SULLAIR

SUPERVISOR II
INSTRUCTION MANUAL
ALL MODELS

Part Number 02250071-398

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SAFETY

1.1 GENERAL

Sullair Corporation and its subsidiaries design and manufacture all of their products so they can be operated safely. However, the responsibility for safe operation rests with those who use and maintain these products. For safe machine operation it is vitally important to review all safety precautions noted in the Safety Section of your compressor's Operator's Manual. The precautions listed there, as well as those following, are offered as a guide which, if conscientiously followed, will minimize the possibility of accidents throughout the useful life of this equipment.

The compressor should be operated only by those who have been trained and delegated to do so, and who have read and understood their compressor's Operator's Manual. Failure to follow the instructions, procedures and safety precautions listed here and in the Operator's Manual may result in accidents and injuries.

NEVER start the compressor unless it is safe to do so. **DO NOT** attempt to operate the compressor with a known unsafe condition. Tag the compressor and render it inoperative by disconnecting and locking out all power at source or otherwise disabling its prime mover so others who may not know of the unsafe condition cannot attempt to operate it until the condition is corrected.

Use and operate the air compressor only in full compliance with all pertinent OSHA requirements or any pertinent Federal, State, and Local codes or requirements.

DO NOT modify the compressor and/or controls in any way except with written factory approval.

1.2 ELECTRICAL SHOCK

A. Keep all parts of the body and any hand–held tools or other conductive objects away from exposed live parts of electrical system. Maintain dry footing, stand on insulating surfaces and **DO NOT** contact any other portion of the compressor when making adjustments or repairs to exposed live parts of the electrical system.

B. Attempt repairs only in clean, dry and well lighted and ventilated areas.

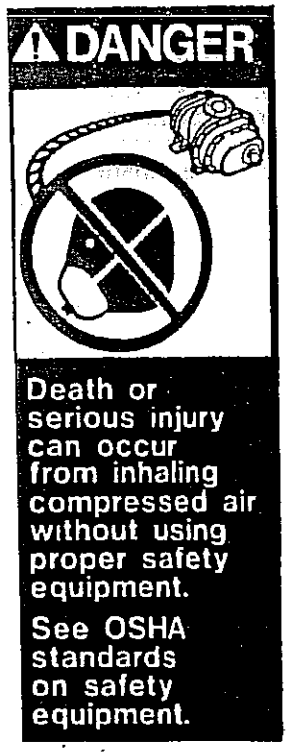
C. Stay clear of the compressor during electrical storms! It can attract lightning.

1.3 DECALS

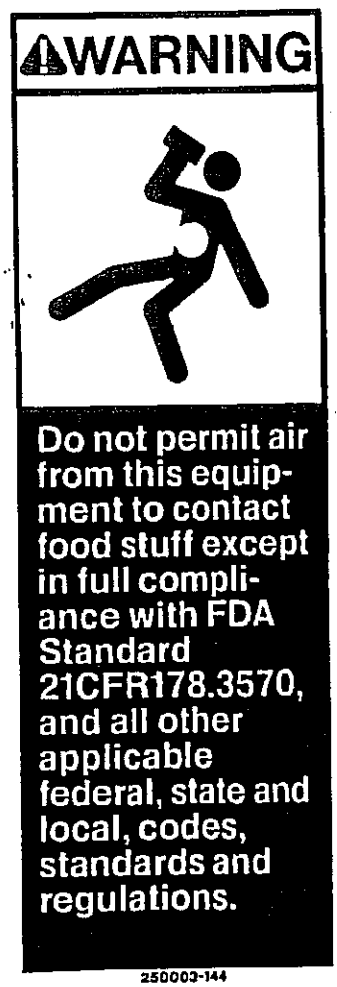
See Figure 1–1. The Supervisor II control panel contains several decals which contain necessary information for safe performance. These decals should never be removed. If a decal becomes damaged, contact your nearest Sullair Distributor or the Sullair Corporation factory Service Department for replacement parts (Note: When ordering new decals, use part number printed on decal face.).

Figure 1–1 Decals

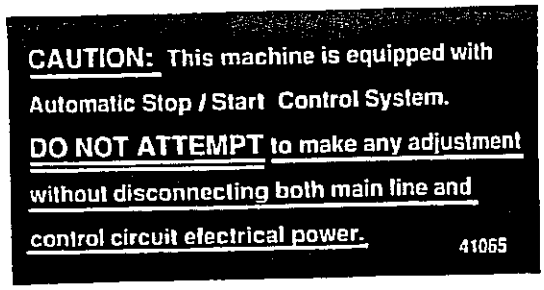
250017-903



250027-935 *

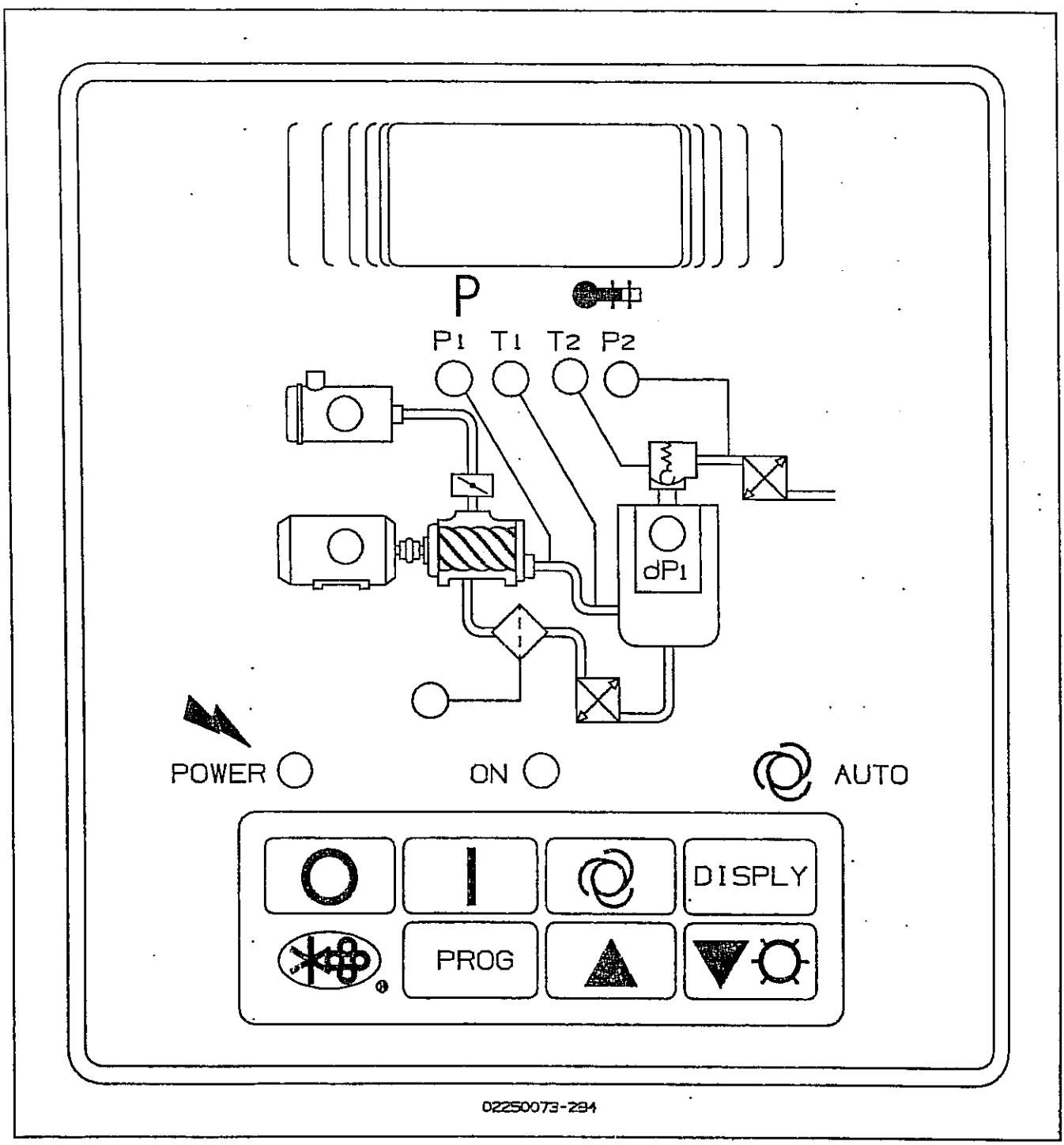


250003-144 *



* OSHA and FDA guidelines are superceded by any Federal, State or Local regulations whenever applicable.

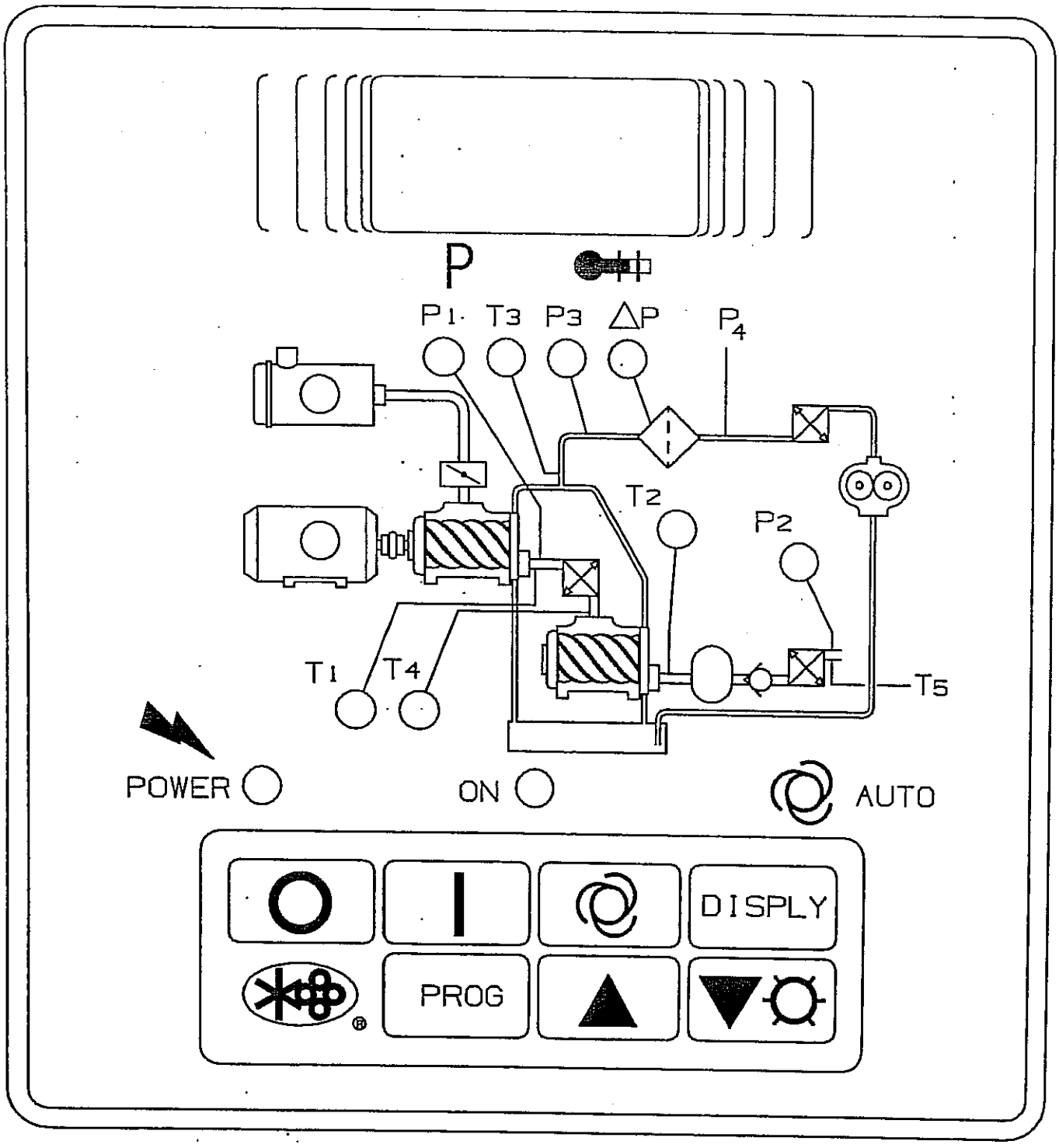
Figure 2–1 Supervisor II Panel – All Models Except DS–13



Section 2

SUPERVISOR II DESCRIPTION

Figure 2–1A Supervisor Panel – DS–13



02250073-286

Section 2

SUPERVISOR II DESCRIPTION

2.1 BASIC INTRODUCTION

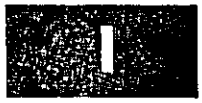
Refer to Figure 2–1. The Supervisor II has a two line display to show temperature, pressure and status. It has a keypad for operating the compressor, programming the control points and selecting displays. There is a graphic illustration with lamps that light to show the item being displayed. The lamps flash if that component is in an alarm condition.

2.2 KEYPAD–ALL MODELS

The keypad is used to control the machine as well as display status and change setpoints. Refer to figure 2–1 for following key descriptions.

- **Stop** – Used to put the machine into manual stop. It is also used to clear alarm conditions.

- **Continuous** – Starts machine if no alarm conditions are present. Also used to clear alarm conditions while machine is running.



- **Auto** – Starts machine and selects auto mode if no alarm conditions are present. Also used to clear alarm conditions while machine is running.

- **Display** – Used to display pressures, temperatures and other status information (See section on STATUS DISPLAYS).

- **Logo** – Used for various functions described in later sections

- **Program** – Used to enter the parameter change mode where control parameters may be displayed and changed (See PARAMETER SETUP).

- **Up arrow** – Used in status displays to change displays and in parameter setup mode to increment a value.

- **Down arrow, lamp test** – Used in status displays to change displays and in parameter setup mode to increment a value. When in the default display the key will light all the lamps for three seconds.

2.3 STATUS DISPLAYS – SEE 2.3A THROUGH 2.3F FOR SPECIFIC MODELS

2.3A STATUS DISPLAYS – ES–8

By default the line pressure (P2) and discharge temperature (T1) are shown on the bottom line of the display, and machine status on the top line. The following are the various machine status messages that indicate the state of the compressor:

(Display graphics shown below.)

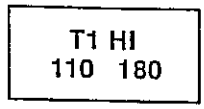
- **STOP** – Compressor is off.
- **STANDBY** – Compressor is off but armed to start. This state may be entered because of a power up, or the unload timer had expired and stopped the machine. NOTE : The machine may start at any time.
- **STARTING** – Machine is trying to start.
- **OFF LOAD** – Machine is running and off loaded.
- **ON LOAD** – Machine is running and loaded.
- **FULL LD** – Machine is running and fully loaded. This state is only displayed if the machine has a full load valve.
- **RMT STOP** – Compressor is off but armed to start. The machine will start when the remote start contact is closed. NOTE : the machine may start at any time.
- **SEQ STOP** – Compressor is off but armed to start. The machine will start when the sequencing conditions meet the critera to start. NOTE : the machine may start at any time.

This default display appears as follows:

STOP
110 180

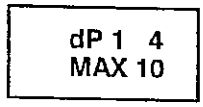
SUPERVISOR II DESCRIPTION

If there are alarms active they will alternately be shown with the default display. The machine status will be displayed for 2 seconds then the alarms for 2 seconds each. For example:

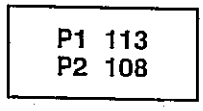


To view other status press the DISPLY key. All temperatures and pressures may be displayed as well as other status information. To scroll through the displays press the up arrow or down arrow keys. Up arrow moves to the next display, down arrow the previous display. To return to the default display press the display key.

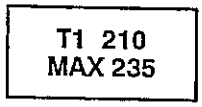
- Separator differential pressure and the maximum limit. If the limit is exceeded, a separator maintenance warning will be displayed.



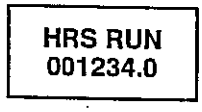
- Sump pressure and line pressure.



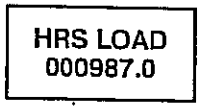
- Unit discharge temperature and the maximum limit. If the temperature exceeds the limit a T1 HI shutdown will occur.



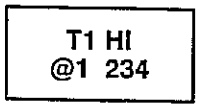
- Total hours that the compressor has been running.



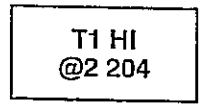
- Total hours that the compressor has been loaded.



- Last fault log. This shows the fault on the first line and the run hours when the fault occcured.



- Next to last fault log. This shows the fault on the first line and the run hours when the fault occcured.



2.3B STATUS DISPLAYS – LS–12; LS–16; LS–20; LS–20S; LS–25 AND EUROPE

By default the line pressure (P2) and discharge temperature (T1) are shown on the bottom line of the display, and machine status on the top line. The following are the various machine status messages that indicate the state of the compressor:

(Display graphics shown below.)

- **STOP** – Compressor is off.

- **STANDBY** – Compressor is off but armed to start. This state may be entered because of a power up, or the unload timer had expired and stopped the machine. NOTE : The machine may start at any time.

- **STARTING** – Machine is trying to start.

- **OFF LOAD** – Machine is running and off loaded.

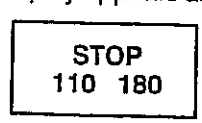
- **ON LOAD** – Machine is running and loaded.

- **FULL LD** – Machine is running and fully loaded. This state is only displayed if the machine has a full load valve.

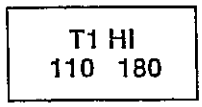
- **RMT STOP** – Compressor is off but armed to start. The machine will start when the remote start contact is closed. NOTE : the machine may start at any time.

- **SEQ STOP** – Compressor is off but armed to start. The machine will start when the sequencing conditions meet the critera to start. NOTE : the machine may start at any time.

This default display appears as follows:

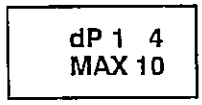


If there are alarms active they will alternately be shown with the default display. The machine status will be displayed for 2 seconds then the alarms for 2 seconds each. For example:

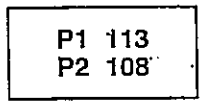


To view other status press the DISPLY key. All temperatures and pressures may be displayed as well as other status information. To scroll through the displays press the up arrow or down arrow keys. Up arrow moves to the next display, down arrow the previous display. To return to the default display press the display key.

- Separator differential pressure and the maximum limit. If the limit is exceeded, a separator maintenance warning will be displayed.

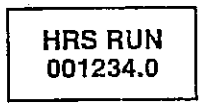


- Sump pressure and line pressure.



- Unit discharge temperature and the maximum limit. If the temperature exceeds the limit a T1 HI shutdown will occur.

- Total hours that the compressor has been running.



- Total hours that the compressor has been loaded.

- Last fault log. This shows the fault on the first line and the run hours when the fault occcured.

- Next to last fault log. This shows the fault on the first line and the run hours when the fault occcured.

2.3C – STATUS DISPLAYS – LS–25S & LS–32

By default the line pressure (P2) and discharge temperature (T1) are shown on the bottom line of the display, and machine status on the top line. The following are the various machine status messages that indicate the state of the compressor:

(Display graphics shown below.)

- **STOP** – Compressor is off.

- **STANDBY** – Compressor is off but armed to start. This state may be entered because of a power up, or the unload timer had expired and stopped the machine. NOTE : The machine may start at any time.

- **STARTING** – Machine is trying to start.

- **OFF LOAD** – Machine is running and off loaded.

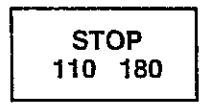
- **ON LOAD** – Machine is running and loaded.

- **FULL LD** – Machine is running and fully loaded. This state is only displayed if the machine has a full load valve.

- **RMT STOP** – Compressor is off but armed to start. The machine will start when the remote start contact is closed. NOTE : the machine may start at any time.

- **SEQ STOP** – Compressor is off but armed to start. The machine will start when the sequencing conditions meet the critera to start. NOTE : the machine may start at any time.

This default display appears as follows:



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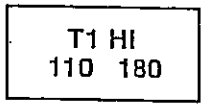
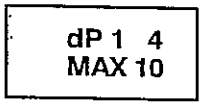
If there are alarms active they will alternately be shown with the default display. The machine status will be displayed for 2 seconds then the alarms for 2 seconds each. For example:

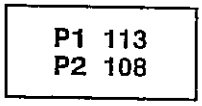


To view other status press the DISPLY key. All temperatures and pressures may be displayed as well as other status information. To scroll through the displays press the up arrow or down arrow keys. Up arrow moves to the next display, down arrow the previous display. To return to the default dispaly press the display key.

- Separator differential pressure and the maximum limit. If the limit is exceeded, a separator maintenance warning will be displayed.

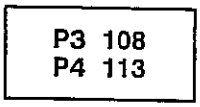


- Sump pressure and line pressure.



- Oil filter differential pressure and the maximum limit. If the limit is exceeded oil maintenance warning will be displayed.

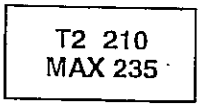
- Pressure before (P4) and after (P3) oil filter.



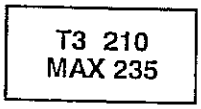
- Oil differential pressure and the minimum limit. If the pressure goes below the limit a P3 LOW shutdown will occur. Oil differential (dP3) is defined as P3−P1/2

- Unit discharge temperature and the maximum limit. If the temperature exceeds the limit a T1 HI shutdown will occur.

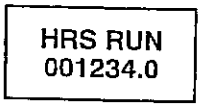
- Dry side discharge temperature and the maximum limit. If the temperature exceeds the limit a T2 HI shutdown will occur.



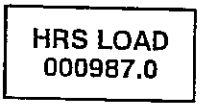
- Oil temperature and the maximum limit. If the temperature exceeds the limit a T3 HI shutdown will occur.



- Total hours that the compressor has been running.



- Total hours that the compressor has been loaded.



- Last fault log. This shows the fault on the first line and the run hours when the fault occcured.

- Next to last fault log. This shows the fault on the first line and the run hours when the fault occcured.

2.3D STATUS DISPLAYS – TS−20 & TS−32

By default the line pressure (P2) and discharge temperature (T1) are shown on the bottom line of the display, and machine status on the top line. The following are the various machine status messages that indicate the state of the compressor: (Display graphics shown below.) .

- **STOP** – Compressor is off.
- **STANDBY** – Compressor is off but armed to start. This state may be entered because of a power up, or the unload timer had expired and stopped the machine. NOTE : The machine may start at any time.
- **STARTING** – Machine is trying to start.
- **OFF LOAD** – Machine is running and off loaded.
- **ON LOAD** – Machine is running and loaded.

- FULL LD – Machine is running and fully loaded. This state is only displayed if the machine has a full load valve.

- RMT STOP – Compressor is off but armed to start. The machine will start when the remote start contact is closed. NOTE : the machine may start at any time.

- SEQ STOP – Compressor is off but armed to start. The machine will start when the sequencing conditions meet the critera to start. NOTE : the machine may start at any time.

This default display appears as follows:

```
STOP
110  180
```

If there are alarms active they will alternately be shown with the default display. The machine status will be displayed for 2 seconds then the alarms for 2 seconds each. For example:

```
T1 HI
110  180
```

To view other status press the DISPLY key. All temperatures and pressures may be displayed as well as other status information. To scroll through the displays press the up arrow or down arrow keys. Up arrow moves to the next display, down arrow the previous display. To return to the default dispaly press the display key.

- Separator differential pressure and the maximum limit. If the limit is exceeded, a separator maintenance warning will be displayed.

```
dP 1  4
MAX 10
```

- Sump pressure and line pressure.

```
P1  113
P2  108
```

- Oil filter differential pressure and the maximum limit. If the limit is exceeded oil maintenance warning will be displayed.

```
dP2  4
MAX 20
```

- Pressure before (P4) and after (P3) oil filter.

```
P3  108
P4  113
```

- Oil differential pressure and the minimum limit. If the pressure goes below the limit a P3 LOW shutdown will occur. Oil differential (dP3) is defined as P3–P½

```
dP3  40
MIN  1
```

- Unit discharge temperature and the maximum limit. If the temperature exceeds the limit a T1 HI shutdown will occur.

```
T1  210
MAX 235
```

- Dry side discharge temperature and the maximum limit. If the temperature exceeds the limit a T2 HI shutdown will occur.

```
T2  210
MAX 235
```

- Oil temperature and the maximum limit. If the temperature exceeds the limit a T3 HI shutdown will occur.

```
T3  210
MAX 235
```

- Interstage temperature and the maximum limit. If the temperature exceeds the limit a T4 HI shutdown will occur.

```
T4  210
MAX 235
```

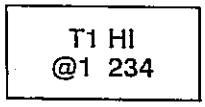
- Total hours that the compressor has been running.

```
HRS RUN
001234.0
```

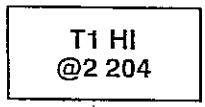
- Total hours that the compressor has been loaded.

```
HRS LOAD
000987.0
```

- Last fault log. This shows the fault on the first line and the run hours when the fault occcured.



- Next to last fault log. This shows the fault on the first line and the run hours when the fault occcured.



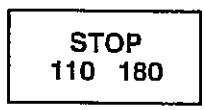
2.3E STATUS DISPLAYS – LS–16T & LS–20T

By default the line pressure (P2) and discharge temperature (T1) are shown on the bottom line of the display, and machine status on the top line. The following are the various machine status messages that indicate the state of the compressor:

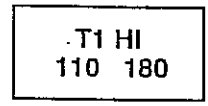
(Display graphics shown below.)

- **STOP** – Compressor is off.
- **STANDBY** – Compressor is off but armed to start. This state may be entered because of a power up, or the unload timer had expired and stopped the machine. NOTE : The machine may start at any time.
- **STARTING** – Machine is trying to start.
- **OFF LOAD** – Machine is running and off loaded.
- **ON LOAD** – Machine is running and loaded.
- **FULL LD** – Machine is running and fully loaded. This state is only displayed if the machine has a full load valve.
- **RMT STOP** – Compressor is off but armed to start. The machine will start when the remote start contact is closed. NOTE : the machine may start at any time.
- **SEQ STOP** – Compressor is off but armed to start. The machine will start when the sequencing conditions meet the critera to start. NOTE : the machine may start at any time.

This default display appears as follows:

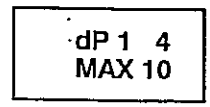


If there are alarms active they will alternately be shown with the default display. The machine status will be displayed for 2 seconds then the alarms for 2 seconds each. For example:

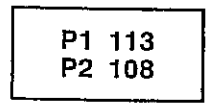


To view other status press the DISPLY key. All temperatures and pressures may be displayed as well as other status information. To scroll through the displays press the up arrow or down arrow keys. Up arrow moves to the next display, down arrow the previous display. To return to the default display press the display key.

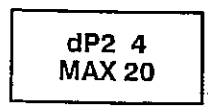
- Separator differential pressure and the maximum limit. If the limit is exceeded, a separator maintenance warning will be displayed.



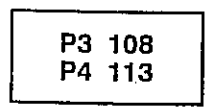
- Sump pressure and line pressure.



- Oil filter differential pressure and the maximum limit. If the limit is exceeded oil maintenance warning will be displayed.

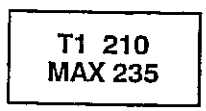


- Pressure before (P4) and after (P3) oil filter.

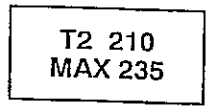


- Oil differential pressure and the minimum limit. If the pressure goes below the limit a P3 LOW shutdown will occur. Oil differential (dP3) is defined as P3–P1/2

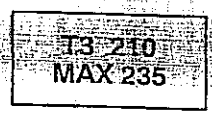
- Unit discharge temperature and the maximum limit. If the temperature exceeds the limit a T1 HI shutdown will occur.



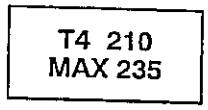
- Dry side discharge temperature and the maximum limit. If the temperature exceeds the limit a T2 HI shutdown will occur.



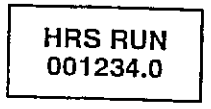
• Oil temperature and the maximum limit. If the temperature exceeds the limit a T3 HI shutdown will occur.



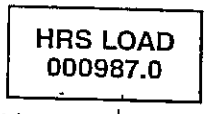
• Interstage temperature and the maximum limit. If the temperature exceeds the limit a T4 HI shutdown will occur.



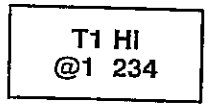
• Total hours that the compressor has been running.



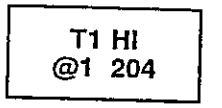
• Total hours that the compressor has been loaded.



• Last fault log. This shows the fault on the first line and the run hours when the fault occcured.



• Next to last fault log. This shows the fault on the first line and the run hours when the fault occcured.



2.3F STATUS DISPLAYS – DS–13

By default the line pressure (P2) and discharge temperature (T1) are shown on the bottom line of the display, and machine status on the top line. The following are the various machine status messages that indicate the state of the compressor:

(Display graphics shown below.)

• **STOP** – Compressor is off.

• **STANDBY** – Compressor is off but armed to start. This state may be entered because of a power up, or the unload timer had expired and stopped the machine. NOTE : The machine may start at any time.

• **STARTING** – Machine is trying to start.

• **OFF LOAD** – Machine is running and off loaded.

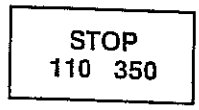
• **ON LOAD** – Machine is running and loaded.

• **FULL LD** – Machine is running and fully loaded. This state is only displayed if the machine has a full load valve.

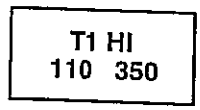
• **RMT STOP** – Compressor is off but armed to start. The machine will start when the remote start contact is closed. NOTE : the machine may start at any time.

• **SEQ STOP** – Compressor is off but armed to start. The machine will start when the sequencing conditions meet the critera to start. NOTE : the machine may start at any time.

This default display appears as follows:

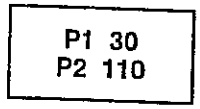


If there are alarms active they will alternately be shown with the default display. The machine status will be displayed for 2 seconds then the alarms for 2 seconds each. For example:



To view other status press the DISPLY key. All temperatures and pressures may be displayed as well as other status information. To scroll through the displays press the up arrow or down arrow keys. Up arrow moves to the next display, down arrow the previous display. To return to the default display press the display key.

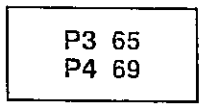
• Interstage discharge pressure and line pressure.



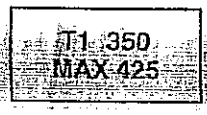
• Oil filter differential pressure and the maximum limit. If the limit is exceeded oil maintenance warning will be displayed.

• Pressure before (P4) and after (P3) oil filter.

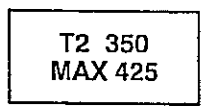
Section 2
SUPERVISOR II DESCRIPTION



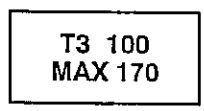
• Interstage discharge temperature. Shuts off the compressor it T1 exceeds T1 MAX and system status will display T1 HI..



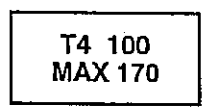
• Final discharge temperature and the maximum limit. If the temperature exceeds the limit a T2 HI shutdown will occur.



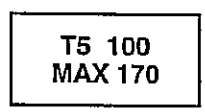
• Oil temperature and the maximum limit. If the temperature exceeds the limit a T3 HI shutdown will occur.



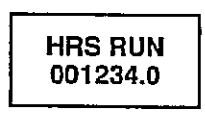
• Interstage temperature after the intercooler and the maximum limit. If the temperature exceeds the limit a T4 HI shutdown will occur.



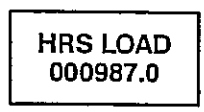
• Package discharge temperature and the maximum limit. If the temperature exceeds the limit a T5 HI shutdown will occur.



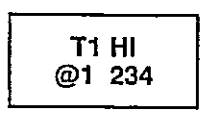
• Total hours that the compressor has been running.



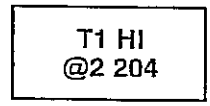
• Total hours that the compressor has been loaded.



• Last fault log. This shows the fault on the first line and the run hours when the fault occcured.



• Next to last fault log. This shows the fault on the first line and the run hours when the fault occcured.



2.4 LAMP INDICATORS – ALL MODELS

Embedded into the front panel schematic of the compressor are several lamps. Pressing the lamp test key will light all the lamps for 3 seconds. Each LED lamp has the following purpose.

P1 – (Sump and line pressure) If lit steady, signifies that P1 is being displayed, if flashing denotes the presence of an alarm.

P2 – (Sump and line pressure) If lit steady, signifies that P2 is being displayed, if flashing denotes the presence of an alarm.

P3 – (Pressure after oil filter) Same as P1 & P2 except for P3. (Pressure after oil filter)

P4 – (Pressure before oil filter)

dP1 – (Seperate differential pressure) If lit steady, signifies that dP1 is being displayed, if flashing denotes replacement of separator is needed.

dP2 – (Oil filter differential pressure)

dP3 – (Oil differential pressure)

T1 – (Dry side discharge temperature) If lit steady, signifies that T1 is being displayed, if flashing denotes the presence of an alarm.

T2 – (Discharge temperature) If lit steady, signifies that T2 is being displayed, if flashing denotes the presence of an alarm.

T3 – (Oil temperature) If lit steady, signifies that T3 is being displayed, if flashing denotes the presence of an alarm.

T4 – (Interstage temperature) If lit steady, signifies that T4 is being displayed, if flashing denotes the presence of an alarm.

T5 – (Package discharge temperature)

MOTOR – If flashing, indicates the motor overload contact has opened.

INLET FILTER – If flashing, indicates that inlet filter maintenance is needed.

OIL FILTER – If flashing, indicates that oil filter maintenance is needed.

POWER ON – Lit if 120VAC power is applied to the Supervisor II.

ON – If lit steady, the compressor is running. If flashing, indicates that the compressor is armed but stopped because of restart timer not expired, remote stop or sequence stop. The compressor may start at any time.

AUTO – If lit steady, the compressor is running and in auto mode. If flashing, indicates that the compressor is armed but stopped because of restart timer not expired, remote stop or sequence stop. The compressor may start at any time.

NOTES

COMPRESSOR OPERATION

3.1 STANDARD PARAMETER SETUP

Pressing the program key enters parameter display and edit mode. To move to the next parameter press the program key. To increment a parameter press the up arrow key or logo key. The logo key will increment by 10. To decrement the value press the down arrow key.

The parameters are displayed in the following order:

- **Unload pressure** – The pressure where the machine is unloaded. For example if this parameter is set to 110 PSI the machine will unload when the line pressure is above 110 PSI.

- **Load differential** – The pressure differential below the unload pressure where the machine is loaded. For example if the unload pressure is set to 110 and the load differential is set to 10, the machine will load when the line pressure goes below 100 PSI.

- **P1 Max** – Maximum sump pressure. An alarm and shut down will occur when the sump pressure rises above this pressure.

- **Wye to delta transition timer** – For full voltage starters this parameter is set to 0.

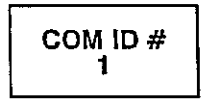
- **Restart time** – Time to wait after powerup before starting machine. This parameter is used to keep several machines from starting at the same time after power up, or to delay start until other equipment is started. If disabled the machine will not automatically start after power up.

- **Unload Stop Timer** – If the machine is running in AUTO mode, this parameter specifies the ammount of time that the machine will run unloaded before shutting off. If the time is set less than 15 minutes (for example 5), there may be times when the machine will run unloaded for more than 5 minutes. This is because there is another timer that keeps the machine from being started more than four times an hour.

- **Language select** – English, German, Spanish, Italian and French may be selected for display language.

- **Units** – English or metric units may be selected.

- **Communications ID #** – This is the network address of a machine. If there is more that one machine connected to the network, each machine must have a unique number



- **Communications baud rate** – This should always be selected to 9600 baud for all sequencing modes. It may be lower for slave or monitoring modes.

3.2 DELUXE PARAMETER SETUP

The following parameters are only available on deluxe model Supervisor II.

- **Sequence method** – This parameter sets the method used for sequencing. The choices are DISABLED, REMOTE, SLAVE, HOURS, COM ID#. See the Sequencing & Protocol Manual (P/N 02250057–696) for details about these modes.

COMPRESSOR OPERATION

• **Drain Interval** – The time between actuation of the drain valve.

DRN INTV
10 MIN

• **Drain time** – The amount of time that the drain valve is actuated.

DRN TIM
1 SEC

• **Last Communication Number** – Used only for sequencing, see Sequencing & Protocol Manual for details.

LAST COM
3

• **Lowest Allowable Pressure** – Used only for sequencing, see Sequencing & Protocol Manual for details.

LOWEST
90 PSI

• **Recovery Time** – Used only for sequencing, see Sequencing & Protocol Manual for details.

RECOVER
10 SEC

•**Rotate Time** – Used only for seuqncing, see Sequencing & Protocol Manual for details.

ROTATE
50

• **Machine Capacity** – Used only for sequencing, see Sequencing & Protocol Manual for details.

CAPACITY
100

• **Sequence Hours** – Used only for sequencing, see Sequencing & Protocol Manual for details.

SEQ HRS
1000

3.3 OPERATING THE COMPRESSOR

Before operating the compressor the operating parameters must be setup. See the previous section on operating parameter setup.

MANUAL OPERATION MODE

In this mode the compressor will run indefinitely, as long as temperatures and pressure remain within the valid operating ranges, and the motor overload or emergency stop contacts are not tripped. Pressing the "I"will turn on the compressor and put it in manual mode. If the compressor is already running, but in automatic mode, pressing "I" will switch operation to manual. Pressing "I" while already running in manual mode will cause the Supervisor to turn off the common fault relay, if engaged, and clear any maintenance indicators.

To stop the compressor, press "O". If the compressor is already off when "O" is pressed, the common fault relay will be turned off, if engaged, and it will try to clear the alarm and maintenance indicators. Regardless of what the compressor is doing, pressing "O" puts the Supervisor in manual stop mode.

AUTOMATIC OPERATION MODE

In this mode the compressor will start if line pressure (P2) is less than the **LOAD** parameter. It will stop if the compressor runs unloaded for the number of minutes indicated by the **UNLD TIM** parameter . To put the compressor in automatic mode press "⟲ ". If P2 is already less than **LOAD** the compressor will start immediately, otherwise the system status will indicate **STANDBY** and the LED marked **AUTO** will flash.

If the compressor is already running, but in continuous mode, pressing "⟲ " will switch operation to automatic. Pressing "⟲" while already running in automatic mode will cause the Supervisor to turn off the common fault relay, if engaged, and clear any maintenance indicators.

In automatic mode the compressor can be stopped manually by pressing **O**. Stopping the compressor using **O** will put the Supervisor in manual stop mode.

Regardless of whether in "automatic" or "manual" mode, control of the load solenoid will be based on the parameters **UNLD** and **LOAD.** This operation is as follows:

P2 > UNLD ––> load solenoid turned off
P2 < LOAD ––> load solenoid turned on

POWER FAILURE RESTART

If the restart timer (RST TIME parameter) is disabled the compressor will not try to start after a power up. If this time is set to a value the machine will go into standby after power up. When the line pressure drops below the load setpoint, the restart timer will start timing. When the timer expires the machine will start.

SEQUENCING MODES

The following is a brief description of sequencing modes, for details see the Supervisor II Sequencing & Protocol Manual (P/N 02250057–696).

• **DISABLED** – Responds to status and

parameter change messages via the RS485 network but will not respond to start, stop, load or unload messages.

- **REMOTE** – Responds to status and parameter change messages but will not respond to start, stop, load or unload messages. The remote inputs and outputs are enabled (start/stop, load/unload, master/local).
- SLAVE – Will respond to all messages, but will not start or load unless commanded to do so by a message. This mode is used to control the machine from a master computer.
- HOURS – Sends status message about once a second, starts, loads and unloads machines based on sequencing hours.
- COM ID # – Sends status message about once a second, starts, loads and unloads machines based on machine Com ID#.

3.4 PURPOSE OF CONTROLS

SWITCH	OPERATION
EMERGENCY STOP SWITCH	Pushing in this switch, found adjacent to the Supervisor, cuts all AC outputs from the latter and de–energizes the starter. A fault message (E STOP) is displayed by the Supervisor until the button is pulled out and the "O" pad is depressed.

3.5 SUPERVISOR OUTPUT RELAYS

RELAY	OPERATION
RUN RELAY (K1)	Contact closure energizes the compressor starter.
*–DELTA (K2)	A timed contact used to provide wye–delta transition time.
UNLOAD/LOAD (K3)	Controls ON LOAD/OFF LOAD operaton of the load control solenoid valve.
COMMON FAULT (K4)	May be used to provide remote indication of any pre–alarm, maintenance or fault shutdown condition.
DRAIN VALVE (K5)	Deluxe only – controls a solenoid valve to provide automatic condensate removal.
FULL LOAD/MODULATE (K6)	Deluxe only – used with sequencing feature.

NOTE: All output relays will handle 8 amps at 120/240 VAC.

NOTES

Section 4

START–UP PROCEDURES

4.1 MOTOR ROTATION CHECK

After the electrical installation has been done, it is necessary to check the direction of motor rotation.

• ES–8 COMPRESSORS

Pull out the **EMERGENCY STOP** button and press once, quickly and in succession, the **(START) I** and **(STOP) O** pads. This action will bump start the motor for a very short time. When looking at the motor from the control panel side, view the coupling by looking through the air inlet duct on the lower side of the adapter fan housing. The coupling should be turning clockwise. If the reversed rotation is noted, disconnect the power to the starter and exchange any two of the three power input leads, then recheck rotation. A "Direction of Rotation" decal is located on the motor and cooler shroud to show proper motor/compressor rotation.

• ALL OTHER COMPRESSORS

Pull out the **EMERGENCY STOP** button and press once, quickly and in succession, the **(START) I** and **(STOP) O** pads. This action will bump start the motor for a very short time. When looking at the motor rear end, the driveline should be rotating in the direction indicated by the "Direction of Rotation" decal located on the top of the compressor/motor adapter piece. If the reversed rotation is noted, disconnect the power to the starter and exchange any two of the three power input leads, then re–check rotation. A "Direction of Rotation" decal is located on the top of the compressor/motor adaptor piece.

4.2 INITIAL START–UP PROCEDURE

The following procedure should be used to make the initial start–up of the compressor.

1. Read the preceding pages of this manual thoroughly.
2. Jog motor to check for correct rotation of fan.
3. Be sure that all preparations and checks described in the Installation Section have been made.
4. Open the shut–off valve to the service line.
5. Check for possible leaks in piping:
7. Slowly close the shut–off valve to assure proper nameplate pressure unload setting is correct. The compressor will unload at nameplate pressure. If adjustments are necessary, see Control System Adjustments.
7. Observe the operating temperature. If the operating temperature exceeds 200°F (93°C), the cooling system and installation environment should be checked.
8. Open shut–off valve to the service line.
9. Reinspect the compressor for temperature and leaks the following day.

4.3 SUBSEQUENT START–UP PROCEDURE

On subsequent start–ups, check that the proper level is visible in the fluid level sight glass and simply press "**I**" for manual or "**⏻**" for automatic operation. When the compressor is running, observe the various parameter displays.

4.4 SHUTDOWN PROCEDURE

To shut the compressor down, push "**O**" pad.

NOTES

Section 5

MAINTENANCE AND TROUBLESHOOTING

5.1 MAINTENANCE INTRODUCTION

As you proceed in reading this section, it will be easy to see that Maintenance Program for the air compressor is quite minimal. The Supervisor monitors the status of the air filter, fluid filter, and separator elements. When maintenance to these devices is required, the Supervisor will display the appropriate maintenance message and flash the location LED on the graphics map as a visual reminder.

⚠ WARNING

DO NOT remove caps, plugs, and/or other components when compressor is running or pressurized.

Stop compressor and relieve all internal pressure before doing so.

5.2 DAILY OPERATION

Following a routine start, observe the various Supervisor displays to check that normal readings are being made – previous records are very helpful in determining the normalcy of the measurements. These observations should be made during all expected modes of operation (i.e. full load, no–load, different line pressures, cooling water temperatures, etc.).

During the initial start–up or servicing of the package, fluid may have to be added to the sump vessel to restore an adequate level. Frequent fluid additions to maintain said level would be indicative of excessive fluid consumption, and should be investigated – see the Troubleshooting Section of this manual for probable cause and remedy.

5.3 TROUBLESHOOTING INTRODUCTION

The following information has been compiled from operational experience with your package. It identifies symptoms and diagnosis of SEVERAL probable difficulties, but NOT ALL of those possible.

The systematic collection of operational data cannot be over–emphasized, as it may give evidence of the presence (or not) of a fault before it turns into a serious breakdown – for example, the vibrations signature increase of a damaged bearing, or the efficiency decrease of a dirty heat exchanger.

A detailed visual inspection is worth performing for almost all problems and may avoid unnecessary additional damage to the compressor. Always remember to:

1. Check for loose wiring.
2. Check for damaged piping.
3. Check for parts damaged by heat or an electrical short circuit, usually apparent by discoloration or a burnt odor.

Should your problem persist after making the recommended check, consult your nearest Sullair representative or the Sullair Corporation.

5.4 TROUBLESHOOTING GUIDE – SEE 5.4A THROUGH 5.4D FOR SPECIFIC MODELS

5.4A – ES–8 TROUBLESHOOTING GUIDE

SYMPTOM	PROBABLE CAUSE	REMEDY
T1 HI Message	Discharge Temperature Exceeded 225° F (107 ° C) for Pre–Alarm	
	Discharge Temperature Exceeded 235° F (113°C) for Shutdown	
	Ambient Temperature Exceeded 105° F (41 ° C)	Improve local ventilation (i.e., remove intake or precess and/or cooling air.
	Fluid Level in Sump is Too Low	Check/correct fluid level.
	Thermal Valve Malfunctioned	Check/replace thermal valve.
	Cooler Fins are Dirty	Clean cooler fins.
	Water Flow is Low (water–cooled packages only)	Check cooling water supply (i.e., closed valves).
	Water Temperature is High (water–cooled packages only)	Increase water flow, lower water temperature.
	Cooler is Plugged (water–cooled packages only)	Clean tubes and/or shell – if tube plugging persists, provide cleaner water.
	Temperature RTD Malfunction	Check connections from RTD. If adequate, replace RTD.

Section 5
MAINTENANCE AND TROUBLESHOOTING

5.4A – ES–8 TROUBLESHOOTING (Continued)

SYMPTOM	PROBABLE CAUSE	REMEDY
P1 HI Message	P1 MAX – 3psi (.2 bar) Exceeded for Pre–Alarm	
	P1 MAX Exceeded for Shutdown	
	Discharge Pressure Exceeded Shutdown Level Because:	
	Unloading Device (i.e, Blowdown Valve, Sullicon Actuator, Optional Spiral Valve) Failed to Operate	Check operation of unloading device.
	Pressure Regulator Maladjusted	Check operation of pressure regulator.
	Solenoid Valve Failed to Operate	Check operation of solenoid valve.
	Control Air Signal Leaks	Check tubework feeding control signal for leaks.
	Control Air Signal Filter Clogged	See compressor Operator's Manual for filter assembly service.
SEP MNTN Message	Plugged Separator	Replace separator elements.
	dP1 > 10 PSI	Check P1 & P2 pressure transducers.
COMPRESSOR DOES NOT BUILD FULL DISCHARGE PRESSURE		
	Air Demand Exceeds Supply	Check air service lines for open valves or leaks.
	Inlet Air Filter Clogged	Check for maintenance message on Supervisor II display. Inspect and/or change element.
	Inlet Valve Not Fully Open	Check actuation and butterfly disc position.
	Pressure Sensor and/or Connections at Fault	Check connections from transducer. If adequate, replace transducer.
LINE PRESSURE RISES ABOVE UNLOAD SETTING	Pressure Sensor P2 at Fault	Check connections from trans–ducer. If adequate, replace transducer.
	Unloading Device (i.e., Blowdown Valve, Sullicon Actuator, Optional Spiral Valve) Failed to Operate	Check operation of unloading device.
LINE PRESSURE RISES ABOVE UNLOAD SETTING	Solenoid Valve Failed to Operate	Check operation of solenoid valve.
	Control Air Signal Leaks	Check tubework feeding control signal for leaks.
	Control Air Signal Filter Clogged	See compressor Operator's Manual for filter assembly service.
EXCESSIVE FLUID CONSUMPTION		
	Clogged Return Line Strainer or Orifice	Clean strainer – screen and o–ring replacement kit available. Clean orifice.
	Damaged or Improperly Gasketed Separator Elements	Inspect separator elements and gaskets. Replace if damaged.
	Fluid System Leaks	Check tube/pipework for leaks.
	Fluid Level Too High	Drain excess fluid.
	Excessive Fluid Foaming	Drain and change fluid.

5.4B – TROUBLESHOOTING GUIDE – LS–12; LS–16; LS–20; LS–20S; LS–25 and EUROPE

SYMPTOM	PROBABLE CAUSE	REMEDY
T1 HI Message	Discharge Temperature Exceeded 225° F (107 ° C) for Pre–Alarm	
	Discharge Temperature Exceeded 235° F (113°C) for Shutdown	
	Ambient Temperature Exceeded 105° F (41 °C)	Improve local ventilation (i.e., remove intake or precess and/or cooling air.
	Fluid Level in Sump is Too Low	Check/correct fluid level.
	Thermal Valve Malfunctioned	Check/replace thermal valve.
	Cooler Fins are Dirty	Clean cooler fins.
	Water Flow is Low (water–cooled packages only)	Check cooling water supply (i.e., closed valves).
	Water Temperature is High (water–cooled packages only)	Increase water flow, lower water temperature.
	Cooler is Plugged (water–cooled packages only)	Clean tubes and/or shell – if tube plugging persists, provide cleaner water.
	Temperature RTD Malfunction	Check connections from RTD. If adequate, replace RTD.
P1 HI Message	P1 MAX – 3psi (.2 bar) Exceeded for Pre–Alarm	
	P1 MAX Exceeded for Shutdown	
	Discharge Pressure Exceeded Shutdown Level Because:	
	Unloading Device (i.e., Blowdown Valve, Sullicon Actuator, Optional Spiral Valve) Failed to Operate	Check operation of unloading device.
	Pressure Regulator Maladjusted	Check operation of pressure regulator.
	Solenoid Valve Failed to Operate	Check operation of solenoid valve.
	Control Air Signal Leaks	Check tubework feeding control signal for leaks.
	Control Air Signal Filter Clogged	Service filter assembly.
SEP MNTN Message	Plugged separator	Replace separator elements.
	dP1 > 10 PSI	Check P1 & P2 pressure transducers.
COMPRESSOR DOES NOT BUILD FULL DISCHARGE PRESSURE	Air Demand Exceeds Supply	Check air service lines for open valves or leaks.
	Inlet Air Filter Clogged	Check for maintenance message on Supervisor display. Inspect and/or change element.
	Inlet Valve Not Fully Open	Check actuation and butterfly disc position.
	Pressure Sensor and/or Connections at Fault	Check connections from trans–ducer. If adequate, replace trans–ducer.
OIL MNTN Message	Plugged Oil Filter	Replace oil filter.
	Oil Differential dP2 > 20	Check oil differential switch, switch open or if machine has P3 & P4 pressure transducer, check transducers.

5.4B – TROUBLESHOOTING GUIDE – LS–12; LS–16; LS–20; LS–20S; LS–25 and EUROPE (Continued)

SYMPTOM	PROBABLE CAUSE	REMEDY
LINE PRESSURE RISES ABOVE UNLOAD SETTING	Pressure Sensor P2 at Fault	Check connections from transducer. If adequate, replace transducer.
	Unloading Device (i.e., Blowdown Valve, Sullicon Actuator, Optional Spiral Valve) Failed to Operate	Check operation of unloading device
	Solenoid Valve Failed to Operate	Check operation of solenoid valve.
	Control Air Signal Leaks	Check tubework feeding control signal for leaks.
	Control Air Signal Filter Clogged	See compressor Operator's Manual for filter assembly service.
EXCESSIVE FLUID CONSUMPTION	Clogged Return Line Strainer or Orifice	Clean strainer – screen an o – ring replacement kit available. Clean orifice.
	Damaged or Improperly Gasketed Separator Elements	Inspect separator elements and gaskets. Replace if damaged.
	Fluid System Leaks	Check tube/pipework for leaks.
	Fluid Level Too High	Drain excess fluid.
	Excessive Fluid Foaming	Drain and change fluid.

5.4C TROUBLESHOOTING GUIDE – LS–16T & LS–20T

SYMPTOM	PROBABLE CAUSE	REMEDY
T1 HI, T2 HI Message	Discharge Temperature Exceeded 255° F (124° C) for Pre–Alarm	
	Discharge Temperatur Exceeded 265° F (129° C) for Shutdown	
	Ambient temperature exceeded 105°F (41°C)	Improve local ventilation (i.e., remote intake of process and/or cooling air.
	Fluid Level in Sump is Too Low	Check/correct fluid level.
	Thermal Valve Malfunctioned	Check/replace thermal valve.
	Cooler Fins are Dirty	Clean cooler fins.
	Water Flow is Low (water–cooled packages only)	Check cooling water supply (i.e., closed valves).
	Water Temperature is High (water–cooled packages only)	Increase water flow, lower water temperature.
	Cooler is Plugged (water–cooled packages only)	Clean tubes and/or shell – if tube plugging persists, provide cleaner water.
	Temperature RTD Malfunction	Check connections from RTD. If adequate, replace RTD.
P1 HI Message	P1 MAX – 3 psi (.2 Bar) Exceeded for Pre–Alarm	
	P1 MAX Exceeded for Shutdown	
	Discharge Pressure Exceeded Shutdown Level Because:	
	Unloading Device (i.e., Blowdown Valve, Sullicon Actuator, Optional Spiral Valve) Failed to Operate	Check operation of unloading device
	Pressure Regulator Maladjusted	Check operation of pressure regulator.
	Solenoid Valve Failed to Operate	Check operation of solenoid valve

5.4C TROUBLESHOOTING GUIDE – LS–16T & LS–20T (Continued)

SYMPTOM	PROBABLE CAUSE	REMEDY
P1 HI Message (Continued)	Control Air Signal Leaks	Check tube work feeding control signal for leaks
	Control Air Signal Filter Clogged	Service filter assembly
SEP MNTN Message	Plugged separator	Replace separator elements.
	dP1 > 10 PSI	Check P1 & P2 pressure transducers.
COMPRESSOR DOES NOT BUILD FULL DISCHARGE PRESSURE	Air Demand Exceeds Supply	Check air service lines for open valves or leaks.
	Inlet Air Filter Clogged	Check for maintenance message on Supervisor display. Inspect and/or change element.
	Inlet Valve Not Fully Open	Check actuation and butterfly disc position.
	Pressure Sensor and/or Connections at Fault	Check connections from transducer. If adequate, replace transducer.
	Blowdown Valve Leaking	Repair or replace.
AIR MNTN Message	Inlet Differential	Replace inlet filter, check inlet switch.
LO COOL Message (Water–cooled packages only)	Water Pressure Feed Below 10 psig (0.7 bar)	Check cooling water supply (i.e., closed valves).
(Air–Cooled or Water–Cooled w/canopy)	Fan Motor Overload Tripped	Reset after heater elements cool.

5.4D TROUBLESHOOTING – DS–13

SYMPTOM/MESSAGE	PROBABLE CAUSE	REMEDY
COMPRESSOR WILL NOT START; POWER LED OFF	Main Disconnect Switch Open	Close switch.
	Line Fuse Blown	Replace fuse.
	Control Transformer Fuse Blown	Replace fuse.
MOTOR OL	Motor Starter Overloads Tripped	Reset after heater elements cool down. Should trouble persist, check whether motor starter contacts are functioning properly.
	Low Incoming Line Voltage	Check voltage. Should voltage check low, consult power company.
T–1, T–2 FAIL	Temperature Transducer Failure	Check connections from transducer. If adequate, replace transducer.
P–1, P–2 FAIL	Pressure Transducer Failure	Check connections from transducer. If adequate, replace transducer.
E–STOP	Emergency Switch Open (depressed)	Close switch (pull).

5.4D TROUBLESHOOTING – DS–13 (Continued)

SYMPTOM/MESSAGE	PROBABLE CAUSE	REMEDY
LOW COOL	Water Pressure Supply Below 5 psig (0.3 bar)	Check cooling water supply (i.e., closed valves).
	Cooling Fan Motor Starter Overloads Tripped.	Reset after heater elements cool down. Should trouble persist, check whether motor starter con tacts are functioning properly.
COMPRESSOR SHUTS DOWN WITH AIR DEMAND: MOTOR OL	Motor Starter Overloads Tripped	Reset after heater elements cool down. Should trouble persist, check whether motor starter contacts are functioning properly.(I)
	Low Incoming Line Voltage	Check voltage. Should voltage check low, consult power company.
P3 LOW	Oil Pressure Falls Below 40 psig (2.8 bar) While Package is Running Because:	
	Oil Pump Malfunctioned	Consult Sullair Service Dept.
	Oil Filter Clogged	Replace filter element.
	Oil Temperature Too Low	Check state of globe valve feeding oil cooler. In cold ambient envi–roments below 40°F (4°C) sump heating may be required.
	Sump Oil Level Too Low	Replenish oil level.
	Sump Strainer/Check Valve Clogged	Refer to compressors Operators Manual for sump maintenance.
LO P1	P3 and/or dP Transducer at Fault	Check connection from transducer. If adequate, replace transducer.
T1 HI	Exceeded Pre–Alarm Temperature of 415° F (213 °C)	
	Exceeded Shutdown Temperature of 425° F (218° C)	
	LP Inlet Air Temperature Above 105°F (41°C)	Maintain inlet air temperature below 105°F (41°C).
	High Interstage Pressure	Insufficient water flow to inter–cooler. High water temperature. Defective HP stage.
	Cooling fan motor starter overloads tripped	Reset after heater elements cool down. Should trouble persist, check whether motor starter contacts are functioning properly.
	Temperature Transducer Failure	Check connections from transducer If adequate, replace transducer.
T2 HI	Exceeded Pre–Alarm Temperature of 415° F (213° C)	
	Exceeded Shutdown Temperature of 425° F (218° C)	
	Low Water Flow to Intercooler	Check state of globe valve and/or adjustment of optional water regulating valve.

(I) Also check that the compressor–motor driveline rotates freely. In case of rotating resistance or rubbing, contact Sullair Service Department.

5.4D TROUBLESHOOTING – DS–13 (Continued)

SYMPTOM/MESSAGE	PROBABLE CAUSE	REMEDY
T2 HI (continued)	Intercooler Tube Bundle Fouled	Cleanse tube hundle. If fouling persists, then provide cleaner cooler water.
	Discharge Check Valve Leaking	Refer to compressor's Operators Manual for check valve maintenance.
	Inlet Throttling Valve Not Fully Open	See inlet valve adjustment.
	Inlet Air Filter Clogged	Refer to compressor's Operators Manual for filter maintenance.
	Line Pressure Is Too High	Reset Supervisor unload pressure.
	Temperature Transducer Failure	Check connection from transducer. If adequate, replace transducer.
P1 HI	Exceeded P1 MAX for Pre–Alarm	
	Exceeded P1 MAX for Shutdown	
	Exceeded P2 MAX for Shutdown	
	Pressure Transducer Failure	Check connection from transducer. If adequate replace transducer.
P2 HI	Exceeded P2 MAX for Pre–Alarm	
	Exceeded P2 MAX for Shutdown	
	Blowdown Valve Failed to Actuate	Refer to compressor's Operators's Manual for blowdown valve maintenance.
	Solenoid Valve Controlling Blowdown Valve Failed to Operate	Refer to compressor's Operators's Manual for solenoid valve maintenance.
	Control Air Filter Clogged	Refer to compressor's Operators's Manual for control filter maintenance.
COMPRESSOR DOES NOT BUILD FULL DISCHARGE PRESSURE	Air Demand Exceeds Supply	Check air service lines for open valves or leaks.
	Inlet Air Filter Clogged	Check for maintenance message on Supervisor II display. Change element.
	Inlet Air Valve Not Fully Open	Check actuation and butterfly disc position.
	Transducer P2 Malfunction	Check connections from transducer. If adequate, replace transducer.
	Blowdown Valve Leaking	for blowdown valve maintenance.
	Air End(s) Malfunctioning	Consult Sullair Service Department.
LINE PRESSURE RISES ABOVE UNLOAD SETTING	Blowdown Valve Failed to Activate	Refer to compressor's Operators's Manual for blowdown valve maintenance.
	Solenoid Valve Controlling Blowdown Valve Failed to Operate	Refer to compressor's Operators's Manual for solenoid valve maintenance.
	Transducer P2 Malfunction	Check connections from transducer. If adequate, replace transducer.
	Control Air Filter Clogged	Refer to compressor's Operators's Manual for control filter maintenance.

Section 5
MAINTENANCE AND TROUBLESHOOTING

NOTE ON TRANSDUCERS:

Whenever a sensor is suspected of fault, the recommended cause of action is to measure the signal (pressure, temperature, etc.) with an alternate calibrated instrument and compare readings. If readings conflict, the electrical and/or tubing connections should be inspected, and if no faults are evident, then replace the sensor and re–evaluate against the calibrated instrument.

5.5 CALIBRATION

The Supervisor II has software calibration of the pressure and temperature probes. This calibration affects the offset but not the slope of the pressure and temperature calculations. Because of this, the most accurate method is to heat or pressurize the transducer to its operating value. If this is too difficult, room temperature/open atmosphere calibration is adequate. Calibration may only be done while machine is stopped and unarmed.

To enter calibration mode, you must press the following keys in sequence while in the default status display mode: " ", "▲", DISPLY, "▼ ☼" , PROG. Once in calibration mode, you will see a screen like the following:In the above example, "0"

CAL	P1
0	97

refers to the amount of adjustment (in psi or °F, "97" refers to the current value of P1).To make adjustments, Press the "▲" (UP ARROW) key to increase the value, press the "▼ ☼" (DOWN ARROW / LAMP TEST) key to decrease the value. The number on the left will increase or decrease always showing the total amount of adjustment. Maximum adjustment is ± 7. The **DISPLY** key exits, wiping out changes to the current item, while saving changes to any previous items. The **PROG** key saves the current item and advances to the next. All temperatures and pressures may be calibrated individually.

6.1 PROCEDURE FOR ORDERING PARTS

Parts should be ordered from the nearest Sullair Representative or the Representative from whom the compressor was purchased. If for any reason parts cannot be obtained in this manner, contact the factory directly at the address, fax or phone numbers below.

When ordering parts always indicate the **Serial Number** of the compressor. This can be obtained from the Bill of Lading for the compressor or from the Serial Number Plate located on the compressor

SULLAIR CORPORATION
Subsidiary of Sundstrand Corporation
3700 East Michigan Boulevard
Michigan City, Indiana 46360 U.S.A.
Telephone: 1–800–SULLAIR (U.S.A. Only) or
1–219–879–5451
FAX: (219) 874–1273
FAX: (219) 874–1835 (Parts)
FAX: (219) 874–1805 (Service)

SULLAIR ASIA, LTD.
ROOM 2304A
Shartex Plaza Ctr.
No. 88 Zun Yi Nan Rd.
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Chemin de Genas BP 639
69800 Saint Priest, France
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