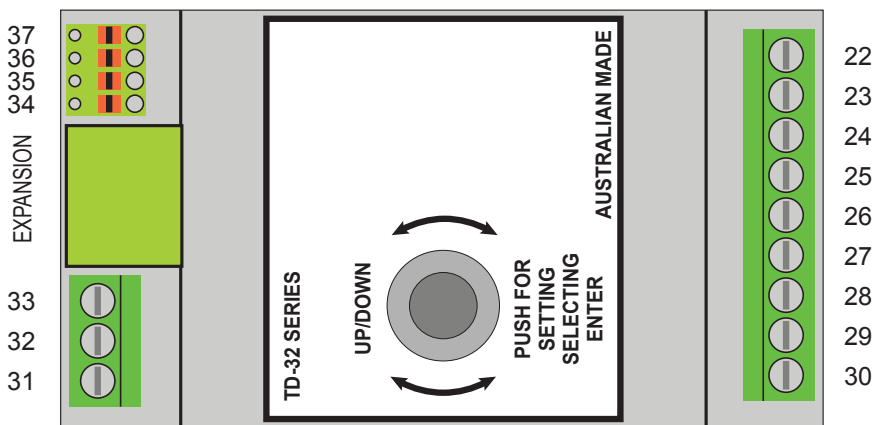
The Expansion socket is used for other modules to be added if required.

Additional LED panel display is available as an optional extra.

To install the LED panel display, follow the below diagrams and connect the cable from the TD-32-C expansion socket (making sure the orientation is correct) to the INPUT socket of the TD-32-D board (making sure the orientation is correct).

The LED display will indicate the compressors suction pressure or temperature (depending on the control type of the compressor) and the control of the relays for room control on the Bar LED's.

Top LED	=	Compressor is on.
2nd. LED	=	Condenser Fan 1 is on.
3rd. LED	=	Condenser Fan 2 is on.
4th. LED	=	Condenser Fan 3 is on.
5th. LED	=	Condenser Fan 4 is on.
6th. LED	=	Celpad water pump is on.
7th. LED	=	Water Dump is active (on).
8th. LED	=	Alarm is active (Flashes).

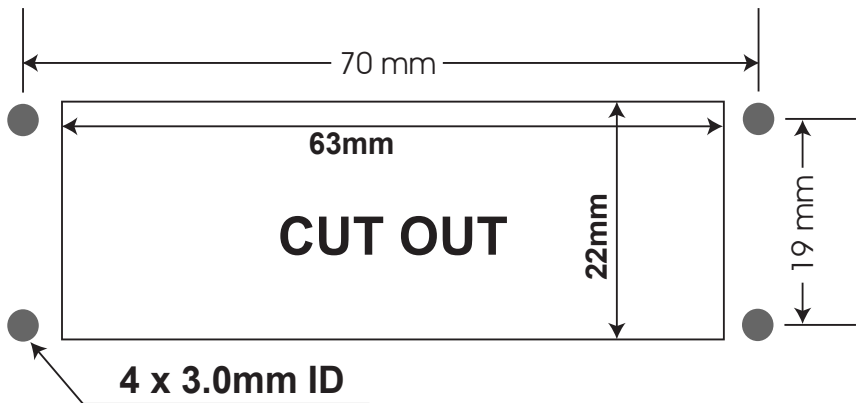


INSTALLATION CONT.

EXPANSION SOCKET CONT.

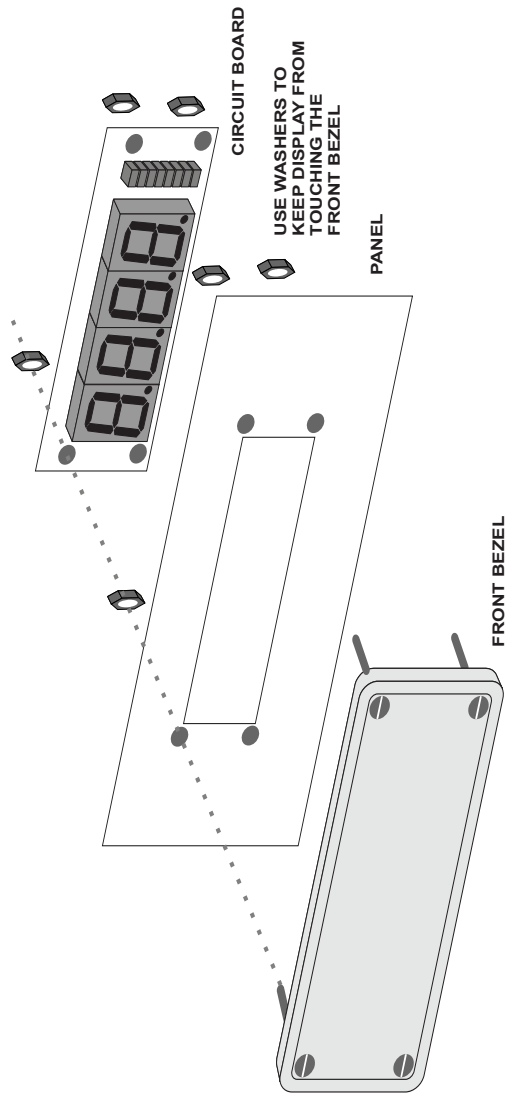
The LED display can be mounted onto a front panel. If the LED display touches the front bezel before the unit is secure, use the washers to set the circuit board back so that the display does not touch the bezel.

Cut the panel as in the diagram with 4 x 3mm holes at each corner to the diagram. place the bezel to the front of the panel and fix it with 4 x 3mm nuts (do not over tighten, otherwise damage to the bezel will occur). Place the circuit board to the rear of the panel (making sure the correct orientation, point UP arrow the UP) and place 4 x 3mm nuts to fix the circuit board in place making sure that the LED does not touch the front bezel.



INSTALLATION CONT.

EXPANSION SOCKET CONT



INSTALLATION CONT.

SENSOR POSITIONING (TEMPERATURE AND PRESSURE) :-

Temperature probes and Pressure transducers must be placed in the appropriate positions in give accurate readings of the process required.

The digital temperature sensors must not be exposed to temperatures below -50.0 °C or above +125.0 °C and the analog sensor span is -50.0 oC to 200.0 oC.

Sensors and cables should not be fully immersed in any liquid for long periods of time. They may be immersed for short periods for calibration purposes only. The stainless steel sheath may be immersed in a liquid that will not corrode AISI 304 Stainless Steel.

Pressure transducers must not exceed there pressure maximums and minimums.

OPERATION.

CONDENSER CONTROL:-

The MultiScan condenser control can be either a standard water and fans or 3C cooler or dricon type and controlled in the following ways:-

1. Stand alone (operates with its own set points). Set function "TempScan Ex Input Cl" (function number 67) is set to "Single Stand Alone".
2. Controlled from a TempScan using 2 wire communications in stepped mode only. Set function "TempScan Ex Input Cl" (function number 67) is set to "TempScan Con 2 Wire".
3. Controlled from a TempScan using RS485 (4 wire) communications in a variable speed mode. Set function "TempScan Ex Input Cl" (function number 67) is set to "TempScan Con 4 Wire".
4. A 4-20ma input signal to control the fans in a step mode. Set function "TempScan Ex Input Cl" (function number 67) is set to "4-20ma Input Step Cl".
5. A 4-20ma input signal to control the fans in a variable speed mode. Set function "TempScan Ex Input Cl" (function number 67) is set to "4-20ma Input Var Ctl".

1) Stand Alone Condenser Control:-

The condenser may be controlled using the discharge (fluid out) pressure or temperature (fluid out). If temperature control is used, the sensor or sensors may be selected from any one or multiple sensors. If multiple sensors are selected, it uses the average of selected sensors for control. The default (if none selected) is Digital number 2.

The condenser will run independently.

The control type can be any one of the following.

- 1 stage stepped.**
- 2 stage stepped.**
- 3 stage stepped.**
- 4 stage stepped.**
- 1 stage stepped and variable.**
- 2 stage stepped and variable.**
- 3 stage stepped and variable.**
- 4 stage stepped and variable.**

OPERATION CONT.

CONDENSER CONTROL:-

1) Stand Alone Condenser Control cont:-

The variable is a 4-20ma output to control a variable speed drive for all or each stage as required.

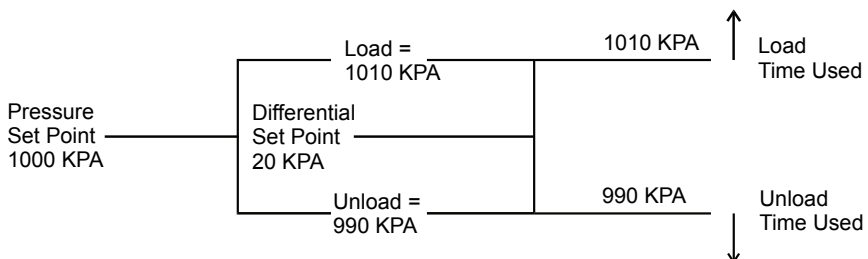
Condensers use load and unload time set points (*user programmable*) for loading and unloading a condenser.

Step Amount.

The step amount when using variable speed drives can be set between 1 and 10 percent for each step for each time the condenser needs to be loaded or unloaded.

Condenser minimum run.

When using a variable speed drive, the minimum run percentage may be set between 0 to 100 percent for each stage of turn on. This is the percentage of speed at the time each stage is loaded and the minimum speed when the stage is to be unloaded.



OPERATION CONT.

CONDENSER CONTROL CONT:-

1) Stand Alone Condenser Control cont:-

Condenser proportional control.

The proportional control can be used to decrease the time between loading and unload the condenser stages and or the percentage of speed.

If 0 is selected, no proportional control is used.

If set to 1 to 10, proportional control is used as a proportion of the selected amount. The higher the number, the more time is taken off the load & unload times in seconds.

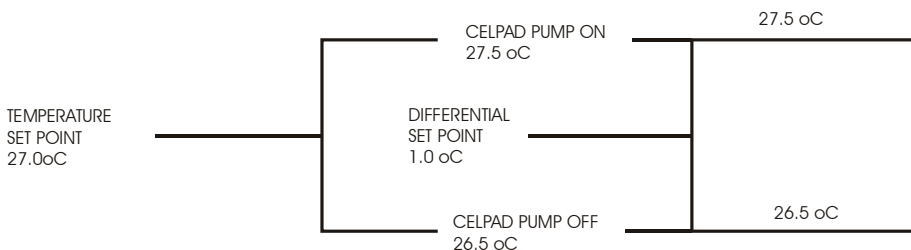
When the pressure/temperature is in the loading stage and counting down to load the condenser and if the pressure/temperature decreases, the count down for loading holds until the pressure/temperature increases again.

When the pressure/temperature is in the unloading stage and counting down to unload the condenser and if the pressure/temperature increases, the count down for unloading holds until the pressure/temperature decreases again.

Celpad Water Control (3c cooler and dricon only).

The Celpad water pump is controlled by the AMBIENT temperature (default digital number 4) according to the set point and the differential or can be run when all fans are on (full speed) or any number of fans on (set in functions) after a time out

NOTE:- The celpad pump will turn off if no fans are on regardless of the ambient temperature. Also the celpad pump will turn off if the water filling solenoid is on for 30 minutes or more (continuously with the celpad pump running, the time display will show "Pump OFF - Water Low" on the bottom line of the LCD) and an alarm will sound after 35 min to indicate this if water fill was not successful.



OPERATION CONT.

CONDENSER CONTROL CONT:-

1) Stand Alone Condenser Control cont:

Wash Control (3c cooler and dricon only).

The wash solenoid relay will turn on at the "Condenser Set Point" temperature/pressure plus the "Wash ON Set Point" and off at the "Condenser Set Point" plus (minus value added) the "Wash OFF Set Point" with the fluid out temperature/pressure (default digital temp number 4, pressure 4) but will not turn on unless all fan stages are on (and 100% if variable is used) and will turn off as soon as the last stage of fans turn off (or less than 100% if required).

If both the "Wash ON Set Point" and the "Wash OFF Set Point" are set to 0, the wash solenoid will never turn on.

Otherwise if the fans are fully loaded (and the celpad pump is off) the celpad pump will turn on regardless of the ambient temperature for 120 seconds, if after 120 seconds the temperature is not within the required temperature the wash solenoid will turn on and off with the set points, also the celpad pump will not stay on if it is not required using the ambient temperature.

If the celpad pump cannot turn on because of dumping and waiting for make up temperature etc. the wash solenoid will turn on immediately.

Water Level Float Switch Control (3c cooler and dricon only).

The water levels can be controlled using float level (reed relay) switches. Connection from the float switches must be connected as above for each unit The switches must be voltage free.

If the inputs are set to "Not Connected" the solenoids will operate as normal using mechanical float valves or other such device to fill the unit.

The switches must be in a stable condition i.e.:- open for at least 10 seconds before the unit will turn the solenoids on to allow for fluctuations in the water levels within the tanks. There is a 2 second delay for water level full.

If after a dump or reset (power up) the float switches become active and the water float switches indicate that the water level is full, each celpad turn on delay will be set to 5 (if it was higher) and allow the celpad pump to come on if required.

OPERATION CONT.

CONDENSER CONTROL CONT:-

1) Stand Alone Condenser Control cont:

Dump Control (3c cooler and dricon only).

The water will be dumped at the time specified (**only if set point 81 "Allow Dmp if Pump ON" is set to YES or if set to NO and the celpad pump is off (not required))**) in the function set point. If no dump time is set or the dump time is too small a forced dump will be performed at the day set in functions.

A flush will be performed only if the celpad pump needs to come on after the dump has been done else no flush is performed and the filling will wait for the make up temperature to be reached or time out of celpad pump on if all fans full on is used..

The water tray can be filled or not filled using the water make up output (to allow drying of the system) after a dump is performed it is not filled until a temperature (set in functions, "Water Makeup Temp ON") reaches the correct temperature which is the celpad pump set point temperature ("Celpad Pump Set Pnt") plus this set point ("Water Makeup Temp ON"). A minus value will fill the tray before the celpad pump turns on. A recommended value is 2.0 oC with the celpad pump differential set at 1.0 oC, this will start filling the tray 1.5 oC less than the celpad set point.

When the unit starts to dump and if the level switch (if connected) does not open within half the time of the dump (draining) period indicating that the drain solenoid is faulty or the drain is blocked, it will cause an alarm but allow the unit to run as normal.

The unit will not do a dump sequence if a dump was done and the unit has been waiting for the make up temperature since the last dump period.

Auto Dry Control (3c cooler and dricon only).

Auto dry is to dry the celpad and water tray. This can be done on any day of the week.

If the set point "Auto Dry Min Time" is set to 0 there is no auto dry performed.

There is no flush performed after an auto dry function.

OPERATION CONT.

CONDENSER CONTROL CONT:-

2) TEMPSCAN CONDENSER CONTROL 2 WIRE SERIAL:-

NOTE:-

Set function "TempScan Ex Input Cl" must be set to "TempScan Con 2 Wire".

Set function "Condenser Number ID" does not need to be set as it is not used for this type of control.

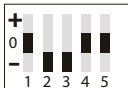
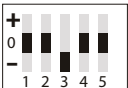
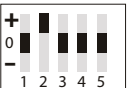
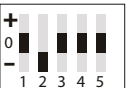
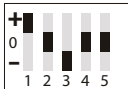
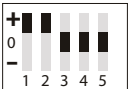
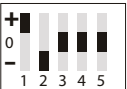
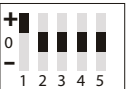
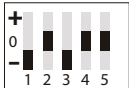
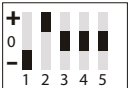
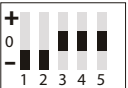
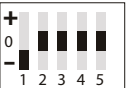
The DIP switch must be set to the condenser ID and is used for control of the condenser from the TempScan. The 4 wire RS485 serial is not used.

The function "Type of Condenser" must be set to the same number of stages (not variable) as the number of stages on the TempScan.

In this mode the stage 1 to 4 are turned on and off from the TempScan discharge pressure from the TempScan input.

All other functions if the unit is a 3c cooler or dricon are the same as in stand alone operation.

Condenser number DIP switch settings for MultiScan condenser control using 2 wire serial.

CHAN No.	SWITCHES POSITION	CHAN No.	SWITCHES POSITION	CHAN No.	SWITCHES POSITION	CHAN No.	SWITCHES POSITION
1		4		7		10	
2		5		8		11	
3		6		9		12	

OPERATION CONT.

CONDENSER CONTROL CONT:-

3) TEMPSCAN CONDENSER CONTROL RS485 4 WIRE SERIAL:-

NOTE:-

Set function "TempScan Ex Input CI" must be set to "TempScan Con 4 Wire".

Set function "Condenser Number ID" must be set to the number required.

The DIP switch does not set the condenser ID and is not used for control of the condenser from the TempScan. The 4 wire RS485 serial is used only to control the condenser.

The function "Type of Condenser" must be set to "2 Stage Condens'r Var".

In this mode the stage 1 of the condenser output is turned on when the first stage is required and the run percentage is 00%.

The 4-20ma output is set to the value that the TempScan supplies and is controlled by the discharge pressure from the TempScan input.

If the percentage required is 00% the condenser stage 2 output is off and for any other percentage the stage 2 output is turned on.

All other functions if the unit is a 3c cooler or dricon are the same as in stand alone operation.

OPERATION CONT.

CONDENSER CONTROL CONT:-

4) 4-20MA INPUT CONDENSER STEP CONTROL (NOT THE CONDENSERS FLUID OUT PRESSURE INPUT NUMBER 8 CONTROL TYPE):-

The 3c Cooler or Dricon is controlled using a 4-20ma input signal in a step mode. The 4-20ma input must be input to the second 4-20ma input terminals as follows.

The 4-20ma input may loop powered or not as shown below.

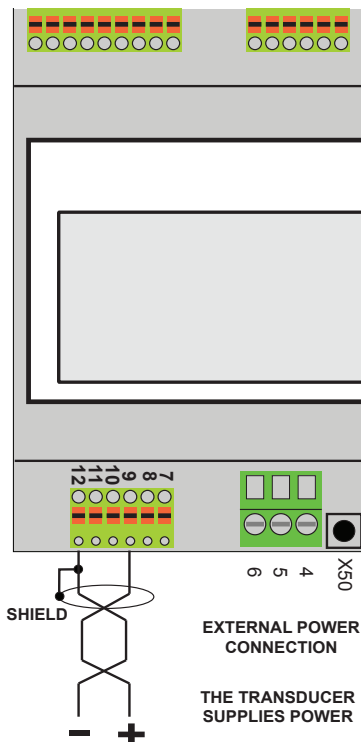
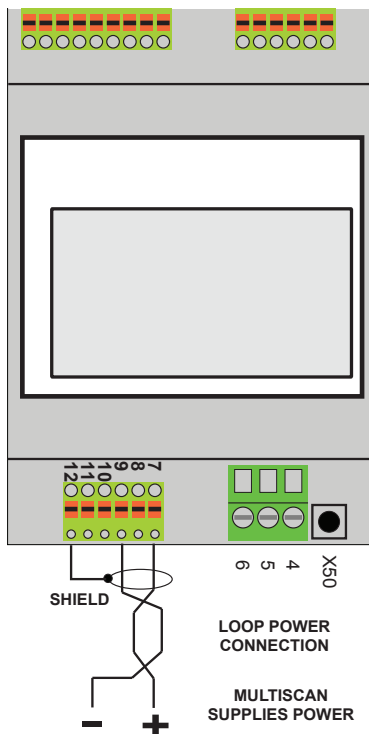
FAN No 1 will turn on if the 4-20ma input value = or greater than 5.0ma

FAN No 2 will turn on if the 4-20ma input value = or greater than 9.0ma

FAN No 3 will turn on if the 4-20ma input value = or greater than 13.0ma

FAN No 4 will turn on if the 4-20ma input value = or greater than 17.0ma

NOTE:-The 4-29ma input number 2 must be set at, low = 40, high = 200.



OPERATION CONT.

CONDENSER CONTROL CONT:-

5) 4-20MA INPUT CONDENSER VARIABLE SPEED CONTROL:-

The 3c Cooler or Dricon may be controlled using a 4-20ma input signal and using a variable speed drive for the fans.

The 4-20ma input must be input to the second 4-20ma input terminals as in the previous page.

The 4-20ma input may loop powered or not as shown in the previous page.

The 4-20ma output will follow the 4-20ma input and be displayed as a percentage of run speed on the display.

The remote run digital input may be used to shut down the fans completely if required.

The condenser control type must be set to 1, 2, 3, or 4 stage step mode. The number of fan outputs are turned on together according to the number of stages required by this set point.

NOTE:- The 4-20ma input number 2 must be set at, low = 40, high = 200.

OPERATION CONT.

ALARM ACTION:-

Some alarms will turn the system off and some will indicate the alarm but the system will still run. If any sensor used in a control temperature/pressure goes into alarm, that control temperature/pressure will alarm and the system will shut down.

All alarms are indicated on the alarm display page in the order and time they were activated.

To scroll through the alarms, turn the knob to the alarm page and press the knob once then turn the knob clockwise or anti clockwise to display each alarm.

To reset the alarms, Press the knob again, if any alarm is still active the alarm will sound and each new alarm is displayed. If no new alarms are still active the display reverts to normal running mode.

While the alarms are displayed, pressing the knob and holding it down for 3 seconds the display will revert to the normal run displays and different pages can be displayed by turning the knob clockwise and anti clockwise.

All alarms have a minimum delay of 10 seconds. Over range sensors have a delay of 20 seconds and no sensor (on digital temperature sensors only) alarms have a delay of 20 seconds.

The following is a sample of the alarms displayed. The buzzer will sound and the alarm relay will turn off. To disable the buzzer press the x50 button or the spin knob.

```
ALARMS LOGGED STATUS
TOTAL No. ALARMS 01
order 01 Disch Pres
17:46 04 Jan +1200
```

If no alarms are active the display will show:-

```
ALARMS LOGGED STATUS
NO ALARMS LOGGED
```

OPERATION CONT.

ALARM ACTION CONT.:-

The following is the display for each alarm and its meaning. The N = No alarm on this input. The S = the system will shut down if this goes into alarm, C = the celdek pump will turn off and A = Only an alarm will sound on this input but the system will continue to run.

If a channel is set to "not connected" no alarm will activate on that input:-

1	"Dig Temp 1"	A	The digital temperature No 1 is in alarm.
2	"Dig Temp 2"	A	The digital temperature No 2 is in alarm.
3	"Dig Temp 3"	A	The digital temperature No 3 is in alarm.
4	"Dig Temp 4"	A	The digital temperature No 4 is in alarm.
5	"Dig Temp 5"	A	The digital temperature No 5 is in alarm.
6	"Dig Temp 6"	A	The digital temperature No 6 is in alarm.
7	"Dig Temp 7"	A	The digital temperature No 7 is in alarm.
8	"Dig Temp 8"	A	The digital temperature No 8 is in alarm.
9	"Analog Tmp1"	A	The Analog temperature No 1 is in alarm.
10	"Analog Tmp2"	A	The Analog temperature No 2 is in alarm.
11	"Analog Tmp3"	A	The Analog temperature No 3 is in alarm.
12	"Analog Tmp4"	A	The Analog temperature No 4 is in alarm.
13	"Analog Tmp5"	A	The Analog temperature No 5 is in alarm.
14	"Analog Tmp6"	A	The Analog temperature No 6 is in alarm.
15	"Analog Tmp7"	A	The Analog temperature No 7 is in alarm.
16	"Not Used"	N	No alarm in this position.
17	"Fluid Out P"	N	The Fluid out (discharge) pressure transducer is in alarm.
18	"4-20ma Cntl"	S	The 4-20ma control input is in alarm.
19	"Spare Prs 1"	N	The spare pressure number 1 transducer is in alarm.
20	"Spare Prs 2"	N	The spare pressure number 1 transducer is in alarm.
21	"Not Used"	N	Not used.
22	"Not Used"	N	Not used.
23	"Not Used"	N	Not used.
24	"Not Used"	N	Not used.
25	"Ambient Tmp"	C	Celpad pump control temperature sensor is in alarm.
26	"Cond Cont'l"	S	Condenser control temperature sensor is in alarm.
27	"CelPad Air"	A	Celpad air temperature sensor is in alarm.
28	"Ex Air Temp"	A	Exhaust air temperature sensor is in alarm.
29	"Celpad Wtr"	A	Celpad water temperature sensor is in alarm.
30	"Fluid In Tmp"	A	Fluid in temperature sensor is in alarm.
31	"Spare Tmp 1"	N	The Spare Temp number 1 temperature sensor in alarm.

OPERATION CONT.

ALARM ACTION CONT.:-

32	"Spare Alarm 2"	N	The Spare Temp number 2 temperature sensor in alarm.
33	"Remote ON "	N	Not used
34	"Remote OFF"	S	Digital input to shut the system down. (10 sec delay).
35	"Water Flow"	C	Digital input, water flow in celpad pump. (10 sec delay).
36	"Water Level"	C	Digital input from condenser water sump. (30 min delay).
37	"Cond Fan 1"	A	Digital input condenser fan number 1 failed. (10 sec delay).
38	"Cond Fan 2"	A	Digital input condenser fan number 2 failed. (10 sec delay).
39	"Cond Fan 3"	A	Digital input condenser fan number 3 failed. (10 sec delay).
40	"Cond Fan 4"	A	Digital input condenser fan number 4 failed. (10 sec delay).
41	"Super Heat"	N	Super heat = 0 or less on compressors suction (see below).
42	"Super Sat T"	N	Compressor super saturated Temperature.
43	"TempScan 2"	S	TempScan 2 wire room only control failed.
44	"TempScan 4"	S	TempScan 4 wire communications failed.
45	"Drain Block"	A	The drain solenoid is faulty or the drain is blocked.

ALARM HISTORY:-

The alarm history displays the last 40 alarms that were active. After 40 alarms have been logged the next alarm is placed over the first alarm that was saved and each successive alarm placed over the next earliest alarm etc..

To display each alarm history, rotate the "UP/DOWN" knob until the alarm history page is displayed, press the knob briefly, then rotate the knob to display other alarm history information.

To revert to normal run display press the knob for 3 seconds.

The display will revert to the time display (page 1) after 240 seconds if nothing is pressed or turned.

OPERATION CONT.

ALARM HISTORY CONT:-

THE FOLLOWING IS A TYPICAL ALARM HISTORY DISPLAY.

```
ALARM HISTORY, SHOWS  
THE LAST 40 ALARMS  
AMBIENT TMP  
20:45 04 JAN +74.0 oC
```

IF NO ALARM IS IN A POSITION, THE FOLLOWING WILL BE DISPLAYED.

```
ALARM HISTORY, SHOWS  
THE LAST 40 ALARMS  
  
NO ALARM IN THIS POS
```

DATA LOGGING.

Data logging is done on the times set in the functions setting and can log at the below times.

Data logging may be done at timed intervals as follows:-

- | | | |
|----|------------------|---|
| 1: | NONE (don't do) | Does not do timed logging. |
| 2: | Every 1 Minute | Does a logg every minute on the minute change. |
| 3: | Every 5 Minutes | Does a logg every 5 minutes at 5, 10 15 etc. |
| 4: | Every 10 Minutes | Does a logg every 10 minutes at 10, 20, 30 etc. |
| 5: | Every 30 Minutes | Does a logg every 00, 30 minutes. |
| 6: | Every 1 Hour | Does a logg every hour on the hour change. |
| 7: | Every 2 Hours | Does a logg every 2 hours at 2, 4, 6 etc. |

To display data logged, rotate the knob until the data log display page is displayed, displays "Data Logged Display" on the top line.

DATA LOGGING CONT.

Press the knob briefly to hold the display. Rotating the knob will go to the next/previous time to be displayed.

When the displayed time reaches the end/start the display will roll over to the first/last displayed log.

To change the parameter to be displayed at each displayed data log push the "KNOB" and it will display each parameter in turn and roll over to the first parameter after the last parameter is displayed.

Holding the x50 switch while pressing the KNOB changes the displayed parameter to the previous one, converse to the previous which changes the parameter to the next one to be displayed.

Press the knob for 3 seconds to revert to the normal run display pages.

The display will revert to the time display (page 1) after 240 seconds if nothing is pressed or turned.

The third line displays the parameter and its value.

The fourth line displays the time and date of the log and the following:-

The following is a sample of data logged page:-

```
Data Logged Display
  <>=Time Push =Value
Water Temp  28.7  oC
11:14 14 Jan Pick UP
```

If no their is data logs to display the display will show the following.

```
Data Logged Display
No Data Logged
```

UP/DOWN KNOB AND SWITCH FUNCTIONS :-

OVERVIEW

The following switches are available for setting of functions etc.

- 1: The ROTARY/PUSH knob - for displaying different pages, data logged, alarms and setting/entering values of functions.

- 2: The X50 Switch -for incriminating or detrainment by 50 (5.0 oC) values while setting of values when the rotary switch is turned.

DISPLAY PAGES.

The following displays are available by rotating the "ROTARY/PUSH" knob clockwise and anti clockwise while no setting of functions is being done.

NOTE: If after 240 seconds the knob was not used, the display will revert to page 1.

If a value displayed is in error, the following may be displayed the meaning is as follows:

Er-Ovr The sensor or transducer is in an open circuit or shortage out or the sensor has failed.

No-Sen The temperature sensor is not responding, check cable and sensor.

No-Con The sensor or transducer has been set to "Not Connected".

If sensors, transducers or digital inputs have been set to "Not Connected", the value may not be displayed.

If all inputs within the one page are set to "Not Connected", the page may be skipped to the next/previous page automatically,

PAGE 1:

If TempScan connected:- The status of the condenser, stages on or percentage loaded and TS4cn or TS2cn (see TempScan connected previously) on the top line. The condenser fluid out temperature or pressure on the second line. The ambient temperature on the third line. The time and date on the fourth line. Can display other information as Wash etc.

If Stand Alone:- The 1234 = each stage that is on, and the percentage of the variable speed drive output if used. The control temperature/pressure for the condenser second line. The last 2 lines as above.

```
Cond-Stat OFF TS4cn
Fluid Out +1100 KPA
Ambient T +300 KPA
Fluid inT +65.4 oC
```

DISPLAY PAGES CONT.**PAGE 2:**

The ambient temperature on the top line.

The celpad pump on or off or time out to turn on, on the second line.

The water make up solenoid on or off on the third line.

The water dump valve on or off on the fourth line.

```
Amb't Temp +27.2  oC
Celpad Pump      OFF
Water Make Up    OFF
Water Dump       OFF
```

PAGE 3:

The ambient temperature on the top line.

The dumping and auto dry information or blank on the second line.

The water level either filling or full on the third line.

The time and date on the fourth line.

```
Amb't Temp +27.2  oC

Water Level  Full
16:24-43    09/05/2007
```

DISPLAY PAGES CONT.

PAGE 4:

The temperature of the digital sensor number 1 on the top line.
The temperature of the digital sensor number 2 on the second line.
The temperature of the digital sensor number 3 on the third line.
The temperature of the digital sensor number 4 on the fourth line.

NOTE:- Annunciations depending on set function "Display Annunciations" can be displayed instead of "Dig Temp 1" etc.

```
Dig Temp 1 +26.5  °C
Dig Temp 2 +26.5  °C
Dig Temp 3 +26.5  °C
Dig Temp 4 +26.5  °C
```

PAGE 5:

The temperature of the digital sensor number 5 on the second line.
The temperature of the digital sensor number 6 on the second line.
The temperature of the digital sensor number 7 on the third line.
The temperature of the digital sensor number 8 on the fourth line.

NOTE:- Annunciations depending on set function "Display Annunciations" can be displayed instead of "Dig Temp 1" etc.

```
Dig Temp 5 +26.5  °C
Dig Temp 6 +26.5  °C
Dig Temp 7 +26.5  °C
Dig Temp 8 +26.5  °C
```

DISPLAY PAGES CONT.

PAGE 6:

The temperature of the Analog sensor number 1 on the second line.

The temperature of the Analog sensor number 2 on the third line.

The temperature of the Analog sensor number 3 on the fourth line.

The temperature of the Analog sensor number 4 on the fourth line.

NOTE:- Annunciations depending on set function "Display Annunciations" can be displayed instead of "Dig Temp 1" etc.

```
Dig Temp 1 +26.5  oC
Ang Temp 2 +26.5  oC
Ang Temp 3 +26.5  oC
Ang Temp 4 +26.5  oC
```

PAGE 7:

The temperature of the Analog sensor number 5 on the second line.

The temperature of the Analog sensor number 6 on the second line.

The temperature of the Analog sensor number 7 on the third line.

The fourth line blank.

NOTE:- Annunciations depending on set function "Display Annunciations" can be displayed instead of "Dig Temp 1" etc.

```
Ang Temp 5 +26.5  oC
Ang Temp 6 +26.5  oC
Ang Temp 7 +26.5  oC
```

DISPLAY PAGES CONT.**PAGE 8:**

The status of all 8 digital inputs on the top line.

O=Off I=ON N=Not-Con on the second line.

Each digital input number on the third line.

The status of each digital input on the fourth line

```
      Digital Inputs
O=Off I=ON N=Not-Con
 1 2 3 4 5 6 7 8
I 0 0 0 1 0 N 0
```


DISPLAY PAGES CONT.

PAGE 9: DATA LOGGED PAGE.

To display data logged, rotate the knob until the data logg display page is displayed, displays "Data Logged Display" on the top line.

Press the knob briefly to hold the display. Rotating the knob will go to the next/previous time to be displayed.

When the displayed time reaches the end/start the display will roll over to the first/last displayed log.

To change the parameter to be displayed at each timed data log push the "KNOB" and it will display the next parameter in turn and roll over to the first parameter after the last parameter is displayed. To change back one parameter press and hold the x50 button while the "KNOB" is pushed

Press the knob for 3 seconds to revert to the normal run display pages.

The display will revert to the time display (page 1) after 240 seconds if nothing is pressed or turned.

The third line displays the parameter and its value.

The fourth line displays the time and date of the log and the following:-

The following is a sample of data logged page:-

```
Data Logged Display
<>=Time Push =Value
Dig Temp 1    +35.5
11:14 14 Jan   oC
```

If no their is data loggs to display the display will show the following.

```
Data Logged Display
No Data Logged
```

DISPLAY PAGES CONT.

PAGE 10: ALARMS PAGE.

To scroll through alarms, turn the knob to the alarm page and press the knob once then turn the knob clockwise or anticlockwise to display each alarm.

To reset the alarms, Press the knob again, if any alarm is still active the alarm will sound and each new alarm is displayed. If no new alarms are still active the display reverts to normal running mode.

While the alarms are displayed, pressing the knob and holding it down for 3 seconds the display will revert to the normal run displays and different pages can be displayed by turning the knob clockwise and anticlockwise.

All alarms have a minimum delay of 10 seconds. Over range sensors have a delay of 20 seconds and no sensor (on digital temperature sensors only) alarms have a delay of 10 seconds.

The following is a sample of the alarms displayed. The buzzer will sound and the alarm relay will turn off. To disable the buzzer press the x50 button or the spin knob.

```
ALARMS LOGGED STATUS
TOTAL No. ALARMS  01
order 01  Dig Temp 1
17:46 04 Jan +55.5
```

If no alarms are active the display will show:-

```
ALARMS LOGGED STATUS
NO ALARMS LOGGED
```

DISPLAY PAGES CONT.

PAGE 11: ALARM HISTORY PAGE.

The alarm history displays the last 40 alarms that were active. After 40 alarms have been logged the next alarm is placed over the first alarm that was saved and each successive alarm placed over the next earliest alarm etc..

To display each alarm history, rotate the "UP/DOWN" knob until the alarm history page is displayed, press the knob briefly, then rotate the knob to display other alarm history information.

To revert to normal run display press the knob for 3 seconds.

The display will revert to the time display (page 1) after 240 seconds if nothing is pressed or turned.

The following is a typical alarm history display.

```
ALARM HISTORY, SHOWS  
THE LAST 40 ALARMS  
DIG TEMP 1  
20:45 04 JAN +44.0 oC
```

IF NO ALARM IS IN A POSITION, THE FOLLOWING WILL BE DISPLAYED.

```
ALARM HISTORY, SHOWS  
THE LAST 40 ALARMS  
  
NO ALARM IN THIS POS
```

DISPLAY PAGES CONT.

PAGE 12: WARNINGS PAGE.

To scroll through warnings, turn the knob to the warn logged page and press the knob once then turn the knob clockwise or anticlockwise to display each warning.

To reset the warnings, Press the knob again, if any warning is still active the lcd backlight will flash and each new warning is displayed. If no new warnings are still active the display reverts to normal running mode.

While the warnings are displayed, pressing the knob and holding it down for 3 seconds the display will revert to the normal run displays and different pages can be displayed by turning the knob clockwise and anticlockwise.

All warnings have a minimum delay of 20 seconds. Only temperatures and 4-20ma inputs can have warning alarms.

The following is a sample of the warnings displayed. The lcd backlight will flash but no buzzer alarm and the alarm relay will not activate. Any warning will not shut down any control function.

```
WARN LOGGED STATUS
TOTAL No. Warns 01
order 01 Dig Temp 1
17:46 04 Jan 0C
```

If no warnings are active the display will show:-

```
WARN LOGGED STATUS
NO WARNINGS LOGGED
```

DISPLAY PAGES CONT.**PAGE 13:**

The fluid out pressure on the top line.

The 4-20ma input value in milliamps on the second line.

The spare 1 pressure on the third line.

The spare 2 pressure on the fourth line

```
Fluid Out +1000 KPA
4-20ma In +4.0 ma
Spare 1 +542 KPA
Spare 2 +542 KPA
```

PAGE 14:

The number of hours the condenser fans have run on the first line.

The number of hours the celpad pump has run on the second line.

The last 2 lines blank

```
Cond'r Run 430 Hrs
Cel Pump R 312 Hrs
```

PAGE 15:

The fluid out temperature on the top line.

The super heat temperature of the fluid out on the second line.

The fluid in temperature on the third line.

The super heat temperature of the fluid in on the fourth line

```
Fluid Out +29.3 oC
SHeat Out +1.2 oC
Fluid in +29.3 oC
S-Heat in +1.2 oC
```

DISPLAY PAGES CONT.**PAGE 16: THIS DISPLAY IS SHOWN FOR 5 SECONDS ON START UP.**

The time and date on the top line.

The copyright on the second line.

MultiScan Model No. on the third line.

The model number and version on the fourth line

```
13:19-26  16/05/2007  
Copyright Twite Inst  
MultiScan Model No.  
TD-32-C Ver No. 01
```

PASSWORD:-

USERS PASSWORD :-

When the password is required (*can be turned on or off*) the display will request the password when "SET" knob is pressed then "ENTER" knob is pressed to select that function to change/check with the following message.

```
Enter Users
          Password
0000
```

NOTE:- flashing cursor.

The PASSWORD consists of A NUMBER BETWEEN 0000 AND 5999 inclusive.

To enter the password rotate the knob to the first value required then press "ENTER" knob for the next number etc. until the correct number is displayed, press "ENTER", knob again to finish entering the password number. If the password number was correct the unit will go to the next step for setting functions.

If the number was incorrect the unit will display the following.

```
Wrong Password
Press X50
or Try Again
0000
```

If X50 is pressed the display will revert to its normal running display with the displayed data that was displayed before the "SET" knob was pressed.

PASSWORD CONT.:-

CHANGE PASSWORD

(use "SET" knob, "ENTER" knob, rotate UP/DOWN knob.)

Allows the Password to be changed. If the Password is inactive (*i.e.. is set to OFF*) this function will automatically require the users password before you can change it.

This is done using the "Password YES/NO" function

DISABLE PASSWORD

(use "SET" knob , "ENTER" knob, rotate UP/DOWN knob).

This is done using the "Password YES/NO" function

Changes the PASSWORD function to ACTIVE or NON ACTIVE.

PASSWORD UNKNOWN

If the pass word has been lost it is possible to reset the pass word to **"0888"** by using the function "Reset Password" and pressing and holding the X50 switch while the "KNOB" is pressed.

SETTING FUNCTIONS.

OVERVIEW:

To set any function, the following switches are used:-

If the password is required, then it must be entered before any function can be changed.

The large knob is used for "SET FUNCTIONS" key on the first press and then becomes the "ENTER" key there after.

After pressing the Knob for the first time. Rotating this knob clockwise by one click increases the value by 1 function and rotating anticlockwise by one click decreases the value by 1 function.

When the correct function is displayed for changing or checking press the knob to go to that function to change or check.

If channels are required for the function the display will indicate this.

Turn the knob to select each channel and press the knob to select or deselect each channel as required or not required.

When all channels that require changing turn the knob to display "----> Continue Next" and press the knob. This will now go to the next section and the value of the last channel that was selected will be displayed for changing.

If no channels were selected (*and were required*) the function will not proceed and the display will revert to there normal functions.

Rotate the knob to increase or decrease the value by 1 count each click.

If the "X50" button is pressed when rotating the knob the value will increase or decrease by 50 each click.

If the "ENTER" knob is pressed without the value being changed all channels that were selected will be updated with the value displayed on the LCD.

SETTING FUNCTIONS.

OVERVIEW CONT.:

When a flashing cursor is displayed on the Liquid Crystal Display the Value or Function may be changed to another by rotating the knob ("UP/DOWN").

After the correct value has been entered press the "ENTER" knob and the value will be entered into memory for all the channels selected if required and will not be affected by a power failure.

If the following is displayed after the last "ENTER" knob press, redo the function. The "ENTER" knob was not pressed for the required time for the value to be saved. This only applies to values that must be saved to the EEPROM.

```
The Enter Switch was  
not pressed for the  
required time.  
Press X50 and Re-Do
```

If more than one value is required (*i.e. set real time clock*) the unit will request each value in turn to be altered. After each value has been entered press the "ENTER" knob. After all required values have been altered (*or checked*), the displays will revert to normal run mode.

When the "SET" knob is first pressed the last function that was altered will appear on the display The FUNCTIONS and their meaning are described in the following pages in short form then in detail.

```
SETTING FUNCTIONS  
Turn Dial < or > for  
Required Function 9  
Set Data Logging
```

To change from one function to another, turn the "DIAL" (*up/down arrow*) knob to display each function in numerical order.

FUNCTIONS.

FUNCTIONS AND THE NO. OF EACH:-

1	"Control Auto or OFF"	Sets all control to automatic or OFF.
2	"Condenser Set Point"	The condenser set point pressure/temperature.
3	"Condenser Diff'tial"	The condenser differential pressure/temperature.
4	"Condenser Load Time"	Ramp up time in seconds for condenser load.
5	"Condenser Unload Tme"	Unload load set point in pressure/temperature.
6	"Condenser Step Amount"	Step % amount for each load step for condenser.
7	"Condenser Min % Run"	Minimum % for each condenser stage to run at.
8	"Cond cntl PRESS-TEMP"	Condenser control on pressure or temperature.
9	"Cond Proportional Ct"	Amount of proportional control on condenser.
10	"Type of Condenser"	The type of condenser used.
11	"Condenser Number ID"	The condenser id number used for TempScan.
12	"Condenser Model Type"	The condenser model, standard or 3c-dricon.
13	"Start Water Dump Tme"	Time of day to start the water dump.
14	"Water Dump Duration"	Time in seconds for the water dump Duration.
15	"Celpad Pump Set Pnt "	Celpad water pump turn on set point.
16	"Celpad Pump Diff'tal"	Celpad water pump turn on/off differential.
17	"Celpad Pump Delay"	Water make-up time out before Celpad pump on
18	"Force Celpad AutoDry"	Which day of the week the Celpad water dries.
19	"Auto Dry Min'm Time"	The minimum time for the auto dry to be active.
20	"Water Makeup Temp ON"	The temp to be reached before water is filled.
21	"Celpad Wtr Flush Tme"	Time in seconds for the water tray to be flushed.
22	"Wt/Dump/V Operation"	Power to the water dump valve on shut yes or no.
23	"Wash ON Set Point"	The turn on temp/pressure of the wash solenoid.
24	"Wash OFF Set Point"	The turn off temp/pressure of the wash solenoid.
25	"1st Stage ON/OFF Dly"	Whether first stage on & off uses the delay.
26	"Fans Order Rotate"	Whether fan sequence turn on rotates or not.
27	"Dump Open When Stop"	Whether dump valve is opened if stopped.
28	"Night Set Back St Pt"	The Temp/Press added to the set point if req.
29	"Set Back Time Start"	The start time for night set back to start.
30	"Set Back Time Finish"	The finish time for night set back to stop.

FUNCTIONS.

FUNCTIONS AND THE NO. OF EACH CONT:-

31	"High Alarm Temp're"	The high alarms for temperature sensors.
32	"Warn Temp From High"	Warning from high alarm temperature sensors.
33	"Low Alarm Temp're"	The low alarms for temperature sensors.
34	"Warn Temp Above Low"	Warning above low alarm temperature sensors.
35	"Hi Temp Alarm Delay"	The high alarm delays for temperature sensors.
36	"Low Temp Alarm Delay"	The low alarm delays for temperature sensors.
37	"High Alarm 4-20 Inp"	The high alarms for pressure/40-20ma sensors.
38	"Warn 4-20 From High"	Warning from high alarm pressure/4-20 sensors.
39	"Low Alarm 4-20 Inp"	The low alarms for pressure/40-20ma sensors.
40	"Warn 4-20 Above Low"	Warning above low alarm pressure/4-20 sensors.
41	"Hi 4-20 Alarm Delay"	The high alarm delays pressure/40-20ma sensors.
42	"Lo 4-20 Alarm Delay"	The low alarm delays pressure/40-20ma sensors.
43	"Dig Temp's Connected"	The 8 digital temp sensors that are connected.
44	"Analog Tmp Connected"	The 7 Analog temp sensors that are connected.
45	"4-20ma Inp Connected"	The pressure and 4-20ma inputs connected.
46	"Set 4-20 Input Span"	The span of pressure transducers & 4-20ma.
47	"Digital IN Connected"	The Digital inputs connected or not connected.
48	"Digital IN Inverted"	Whether a digital input is inverted or not.
49	"Temp Sen for Ambient"	Temp'ture sensors used for celpad pump control
50	"Temp Sen's Cond Ctrl"	Temp'ture sensors used for condenser fans control
51	"Temp Sen's Celpad Air"	Temp'ture sensors used for celpad air temp.
52	"Temp Sen's Exh't Air"	Temperature sensors used for exhaust air temp.
53	"Temp Sen's Cel Water"	Temperature sensors used for celpad water temp.
54	"Temp Sen's Fluid In"	Ambient temp sensors used for fluid in temp.

FUNCTIONS.

FUNCTIONS AND THE NO. OF EACH CONT:-

55	"Set Data Logging"	The data logged times or none don't do.
56	"Set Time & Date"	Sets the real time clock.
57	"Password YES/NO"	Use the password or not for setting functions.
58	"Change Password"	Change the password. Password must be used.
59	"Ram Memory Check"	Checks all memory for any faults.
60	"Test Display/Rst log"	Displays model number & resets all data logged.
61	"Set Dig Temp Offset"	Set the digital temperature sensors offset.
62	"Set Analog Tm Offset"	Set the Analog temperature sensors offset.
63	"Add Dig Temp Sensor"	Add a new digital temperature sensor.
64	"Set RS485/232 Baud"	Set the baud rate for serial communications.
65	"Display Brightness"	The brightness of the displays back light.
66	"Number of Resets S/N"	The number of resets performed and serial No.
67	"TempScan Ex Input Cl"	Stand alone, tempScan, 4-20ma external control.
68	"Reset Celpad Run Hrs"	Reset the celpad pump run hours.
69	"Reset Cond'ser Hours"	Reset the condenser run hours.
70	"4-20 Weight Average"	The 4-20ma inputs averaging value.
71	"Type of refrigerant"	Type refrigerant used for super heat calculation.
72	"Computer Connected"	Whether a Computer is connected or not.
73	"LED Display Intens'y"	The brightness of the LED display.
74	"Reset Password"	Resets the password to 888.
75	"Display Annunciation"	Display annunciation yes or no for temperatures.
76	"Cel Pad Control Type"	Control of Celpad is on ambient or fans full on.
77	"CelPad Turn ON Delay"	Celpad pump turn on delay if control on fans on.
78	"Water Level Swch Dly"	The delay for the water level switch activation.
79	"Celpad ON Fan Number"	The number of fans to be on for celpad pump on.
80	"Celpad Pump Turn ON%"	The % for for the celpad pump to turn on if var'b.
81	"Allow Dmp if Pump ON"	Allow the unit to dump if the celpad pump is on.
82	"Analog PT100 / AD590"	Wether the analog sensors are PT100 or AD590.

FUNCTIONS CONT.

1 “Control Auto or OFF”

Sets whether the compressor and condenser is on automatic or off.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Control Auto or OFF” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR YES or NO [Control Auto].

PRESS “KNOB”

SELECTION COMPLETE.

2 “Condenser Set point”

Sets the set point in discharge pressure or temperature (depends on which required) for the condenser fans stages to turn on at.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Condenser Set Point” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 0 (0.0) to +2000 (+200.0) [KPA or oC]

PRESS “KNOB”

SELECTION COMPLETE.

3 “Condenser Diff’tial”

Sets the differential in discharge pressure or temperature (depends on which required) for the compressor to operate at.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Condenser Diff’tial” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR +10 (+1.0) to +200 (+20.0) [KPA or oC]

PRESS “KNOB”

SELECTION COMPLETE.

4 “Condenser Load Time”

Sets the load time in seconds that the condenser is loaded to the next fan stage using the control value divided by 2. If the proportional setting is more than 0, this time is automatically adjusted down as the set point increases to the actual control value.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Condenser Load Time” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 0 to 900 [Seconds]

PRESS “KNOB”

SELECTION COMPLETE.

FUNCTIONS CONT.

5 “Condenser Unload Tme”

Sets the unload time in seconds that the condenser is unloaded to the previous fan stage using the control value divided by 2. If the proportional setting is more than 0, this time is automatically adjusted down as the set point increases to the actual control value.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Condenser Unload Tme” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 0 to 1800 [Seconds]

PRESS “KNOB”

SELECTION COMPLETE.

6 “Condens'r Step Amount”

Sets the step amount in percentage that the condenser will load and unload each time if a variable speed drive is used.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Condens'r Step Amount” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 1 to 10 [% Per Step]

PRESS “KNOB”

SELECTION COMPLETE.

7 “Condenser Min % Run”

Sets the minimum percentage that each stage will start at when turned on if a variable speed drive is used.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Condenser Min % Run” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 0 to 100 [% at Stage 1]

PRESS “KNOB”

ROTATE KNOB ▲ ▼ FOR 0 to 100 [% at Stage 2]

PRESS “KNOB”

SELECTION COMPLETE.

8 “Cond cntl PRESS-TEMP”

Selects whether the condenser is controlled using discharge pressure or temperature.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Cond cntl PRESS-TEMP” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR Control on Pressure or Ctrl on Temperature.

PRESS “KNOB”

SELECTION COMPLETE.

FUNCTIONS CONT.

9 “Cond Proportional Ct”

Sets the amount of PID that is used to control the load and unload times depending on how much difference there is between the set point and the actual value.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Cond Proportional Ct” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 0 to 10 [Prop 0 = none]

PRESS “KNOB”

SELECTION COMPLETE.

10 “Type of Condenser”

Sets the type of condenser that is connected to the unit from 1 to 4 stage stepped or 1 to 4 stage stepped variable. This allows one fan to be variable and the rest stepped with the start speed for each stage different.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Type of Condenser” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 1 to Stage Condenser stepped, or 1 to 4 stage condenser stepped variable.

PRESS “KNOB”

SELECTION COMPLETE.

11 “Condenser Number ID”

Sets the number of the condenser to be used for connection to a TempScan using the 4 wire (RS485) serial link.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Condenser Number ID” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 1 TO 27

PRESS “KNOB”

SELECTION COMPLETE.

12 “Condenser Model Type”

Sets the type of condenser to control, either a standard water/fan control or 3c cooler/dricon control. If 3c cooler/dricon control is not selected, the alarms for celpad pump and water filling are not used.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Condenser Model Type” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR “3C Cooler or Dricon” or “Standard Water Fans”

PRESS “KNOB”

SELECTION COMPLETE.

FUNCTIONS CONT.

13 “Start Water Dump Tme”

Sets when the water dump solenoid turns on to dump the Celpad water.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Start Water Dump Tme” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 00:00 to 23:59 TIME OF DAY (24 HOUR TIME FORMAT)

PRESS “KNOB”

SELECTION COMPLETE.

14 “Water Dump Duration”

Sets the time in seconds for the water dump solenoid to be on. **NOTE:-** If the dump time is set to 210 (3.5 minutes) or less or the unit has not performed a dump, the unit will force a dump of 6 minutes at the allocated time.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Water Dump Duration” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 0 - 1800 SECONDS.

PRESS “KNOB”

SELECTION COMPLETE.

15 “Celpad Pump Set Pnt”

Sets the temperature plus half the differential value (next set point) and the temperature set point less half the differential for when the Celpad water pump turns ON and OFF respectfully. If the water dump is in progress and the water makeup (and water makeup time out) is active the Celpad water pump will not turn on. If no fans are ON the Celpad water pump will not turn on.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Celpad Pump Set Pnt” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 10.0 to +50.0 oC.

PRESS “KNOB”

SELECTION COMPLETE.

16 “Celpad Pump Diff’tial”

Sets the Celpad water pump differential for the above set point to use.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Celpad Pump Diff’tial” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR +0.2 oC to +10.0 oC.

PRESS “KNOB”

SELECTION COMPLETE.

FUNCTIONS CONT.

17 “Celpad Pump Delay”

Sets the time out to stop the Celpad water pump from turning on after a water dump and the makeup solenoid is on to replace the Celpad pump water.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Celpad Pump Delay” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

PRESS “KNOB”

ROTATE KNOB ▲ ▼ FOR 0 TO 1800 SECONDS

PRESS “KNOB”

SELECTION COMPLETE.

18 “Force Celpad AutoDry”

Sets the day of the week to delay the minimum time (next function) that the water make up for the Celpad is turned on in minutes. This allows the Celpad water to dry out at least once a week.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Force Celpad AutoDry” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR SUNDAY TO SATURDAY

PRESS “KNOB”

SELECTION COMPLETE.

19 “Auto Dry Min'm Time”

Sets the minimum time in minutes that the Celpad water is not filled to allow the Celpad water to dry from the container.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Auto Dry Min'm Time” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 0 TO 300 MINUTES

PRESS “KNOB”

SELECTION COMPLETE.

20 “Water Makeup Temp ON”

Sets the temperature which is added to the Celpad pump set point. The water makeup valve will not turn on (and the water dump valve remains open) until the ambient temperature reaches the temperature. This allows for the Celpad water to dry out if the Celpad pump is not required because of the ambient temperature being low.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Water Makeup Temp ON” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR -10.0 TO 0 °C

PRESS “KNOB”

SELECTION COMPLETE.

FUNCTIONS CONT.

21 “Celpad Wtr Flush Tme”

Sets the type of condenser to control, either a standard water/fan control or 3c cooler/dricon control. If 3c cooler/dricon control is not selected, the alarms for celpad pump and water filling are not used.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Celpad Wtr Flush Tme” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 0 TO 300 SECONDS

PRESS “KNOB”

SELECTION COMPLETE.

22 “Wt/Dump/V Operation”

Sets whether the water dump valve has power to it when the valve is opened or not..

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Wt/Dump/V Operation” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR YES OR NO FOR POWER TO WATER DUMP VALVE WHEN OPEN.

PRESS “KNOB”

SELECTION COMPLETE.

23 “Wash ON Set Point”

Sets the 3C-Cooler/dricon Temperature/Pressure of fluid out at which the wash solenoid is turned ON. The solenoid will not turn on regardless of the temperature/pressure if no fans are on.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Wash ON Set Point” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 0.0 to +300.0 oC or 0 to 3000 KPA

PRESS “KNOB”

SELECTION COMPLETE.

24 “Wash OFF Set Point”

Sets the 3C-Cooler/dricon Temperature/Pressure of fluid out at which the wash solenoid is turned OFF. The solenoid will not turn on regardless of the temperature/pressure if no fans are on

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Wash OFF Set Point” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 0.0 to +300.0 oC or 0 to 3000 KPA

PRESS “KNOB”

SELECTION COMPLETE.

FUNCTIONS CONT.

25 “1st Stage ON/OFF Dly”

Sets whether the load delay for the first fan to come on and the first fan to be turned off is used or not.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “1st Stage ON/OFF Dly” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR YES OR NO Use 1st Delay.

PRESS “KNOB”

SELECTION COMPLETE.

26 “Fans Order Rotate”

Sets whether the fan sequence rotates when turning on. If Fans are set to rotate the first fan to turn on is not always number 1. The fan sequence is rotated each time all fans have turned off. On reset, setting functions “Type of Condenser” and this function or power failure the sequence is set to 1,2,3,4

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Fans Order Rotate” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR YES OR NO Rotate Fans

PRESS “KNOB”

SELECTION COMPLETE.

27 “Dump Open When Stop”

Sets whether the water dump valve is opened when the condenser is turned off. This can only be done if the digital input number 1 (Remote ON) is set to connected and is off. Turning the input to off turns off all condenser functions even if connected to a TempScan. If the digital input 1 is set to “not connected”, the condenser is always in the on condition unless the digital input number 2 (Remote OFF) is set to connected and is active, i.e. set to turn off. This input (2) does not turn the dump valve on if active.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Dump Open When Stop” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR YES OR NO

PRESS “KNOB”

SELECTION COMPLETE.

FUNCTIONS CONT.

28 “Night Set Back St Pt”

Sets the temperature/pressure to be added to the set point (function number 1) between a start time and finish time (next 2 functions). This allows the unit to run at a higher/lower set point at any time of the day/night. The celpad pump is on during night set back if the water is present in the celpad system.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Night Set Back St Pt” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR -10.0 oC to 10.0 oC OR -100 TO 100 KPA

PRESS “KNOB”

SELECTION COMPLETE.

29 “Set Back Time Start”

Sets the start time when the set back temperature/pressure is added to the set point (function “Condenser Set Point”).

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Set Back Time Start” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 00:00 to 23:59 TIME OF DAY (24 HOUR TIME FORMAT)

PRESS “KNOB”

SELECTION COMPLETE.

30 “Set Back Time Finish”

Sets the finish time when the set back temperature/pressure is added to the set point (function “Condenser Set Point”).

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Set Back Time Finish” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 00:00 to 23:59 TIME OF DAY (24 HOUR TIME FORMAT)

PRESS “KNOB”

SELECTION COMPLETE.

FUNCTIONS CONT.

31 “High Alarm Temp'ture”

Sets the high alarm temperature for temperature sensors. Only sensors that are set to "Connected" will be available for selection.

PRESS "KNOB"
 ROTATE KNOB ▲ ▼ TO SELECT "High Alarm Temp'ture" on bottom line.
 PRESS "KNOB"
 ENTER PASSWORD IF REQUIRED
 ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE [Dig Temp 1 etc.]
 PRESS "KNOB" TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]
 CONTINUE TO SELECT REQUIRED CHANNELS
 ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]
 PRESS "KNOB"
 ROTATE KNOB ▲ ▼ FOR -50.0 to +150.0 [Degrees C].
 PRESS "KNOB"
 SELECTION COMPLETE.

32 “Warm Temp From High”

Sets the warning alarm temperature for temperature sensors that are from the high alarm set point. Only sensors that are set to "Connected" will be available for selection.

PRESS "KNOB"
 ROTATE KNOB ▲ ▼ TO SELECT "Warm Temp From High" on bottom line.
 PRESS "KNOB"
 ENTER PASSWORD IF REQUIRED
 ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE [Dig Temp 1 etc.]
 PRESS "KNOB" TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]
 CONTINUE TO SELECT REQUIRED CHANNELS
 ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]
 PRESS "KNOB"
 ROTATE KNOB ▲ ▼ FOR 0.0 to +30.0 [Degrees C].
 PRESS "KNOB"
 SELECTION COMPLETE.

33 “Low Alarm Temp'ture”

Sets the low alarm temperature for temperature sensors. Only sensors that are set to "Connected" will be available for selection.

PRESS "KNOB"
 ROTATE KNOB ▲ ▼ TO SELECT "Low Alarm Temp'ture" on bottom line.
 PRESS "KNOB"
 ENTER PASSWORD IF REQUIRED
 ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE [Dig Temp 1 etc.]
 PRESS "KNOB" TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]
 CONTINUE TO SELECT REQUIRED CHANNELS
 ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]
 PRESS "KNOB"
 ROTATE KNOB ▲ ▼ FOR -50.0 to +150.0 [Degrees C].
 PRESS "KNOB"
 SELECTION COMPLETE.

FUNCTIONS CONT.

34 “Warm Temp Above Low”

Sets the warning alarm temperature for temperature sensors that are above the low alarm set point. Only sensors that are set to "Connected" will be available for selection.

PRESS "KNOB"

ROTATE KNOB ▲ ▼ TO SELECT "Warm Temp Above Low" on bottom line.

PRESS "KNOB"

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE [Dig Temp 1 etc.]

PRESS "KNOB" TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]

CONTINUE TO SELECT REQUIRED CHANNELS

ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]

PRESS "KNOB"

ROTATE KNOB ▲ ▼ FOR 0.0 to +30.0 [Degrees C].

PRESS "KNOB"

SELECTION COMPLETE.

35 “Hi Temp Alarm Delay”

Sets the high alarm temperature delay for temperature sensors. Only sensors that are set to "Connected" will be available for selection.

PRESS "KNOB"

ROTATE KNOB ▲ ▼ TO SELECT "Hi Temp Alarm Delay" on bottom line.

PRESS "KNOB"

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE [Dig Temp 1 etc.]

PRESS "KNOB" TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]

CONTINUE TO SELECT REQUIRED CHANNELS

ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]

PRESS "KNOB"

ROTATE KNOB ▲ ▼ FOR 0 to 1800 [Seconds].

PRESS "KNOB"

SELECTION COMPLETE.

36 “Lo Temp Alarm Delay”

Sets the low alarm temperature delay for temperature sensors. Only sensors that are set to "Connected" will be available for selection.

PRESS "KNOB"

ROTATE KNOB ▲ ▼ TO SELECT "Lo Temp alarm Delay" on bottom line.

PRESS "KNOB"

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE [Dig Temp 1 etc.]

PRESS "KNOB" TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]

CONTINUE TO SELECT REQUIRED CHANNELS

ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]

PRESS "KNOB"

ROTATE KNOB ▲ ▼ FOR 0 to 1800 [Seconds].

PRESS "KNOB"

SELECTION COMPLETE.

FUNCTIONS CONT.

37 “High Alarm 4-20 Inp”

Sets the high alarm pressure inputs and 4-20ma inputs. Only sensors that are set to "Connected" will be available for selection.

PRESS "KNOB"

ROTATE KNOB ▲ ▼ TO SELECT "High Alarm 4-20 Inp" on bottom line.

PRESS "KNOB"

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE [Suction Press etc.]

PRESS "KNOB" TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]
CONTINUE TO SELECT REQUIRED CHANNELS

ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]

PRESS "KNOB"

ROTATE KNOB ▲ ▼ FOR -100.0 to +4000 [Pressure KPA].

PRESS "KNOB"

SELECTION COMPLETE.

38 “Warm 4-20 From High”

Sets the warning alarm pressure for pressure sensors that are from the high alarm set point. Only sensors that are set to "Connected" will be available for selection.

PRESS "KNOB"

ROTATE KNOB ▲ ▼ TO SELECT "Warm 4-20 From High" on bottom line.

PRESS "KNOB"

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE

PRESS "KNOB" TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]
CONTINUE TO SELECT REQUIRED CHANNELS

ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]

PRESS "KNOB"

ROTATE KNOB ▲ ▼ FOR 0 to 300 [KPA, PPM %].

PRESS "KNOB"

SELECTION COMPLETE.

39 “Low Alarm 4-20 Inp”

Sets the low alarm pressure inputs and 4-20ma inputs. Only sensors that are set to "Connected" will be available for selection.

PRESS "KNOB"

ROTATE KNOB ▲ ▼ TO SELECT "Low Alarm 4-20 Inp" on bottom line.

PRESS "KNOB"

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE [Suction Press etc.]

PRESS "KNOB" TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]
CONTINUE TO SELECT REQUIRED CHANNELS

ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]

PRESS "KNOB"

ROTATE KNOB ▲ ▼ FOR -100.0 to +4000 [Pressure KPA].

PRESS "KNOB"

SELECTION COMPLETE.

FUNCTIONS CONT.

40 “Warm 4-20 Above Low”

Sets the warning alarm pressure for pressure sensors that are above the low alarm set point. Only sensors that are set to "Connected" will be available for selection.

PRESS "KNOB"
 ROTATE KNOB ▲ ▼ TO SELECT "Warm 4-20 Above Low" on bottom line.
 PRESS "KNOB"
 ENTER PASSWORD IF REQUIRED
 ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE
 PRESS "KNOB" TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]
 CONTINUE TO SELECT REQUIRED CHANNELS
 ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]
 PRESS "KNOB"
 ROTATE KNOB ▲ ▼ FOR 0 to 300 [KPA, PPM %].
 PRESS "KNOB"
 SELECTION COMPLETE.

41 “Hi 4-20 Alarm Delay”

Sets the high alarm delay for pressure inputs and 4-20ma inputs. Only sensors that are set to "Connected" will be available for selection.

PRESS "KNOB"
 ROTATE KNOB ▲ ▼ TO SELECT "Hi 4-20 Alarm Delay" on bottom line.
 PRESS "KNOB"
 ENTER PASSWORD IF REQUIRED
 ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE [Suction Press etc.]
 PRESS "KNOB" TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]
 CONTINUE TO SELECT REQUIRED CHANNELS
 ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]
 PRESS "KNOB"
 ROTATE KNOB ▲ ▼ FOR 0 to 1800 [Seconds].
 PRESS "KNOB"
 SELECTION COMPLETE.

42 “Lo 4-20 Alarm Delay”

Sets the low alarm delay for pressure inputs and 4-20ma inputs. Only sensors that are set to "Connected" will be available for selection.

PRESS "KNOB"
 ROTATE KNOB ▲ ▼ TO SELECT "Lo 4-20 Alarm Delay" on bottom line.
 PRESS "KNOB"
 ENTER PASSWORD IF REQUIRED
 ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE [Suction Press etc.]
 PRESS "KNOB" TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]
 CONTINUE TO SELECT REQUIRED CHANNELS
 ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]
 PRESS "KNOB"
 ROTATE KNOB ▲ ▼ FOR 0 to 1800 [Seconds].
 PRESS "KNOB"
 SELECTION COMPLETE.

FUNCTIONS CONT.

43 “Dig Temp's Connected”

Sets whether each digital type temperature sensor is connected or not. All digital sensors may be selected in this function.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Dig Temp's Connected” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE [Dig Temp 1 etc.]

PRESS “KNOB” TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]
CONTINUE TO SELECT REQUIRED CHANNELS

ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]

PRESS “KNOB”

SELECTION COMPLETE.

44 “PT100 Temp Connected”

Sets whether each PT100 type temperature sensor is connected or not. All PT100 sensors may be selected in this function.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “PT100 Temp Connected” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE [PT100 Temp 1 etc.]

PRESS “KNOB” TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]
CONTINUE TO SELECT REQUIRED CHANNELS

ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]

PRESS “KNOB”

SELECTION COMPLETE.

45 “Press's Connected”

Sets whether each pressure transducer (or any 4-20ma input) is connected or not. All 8 channels may be selected in this function.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Press's Connected” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE [Suction Press etc.]

PRESS “KNOB” TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]
CONTINUE TO SELECT REQUIRED CHANNELS

ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]

PRESS “KNOB”

SELECTION COMPLETE.

FUNCTIONS CONT.

46 “Set 4-20 Input Span”

Sets the Low and High input span for pressure transducers and or the Refrigerant Transducer input and other 4-20ma inputs. Only sensors that are set to "Connected" will be available for selection.

NOTE:- Set the 4-20ma control input (number 2 input) to 40 for low and 200 for high so that the display will indicate 0 to 100% correctly.

PRESS "KNOB"

ROTATE KNOB ▲ ▼ TO SELECT "Set 4-20 Input span" on bottom line.

PRESS "KNOB"

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE [Suction Press etc.]

PRESS "KNOB" TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]

CONTINUE TO SELECT REQUIRED CHANNELS

ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]

PRESS "KNOB"

ROTATE KNOB ▲ ▼ FOR -200 to 20000 [4-20ma Low].

PRESS "KNOB"

ROTATE KNOB ▲ ▼ FOR -200 to 20000 [4-20ma High].

PRESS "KNOB"

SELECTION COMPLETE.

47 “Digital IN Connected”

Sets whether each digital input is connected or not. All 8 channels may be selected in this function.

PRESS "KNOB"

ROTATE KNOB ▲ ▼ TO SELECT "Digital IN Connected" on bottom line.

PRESS "KNOB"

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE [Room Run Inpt etc.]

PRESS "KNOB" TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]

CONTINUE TO SELECT REQUIRED CHANNELS

ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]

PRESS "KNOB"

SELECTION COMPLETE.

FUNCTIONS CONT.

48 “Digital IN Inverted”

Sets whether each digital input is inverted or not. The default is that a digital input is open off if not connected to ground and on if connected to ground. This function can reverse one or more to be the case. All 8 channels may be selected in this function.

PRESS “KNOB”
 ROTATE KNOB ▲ ▼ TO SELECT “Digital IN Inverted” on bottom line.
 PRESS “KNOB”
 ENTER PASSWORD IF REQUIRED
 ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE [Remote Run etc.]
 PRESS “KNOB” TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]
 CONTINUE TO SELECT REQUIRED CHANNELS
 ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]
 PRESS “KNOB”
 SELECTION COMPLETE.

49 “Temp Sen for Ambient”

Sets the temperature sensors that are used for ambient temperature. These sensors are used for the control of the celpad pump. All sensors (both digital and PT100) that are set to “Connected” will be available for selection. If more than one sensor is selected, the average of the selected sensors will be used for the control temperature.

PRESS “KNOB”
 ROTATE KNOB ▲ ▼ TO SELECT “Temp Sen for Ambient” on bottom line.
 PRESS “KNOB”
 ENTER PASSWORD IF REQUIRED
 ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE [Dig Temp 1 etc.]
 PRESS “KNOB” TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]
 CONTINUE TO SELECT REQUIRED CHANNELS
 ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]
 PRESS “KNOB”
 SELECTION COMPLETE.

50 “Temp Sen's Cond Ctrl”

Sets the temperature sensors that are used for condenser control (fluid out) if it is to be controlled on temperature, also used for the super heat calculation of the fluid out. All sensors (both digital and PT100) that are set to “Connected” will be available for selection. If more than one sensor is selected, the average of the selected sensors will be used for the control temperature.

PRESS “KNOB”
 ROTATE KNOB ▲ ▼ TO SELECT “Temp Sen's Cond Ctrl” on bottom line.
 PRESS “KNOB”
 ENTER PASSWORD IF REQUIRED
 ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE [Dig Temp 1 etc.]
 PRESS “KNOB” TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]
 CONTINUE TO SELECT REQUIRED CHANNELS
 ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]
 PRESS “KNOB”
 SELECTION COMPLETE.

FUNCTIONS CONT.

54 “Temp Sen's Fluid In”

Sets the temperature sensors that are used for the fluid in temperature, also used for the super heat calculation of the fluid in. All sensors (both digital and PT100) that are set to "Connected" will be available for selection. If more than one sensor is selected, the average of the selected sensors will be used for the control temperature.

PRESS "KNOB"

ROTATE KNOB ▲ ▼ TO SELECT "Temp Sen's Fluid In" on bottom line.

PRESS "KNOB"

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE [Dig Temp 1 etc.]

PRESS "KNOB" TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]

CONTINUE TO SELECT REQUIRED CHANNELS

ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]

PRESS "KNOB"

SELECTION COMPLETE.

55 “Set Data Logging”

Sets the data logging times (*puts information values and time*) into memory for retrieval latter via the display, printer or computer.

PRESS "KNOB"

ROTATE KNOB ▲ ▼ TO SELECT "Set Data Logging" on bottom line.

PRESS "KNOB"

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR None (don't do), Every 1 Minute, Every 5 Minutes, Every 10 Minutes,
Every 30 Minutes, Every 1 Hour or Every 2 Hours.

PRESS "KNOB"

SELECTION COMPLETE.

FUNCTIONS CONT.

56 “Set Time & Date”

Sets the Real Time Clock

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Set Time & Date” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR THE HOURS (24 HOUR) [Hours]

PRESS “KNOB”

ROTATE KNOB ▲ ▼ FOR THE MINUTES [Minutes]

PRESS “KNOB”

ROTATE KNOB ▲ ▼ FOR THE SECONDS [Seconds]

PRESS “KNOB”

ROTATE KNOB ▲ ▼ FOR THE DAY [Day SUN = 1]

PRESS “KNOB”

ROTATE KNOB ▲ ▼ FOR THE DATE [Date]

PRESS “KNOB”

ROTATE KNOB ▲ ▼ FOR THE MONTH [Month]

PRESS “KNOB”

ROTATE KNOB ▲ ▼ FOR THE YEAR [Year]

PRESS “KNOB”

ROTATE KNOB ▲ ▼ FOR THE CENTURY [Century]

PRESS “KNOB”

SELECTION COMPLETE.

57 “Password YES/NO”

Selects whether the Password is required for setting functions or not.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Password YES/NO” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR YES or NO [Password].

PRESS “KNOB”

SELECTION COMPLETE.

FUNCTIONS CONT.

58 “Change Password”

Sets the Password of a number from 0000 to 5999. If the password was not active when this function is selected, the password will be required. If the wrong password is entered, the display will indicate this. You can try again or press the x50 button to revert to normal running.

PRESS “KNOB”
ROTATE KNOB ▲ ▼ TO SELECT “Change Password” on bottom line.
PRESS “KNOB”
ROTATE KNOB ▲ ▼ FOR 1 to 5 [Password].
PRESS “KNOB”
ROTATE KNOB ▲ ▼ FOR 1 to 9 [Password].
PRESS “KNOB”
ROTATE KNOB ▲ ▼ FOR 1 to 9 [Password].
PRESS “KNOB”
ROTATE KNOB ▲ ▼ FOR 1 to 9 [Password].
PRESS “KNOB”
ROTATE KNOB ▲ ▼ FOR 0 to 5999 [Password].
PRESS “KNOB”
SELECTION COMPLETE.

59 “Ram Memory Check”

For Testing the RAM and EEPROM memory. This function will not remove the contents of memory. If any error messages display on the LCD call your nearest service agent for service. This function can take up to 20 seconds. This function should not be used unless by an authorized technician.

PRESS “KNOB”
ROTATE KNOB ▲ ▼ TO SELECT “Ram Memory Check” on bottom line.
ENTER PASSWORD IF REQUIRED
PRESS AND HOLD “KNOB” UNTIL “Done Press ENTER” is displayed on the bottom line.
RELEASE “KNOB”
PRESS “KNOB”
SELECTION COMPLETE.

60 “Test Display/Rst Log”

Displays the model number and version number and resets the data logged to nothing logged.

PRESS “KNOB”
ROTATE KNOB ▲ ▼ TO SELECT “Test Display/Rst Log” on bottom line.
ENTER PASSWORD IF REQUIRED
PRESS “KNOB” “Done Press ENTER” is displayed on the bottom line.
PRESS “KNOB”
SELECTION COMPLETE.

FUNCTIONS CONT.

61 “Set Dig Temp Offset”

Sets an offset into non volatile ram for any or all digital temperature sensors. This is required if the temperature reading is wrong. To check the accuracy of the sensors, place them into an ice bath (0.0 oC) and check the reading. If the sensor does not read 0.0 oC, the amount of discrepancy can be entered so that the sensor will read accurately at 0.0 oC. Only sensors that are set to "Connected" will be available for selection

PRESS "KNOB"

ROTATE KNOB ▲ ▼ TO SELECT "Set Dig Temp Offset" on bottom line.

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE [Dig Temp 1 etc.]

PRESS "KNOB" TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]
CONTINUE TO SELECT REQUIRED CHANNELS

ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]

PRESS "KNOB"

ROTATE KNOB ▲ ▼ FOR -20.0 TO +20.0 oC [Degrees C]

SELECTION COMPLETE.

62 “Set PT100 Tmp Offset”

Sets an offset into non volatile ram for any or all PT100 temperature sensors. This is required if the temperature reading is wrong. To check the accuracy of the sensors, place them into an ice bath (0.0 oC) and check the reading. If the sensor does not read 0.0 oC, the amount of discrepancy can be entered so that the sensor will read accurately at 0.0 oC. Only sensors that are set to "Connected" will be available for selection

PRESS "KNOB"

ROTATE KNOB ▲ ▼ TO SELECT "Set Dig Temp Offset" on bottom line.

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR SELECTING CHANNELS TO CHECK/CHANGE [PT100 Temp 1 etc.]

PRESS "KNOB" TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]
CONTINUE TO SELECT REQUIRED CHANNELS

ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]

PRESS "KNOB"

ROTATE KNOB ▲ ▼ FOR -20.0 TO +20.0 oC [Degrees C]

SELECTION COMPLETE.

FUNCTIONS CONT.

63 “Add Dig Temp Sensor”

All digital temperature sensors have a unique serial number embedded within the sensor. To add a sensor or replace an existing sensor, do the following. Remove all currently connected sensors (hard wired). Place the new sensor into the correct terminals and do the following. If more than one sensor channel is selected the display will indicate this and jump out of the function. All sensor numbers are available to select from in this function.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Add Dig Temp Sensor” on bottom line.

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR SELECTING CHANNEL TO ADD SENSOR ON TO [Dig Temp 1 etc.]

PRESS “KNOB” TO SELECT OR NOT TO SELECT SELECTED CHANNEL [YES NO]
CONTINUE TO SELECT REQUIRED CHANNELS

ROTATE KNOB ▲ ▼ TO DISPLAY -----> [Continue Next]

PRESS “KNOB” MAKE SURE SENSOR IS CONNECTED CORRECTLY.

PRESS “KNOB” THE SENSORS SERIAL NUMBER WILL BE DISPLAYED ON THE BOTTOM LINE.

IF THE ACCESS TO THE SENSOR FAILED THE DISPLAY WILL INDICATE THIS. CHECK CONNECTIONS AND REPLACE THE SENSOR AND TYR AGAIN.

PRESS “KNOB” ENTERS THE SERIAL NUMBER INTO NON VOLATILE RAM

PRESS “KNOB”

SELECTION COMPLETE.

64 “Set RS485/232 Baud”

Sets the Baud Rate of the RS485 and RS232 Ports. The Stop bit is set to 1 and the Parity is set OFF automatically. This should be 9600 if connected to a computer.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Set RS485/232 Baud” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 110, 300, 1200, 2400, 4800 or 9600 [Baud Rate].

PRESS “KNOB”

SELECTION COMPLETE.

65 “Display Brightness”

Sets the brightness of the displays back light. 0 = off and 255 = full on.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Display Brightness” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 0 to 255.

PRESS “KNOB”

SELECTION COMPLETE.

FUNCTIONS CONT.

66 “Number of Resets S/N”

Displays the number of times the unit was reset (power failures) and the serial number of the unit. After this function the number of resets counter is set to 0.

PRESS “KNOB”
 ROTATE KNOB ▲ ▼ TO SELECT “Number of Resets S/N” on bottom line.
 PRESS “KNOB”
 ENTER PASSWORD IF REQUIRED
 PRESS “KNOB” Done Press ENTER on the bottom line
 PRESS “KNOB”
 SELECTION COMPLETE.

67 “TempScan Ex 4-20 Ctl”

Sets whether a TempScan is connected or each control (compressor and or condenser) or not. The condenser can be connected to a TempScan or not. If the condenser is connected to a TempScan, all fan stages are controlled by the TempScan, the celpad pump and wash solenoid are controlled by the TD-32-C. Also the MultiScan can be controlled by an external 4-20ma input in step mode or variable speed drive mode.

PRESS “KNOB”
 ROTATE KNOB ▲ ▼ TO SELECT “TempScan Ex 4-20 Ctl” on bottom line.
 PRESS “KNOB”
 ENTER PASSWORD IF REQUIRED
 PRESS “KNOB” FOR “Single Stand Alone”, “TempScan Con 2 Wire”,
 “TempScan Con 4 Wire”, “4-20ma Input Step Cl” or “4-20ma Input Var Ctl”.
 PRESS “KNOB”
 SELECTION COMPLETE.

68 “Reset Celpad Run Hrs”

Sets the celpad pump run hours to 0.

PRESS “KNOB”
 ROTATE KNOB ▲ ▼ TO SELECT “Reset Celpad Run Hrs” on bottom line.
 PRESS “KNOB”
 ENTER PASSWORD IF REQUIRED
 PRESS “KNOB” Done Press ENTER on the bottom line
 PRESS “KNOB”
 SELECTION COMPLETE.

69 “Reset Cond'ser Hours”

Sets the condenser run hours to 0.

PRESS “KNOB”
 ROTATE KNOB ▲ ▼ TO SELECT “Reset Cond'ser Hours” on bottom line.
 PRESS “KNOB”
 ENTER PASSWORD IF REQUIRED
 PRESS “KNOB” Done Press ENTER on the bottom line
 PRESS “KNOB”
 SELECTION COMPLETE.

FUNCTIONS CONT.

70 “4-20 Weight Average”

Sets the amount of averaging to do on the 4-20ma input channels. The higher the number the smoother the value displayed.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “4-20 Weight Average” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 0 to 10 [Pressure KPA].

PRESS “KNOB”

SELECTION COMPLETE.

71 “Type of Refrigerant”

Sets the type of refrigerant used. The following refrigerants available are NOT USED (no alarm will be activated if this is selected and no display), R717, R 507, R 12, R 22, R 134a, R 404A, R 407B, R 407C.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Type of Refrigerant” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR THE TYPE OF REFRIGERANT OR Not Used

PRESS “KNOB”

SELECTION COMPLETE.

72 “Computer Connected”

Sets whether a computer is connected to the unit. If a computer is connected and 4 wire communications to a TempScan is also connected with other modules (CompScans etc.) are also connected, the 4 wire communications from the TempScan cannot be done while this unit is set to “Yes” for computer connected.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Computer Connected” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR Yes or No.

PRESS “KNOB”

SELECTION COMPLETE.

73 “LED Display Intens'y”

Sets the brightness of the LED display from 0 = Dull and 15 = full on. This is an optional extra module that can be fitted to the unit.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “LED Display Intens'y” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 0 to 15.

PRESS “KNOB”

SELECTION COMPLETE.

FUNCTIONS CONT.

74 “Reset Password”

Resets the password to 888. The x 50 must be pressed while this is done for the last "KNOB" push. If the x50 switch is not pressed the display will indicate that resetting the password is not allowed. If the x50 switch is pressed the display will indicate that the password was reset to 888.

PRESS "KNOB"

ROTATE KNOB ▲ ▼ TO SELECT "Reset Password" on bottom line.

PRESS "KNOB" **WITH THE X50 SWITCH PRESSED.**

PRESS "KNOB"

SELECTION COMPLETE.

75 “Display Annunciation”

Sets whether to display the temperature annunciations when displaying the temperatures. Instead of displaying "Dig Temp 1" it will display the control or indication of that temperature sensor i.e. "Room Cnt". If more than 1 sensor is allocated to a control or indication, it will show that by displaying the control or indication for all sensors allocated to that control or indication.

PRESS "KNOB"

ROTATE KNOB ▲ ▼ TO SELECT "Display Annunciation" on bottom line.

PRESS "KNOB"

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR YES or NO.

PRESS "KNOB"

SELECTION COMPLETE

76 “Cel Pad Control Type”

Sets the type of control for the celpad pump from control on ambient temperature or turn on after a delay when the required number of fans are full on.

PRESS "KNOB"

ROTATE KNOB ▲ ▼ TO SELECT "Cel Pad Control Type" on bottom line.

PRESS "KNOB"

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR Control Ambient Temp or Control Num Fans ON

PRESS "KNOB"

SELECTION COMPLETE.

77 “CelPad Turn ON Delay”

Sets the time out for the celpad pump to turn on when all fans are full on and the control of the celpad pump is controlled on all fans full on.

PRESS "KNOB"

ROTATE KNOB ▲ ▼ TO SELECT "CelPad Turn ON Delay" on bottom line.

PRESS "KNOB"

ENTER PASSWORD IF REQUIRED

PRESS "KNOB"

ROTATE KNOB ▲ ▼ FOR 0 TO 900 SECONDS

PRESS "KNOB"

SELECTION COMPLETE.

FUNCTIONS CONT.

78 “Water Level Swch Dly”

Sets the delay before the water level switch is activated (recognized to be on or off) in seconds.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Water Level Swch Dly” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 0 to 30 [Seconds]

PRESS “KNOB”

SELECTION COMPLETE.

79 “Celpad ON Fan Number”

Sets the number of fans to be on (running full speed) when the celpad pump turns on. If the type of control is 1, 2, 3 or 4 fan stepped and no variable speed the celpad pump will turn on when the numbered fan (set in this function) turns on and will not turn off until all fans are turned off. The celpad pump on percentage is not used if the control is stepped only.

If the type of control is set to 1, 2, 3, or 4 fans stepped and variable, the celpad pump will turn on when the numbered fan (set in this Function) turns on and the variable speed percentage is equal or greater than the set point (set in “Celpad Pump Turn ON%”).

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Celpad ON Fan Number” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 1 to 4 [Fans]

PRESS “KNOB”

SELECTION COMPLETE.

80 “Celpad Pump Turn ON%”

Sets the fan speed percentage at which the celpad pump is turned on if the type of control is stepped variable.

NOTE: Set to 0% if there is no variable speed drive used.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Celpad Pump Turn ON%” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR 0 to 100 [%]

PRESS “KNOB”

SELECTION COMPLETE.

FUNCTIONS CONT.

81 “Allow Dmp if Pump ON”

Sets wether the unit will dump the water at the set time if the celpad pump is still on i.e. the pressure or temperature is to high for the celpad pump to be off.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Allow Dmp if Pump ON” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR YES or NO Allow Dump

PRESS “KNOB”

SELECTION COMPLETE.

82 “Analog PT100 / AD590”

Sets the temperature sensors that are used for the analog (1 to 7) to be either PT100 or AD590 temperature sensors.

PRESS “KNOB”

ROTATE KNOB ▲ ▼ TO SELECT “Analog PT100 / AD590” on bottom line.

PRESS “KNOB”

ENTER PASSWORD IF REQUIRED

ROTATE KNOB ▲ ▼ FOR SELECTING PT100 or AD590 Temperature sensors

PRESS “KNOB”

SELECTION COMPLETE.

STARTUP DEFAULT SET POINTS & COMPLETE RESET.

If for any reason the unit locks up, the unit may be reset and the real time clock restarted and all set points set to the first set of default values by doing the following.

Remove the power from the unit. Press and hold the x50 button and with the knob pressed, apply power to the unit and all set points will be set to a default value and the real time clock will be started with a valid time. The display will indicate that a reset was preformed.

The temperature offset values will not be changed. The temperature offset values can be changed to 0 using there set points. This should not be required unless the temperature offset values were lost. If they were lost, re calibration of the temperature sensors will have to be done or if the temperature offset values were saved (written down manually) they can be re entered using there set points.

After this has been done all set points will need to be set for the users requirements.

SET POINTS CRC:- CYCLIC REDUNDANCY CHECK & LIMP HOME.

A CRC check is done on all set points each 5 seconds and if the set points become corrupt for any reason the saved set points will be loaded into all set points for the system to use these set points.

Set points are automatically saved each time any set point is changed.

If the CRC check is not correct and the saved set values have been loaded into the set points to use, The Display will indicate this with the "-" between the minutes and seconds on the real time clock showing "->" (right pointing arrow). The unit will continue to run as normal.

Press the "x50" button to revert to normal displays noting that the set points have been re loaded and should be checked to make sure all set points are the required values.

VERSION NUMBER.

THIS IS DISPLAYED WHEN "TEST DISPLAY/RST LOG" FUNCTION IS EXECUTED. THE LCD WILL DISPLAY THE COPY RIGHT INFORMATION AND THE MODEL NUMBER AND SOFTWARE VERSION. ALSO THE MODEL NUMBER AND VERSION NUMBER IS DISPLAYED ON THE LAST PAGE OF THE NORMAL RUN DISPLAY PAGES.

DEFAULT VALUES.

1	"Control Auto or OFF"	AUTO	
2	"Condenser Set Point"	1000	KPA
3	"Condenser Diff'tial"	40	KPA
4	"Condenser Load Time"	20	SECONDS
5	"Condenser Unload Tme"	20	SECONDS
6	"Conden'r Step Amount"	5	%
7	"Condenser Min % Run"	20, 50, 60,75	%
8	"Cond cntl PRESS-TEMP"	PRESSURE	
9	"Cond Proportional Ct"	0	
10	"Type of Condenser"	1	STAGE STEPPED
11	"Condenser Number ID"	1	
12	"Condenser Model Type"	STANDARD WATER FANS	
13	"Start Water Dump Tme"	06:00	HOURS : MINUTES
14	"Water Dump Duration"	30	SECONDS
15	"Celpad Pump Set Pnt"	25.0	oC
16	"Celpad Pump Diff'tal"	1.0	oC
17	"Celpad Pump Delay"	600	SECONDS
18	"Force Celpad AutoDry"	SUNDAY	
19	"Auto Dry Minim Time"	120	MINUTES
20	"Water Makeup Temp ON"	+1.0 oC FROM SET POINT	
21	"Celpad Wtr Flush Tme"	300	SECONDS
22	"Wt/Dump/V Operation"	NO POWER IS SHUT	
23	"Wash ON Set Point"	+300	KPA
24	"Wash OFF Set Point"	+290	KPA
25	"1st Stage ON/OFF Dly"	NO	
26	"Fans Order Rotate"	NO	
27	"Dump Open When Stop"	NO	
28	"Night Set Back St Pt"	20	KPA
29	"Set Back Time Start"	20:00	HOURS : MINUTES
30	"Set Back Time Finish"	07:00	HOURS : MINUTES

DEFAULT VALUES CONT.

31	"High Alarm Temp're"	ALL +150.0	oC
32	"Warn Temp From High"	ALL +5.0	oC.
33	"Low Alarm Temp'ure"	ALL -50.0	oC
34	"Warn Temp Above Low"	ALL +5.0	oC.
35	"Hi Temp Alarm Delay"	ALL 1800	
36	"Low Temp Alarm Delay"	ALL 1800	
37	"High Alarm 4-20 Inp"	ALL 3000	KPA
38	"Warn 4-20 From High"	ALL 30	KPA
39	"Low Alarm 4-20 Inp"	ALL -100	KPA
40	"Warn 4-20 Above Low"	ALL 30	KPA
41	"Hi 4-20 Alarm Delay"	ALL 1800	SECONDS
42	"Lo 4-20 Alarm Delay"	ALL 1800	SECONDS
43	"Dig Temp's Connected"	ALL CONNECTED	
44	"PT100 Temp Connected"	ALL NOT CONNECTED	
45	"Press's Connected"	FIRST 4 CONNECTED, REST NOT	
46	"Set 4-20 Input Span"	4-20 INPUT CONTROL 40 TO 200, REST ALL 0 TO 3000	
47	"Digital IN Connected"	REMOTE RUN CONNECTED COND WATER LEVEL CONNECTED REST NOT CONNECTED	
48	"Digital IN Inverted"	NONE	
49	"Temp Sen for Ambient"	Dig Temp Number 1	
50	"Temp Sen's Cond Ctrl"	Dig Temp Number 2	
51	"Comp Sen's Celpad Air"	Dig Temp Number 3	
52	"Temp Sen's Exh't Air"	Dig Temp Number 4	
53	"Temp Sen's Cel Water"	Dig Temp Number 5	
54	"Temp Sen's Fluid In"	Dig Temp Number 6	

DEFAULT VALUES.

55	"Set Data Logging"	EVERY 1 MIUTE
56	"Set Time & Date"	VALID TIME AND DATE
57	"Password YES/NO"	NO
58	"Change Password"	
59	"Ram Memory Check"	
60	"Test Display/Rst log"	
61	"Set Dig Temp Offset"	ALL 0.0 oC
62	"Set PT100 Tmp Offset"	ALL 0.0 oC
63	"Add Dig Temp Sensor"	
64	"Set RS485/232 Baud"	9600
65	"Display Brightness"	255
66	"Number of Resets S/N"	
67	"TempScan Ex 4-20 Ctl"	SINGLE STAND ALONE
68	"Reset Celpad Run Hrs"	0
69	"Reset Cond'ser Hours"	0
70	"4-20 Weight Average"	1
71	"Type of refrigerant"	NONE (NOT USED)
72	"Computer Connected"	NO
73	"LED Display Intens'y"	15
74	"Reset Password"	0888
75	"Display Annunciation"	NO
76	"Cel Pad Control Type"	Control on Ambient Temp.
77	"CelPad Turn ON Delay"	0 Seconds
78	"Water Level Swch Dly"	10 Seconds
79	"Celpad Fan ON Number"	4 Fans
80	"Celpad Pump Turn ON%"	0%
81	"Allow Dmp if Pump ON"	YES
82	"Analog PT100 / AD590"	PT100

SPECIFICATIONS A-32-R

ALL SET POINTS ARE FOR INDIVIDUAL CHAN'S WHERE APPLICABLE.

TEMPERATURE INPUTS

<i>(Digital)</i>	:-	18B20 temperature sensor
<i>(Analog)</i>	:-	PT100 temperature sensor.
MAX TEMPERATURE INPUTS	:-	17
4-20ma INPUTS SUPPLY	:-	12V DC
MAX 4-20ma INPUTS	:-	8
4-20ma RANGE	:-	-200 KPA/PPM to +3000 KPA/PPM
4-20ma OUTPUTS	:-	1
4-20ma OUTPUT POWER	:-	Loop powered 12 - 36 V dc.
DIGITAL INPUTS	:-	8
LCD DISPLAY	:-	4 line x 20 character super twist.
KEYBOARD SETTING	:-	Spin up/down and push and x50 button
RESOLUTION <i>(temperature)</i>	:-	0.1 oC.
REPEATABILITY <i>(temperature)</i>	:-	0.2 oC.
RANGE		
<i>(Digital)</i>	:-	-25.0 - +125.0 Degrees C
<i>(Analog)</i>	:-	-50.0 - + 150.0 Degrees C
ACCURACY oC.		
<i>(Digital)</i>	:-	+/- 0.5 Degrees C (sensor manufacturer)
<i>(Analog)</i>	:-	User select
ALL MEMORY BACKUP	:-	1 year minimum.
ALARM SET POINT RANGE		
<i>(HIGH & LOW)</i>	:-	-50.0 oC to +150.0 oC.
ALARMS SET POINT		
RESOLUTION	:-	0.1 oC.
ALARM DELAY SET RANGE		
<i>(HI & LO)</i>	:-	0 - 1800 seconds. <i>(1 on each channel).</i>
ALARMS DELAY SET		
RESOLUTION	:-	1 second.
ALARM <i>(INTERNAL)</i>	:-	pulsed visual and audio.
ALARM OUTPUT	:-	dry relay output, rated 24 V d.c. 1 A.

SPECIFICATIONS A-32 CON'T

ALARM INPUT (DIGITAL ACTIVATE)	:-	short to signal common for instant audible alarm.
DATA LOGGING TIME BETWEEN	:-	1, 5, 10, 30, 60, 120 minutes or none.
DATA LOGGING MAXIMUM	:-	220 loggs.
PASSWORD	:-	0000-5999 (<i>may be active or not active</i>).
Condenser Number ID.	:-	set between 1 and 12 inclusive.
RS 232 PORT (FULL DUPLEX)	:-	4 pin push in connector, maximum distance allowed, 6 meters.
RS 485 PORT (FULL DUPLEX)	:-	4 x, terminals. Maximum distance allowed, 500 meters
BAUD RATE	:-	110, 300, 1200, 2400, 4800, 9600.
STOP BITS	:-	1. (<i>fixed</i>),
PARITY	:-	none (<i>fixed</i>).
COMPUTER COMMUNICATIONS	:-	Most functions are available via computer & RS232.
CONTROL SERIAL (TO TempScan)	:-	2 wire. maximum distance 500 metres. (<i>coax twisted pair</i>).
CONTROL SERIAL (TO TempScan)	:-	4 wire. maximum distance 500 metres. (<i>RS485 coax twisted 2 pair</i>).
CONTROL OUTPUTS	:-	8 Rating, 24v AC 5AMP total over the 8 Outputs voltage free.
POWER SUPPLY	:-	24 V dc +/- 10%.
MOUNTING	:-	DIN Rail Mount
SIZE	:-	L 160mm x W 100mm x 80mm.

