Supervisor Control

Installation and Programming of Version 3 Cards

INDEX

NOTE: throughout this instruction the following symbols are used to represent the four keys on the keypad,

^	increment value key
v	decrement value key
#	cancel (box) key
>>	select, accept key

1. INTRODUCTION

The Supervisor control is capable of Refrigerant Leak and gas detection, Humidity alarm and control, Anti-Sweat heater control and Power monitoring.

Gas monitoring can be via 16 sensors for 4 different gases. Alarms and control relays can be activated at programmable concentrations.

Two channels of humidity monitoring can activate control and alarm relays at programmable levels of relative humidity.

Humidity control relays can use Phasefale's Powermiser algorithm to intelligently reduce the power going to anti-sweat heaters when humidity is low.

Four channels of power monitoring are available with instant and 15 minute average kW readings and kWhr meter.

A control relay can operate after a delay if power consumption increases above a programmed threshold.

2. INSTALLATION

The display-keyboard module is the same as the rack control, alarm, defrost control etc. except for the software fitted, and is wired the same way. (Refer to Presscon Network Wiring instructions for details).

Mounting is accomplished by removing the screws at the top and bottom of the box and removing the lid. The two holes through the circuit board and back of the box can be used to mount the assembly. Do not put excessive force on the circuit board. The 25mm hole can be used to pass wiring through the box.

3. OPERATION

Normal

The display alternates the following screens, note that screens will not be displayed if their function is turned off in programming;

Supervisor
Control No. 56

The description on the top line can be changed in programming. The bottom line shows the card address of this controller.

1: PLANT ROOM
Power: 31.7 kW

This shows the current power consumption.

1: PLANT ROOM
Av(15): 25.7 kW

This shows the power consumption average over 15 minutes.

1: PLANT ROOM
00149475 kW hour

This shows the kW hour meter reading.

1: PLANT ROOM
excess relay off

This shows the excess power relay is off.

1: REFRIGERANT
12 ppm MEMORY

This shows the concentration sensed by gas sensor 1 and its alarm state, memory in this case. Press >> to see the control and alarm setpoints.

1: HUMIDITY
32% rh Save 17%

This shows the current humidity and the calculated power savings from the antisweat heater control algorithm..

2: AMBIENT
58% rh OK

This shows the current humidity and the alarm status of a humidity alarm channel.

Viewing Channels

Rather than wait for a particular screen to be displayed, you can move to the desired one by pressing the ^ or v keys. Press >> while any channel is displayed and this screen will remain displayed for four minutes or until another key is pressed.

Network Status

Net Status : 2
Last Address : 21

This is a count of the number of communication failures by this controller since this display last appeared. The occasional failure and retry is to be expected but more than a few per minute may indicate a network problem. The count is cleared to zero after this display appears. The last address is the card address of the most recent card to have a communication failure.

4. PROGRAMMING

The controller is programmed via its 4 keys and screen. The screen will describe the setting to be adjusted and the current value. The programming method is the same as for other modules, except the menu items vary..

To begin programming, press and hold both the CANCEL(#) and NEXT(>>) keys for around 10 seconds until the following is displayed;

PROGRAMMING

If an access number has been set it must first be entered;

PROGRAMMING : 10

ACCESS NUMBER

and then the main group selected;

SYSTEM OPTIONS
- - - - - - - - - - - - -

POWER MONITOR
- - - - - - - - - - - - -

GAS MONITOR
- - - - - - - - - - - - -

HUMIDITY MONITOR
- - - - - - - - - - - - -

CONFIGURATION
- - - - - - - - - - - - -

Select the group you wish to program with ^ and v, then select with >> (start with system options for a new unit).

Note that pressing CANCEL at any time while in programming will return you to normal mode and leave the displayed setting unaltered.

The groups and menus are described in the recommended programming order for setting up a new controller. If you only wish to make an alteration you may skip to a setting and make the desired change. All settings are adjusted with the ^ and v keys and then stored with the select key >>. Refer to the Configuration Sheet for more details.

4.1 SYSTEM OPTIONS

These are the fundamental operating conditions for the Defrost controller.

INITIAL : OFF
SYSTEM SETUP

Turn this on the first time you program a unit. Default values will be loaded based on your settings for previous values, speeding up the programming. If values have previously been programmed these may be upset if this option is on.

CONTROL DESCRIPT
Supervisor

Each control can be given a description which will be displayed on the screen during normal operation. See the description list for these descriptions (Refer section 6.0)

NUMBER OF 1
POWER CHANNELS

Select the number of channels of power monitoring required. <0 to 4>.

NUMBER OF 2
GAS CHANNELS

Select the number of channels of gas monitoring required. <0 to 16>.

GAS VENTILATION
CONTROL OFF

Set the gas venting output on or off. This output controls an exhaust fan and stops it periodically to allow gas sensing to occur.

GAS VENTILATION
ON TIME 20 min

Set the on time of the gas ventilation output. <1 to 99 min>

GAS VENTILATION
OF TIME 5 min

Set the off time of the gas ventilation output. <1 to 99 min>

NUMBER OF 1
HUMIDITY CHANNEL

Select the number of channels of humidity control required. <0 to 2>.

MEMORY CLEAR
TIME : 24 Hours

Set the alarm memory clear time <none, 1 to 99 hours>.

SLOW SCROLLING
DISPLAY

Set the scrolling rate of the display quick or slow.

CHANGE DESCR: OFF
<USER DESC. 1>

Change to ON to alter the first user programmable description. This can be used as the description for defrost channels along with the fixed descriptions.

ENTER DESCRIPT
<USER DESC. 1>

use ^ & v to alter each of 12 characters in turn, move across using >>

CHANGE DESCR: OFF
<USER DESC. 2>

Set the second description the same way;

ENTER DESCRIPT
<USER DESC. 2>

4.2 POWER MONITOR

This group of menus sets the operating parameters of the power monitoring channels.

SET CHANNEL
NUMBER 1

Select the channel to be programmed or *exit* to move to the next menu group.

DESCRIPTION 2
PLANT ROOM

Select a description for this channel from the fixed list and the two user programmable descriptions (System Options).

1: C.T. SCALE
200 / 5 Amps

Set the scaling factor of the C.T. <5 to 2000 / 5>

1: EXCESS POWER
RELAY 500 kW

Set the power level at which the excess power relay operates <off, 5 to 1200 kW>

1: EXCESS POWER
MIN TIME 60 sec

Set the minimum time the excess power relay will operate for once the trip level is reached, this can stop short cycling of the relay. <5 to 995 sec>

4.3 GAS MONITOR

This group of menus sets the operating parameters of the gas monitoring channels. Note Gas sensors require a special power board to operate (contact Phasefale for details)

SET GAS 1
MONITOR CHANNEL

Select the channel to be programmed or *exit* to move to the next menu group.

1: DESCRIPTION
REFRIGERANT

Select a description for this channel from the fixed list and the two user programmable descriptions (System Options).

1: SENSOR TYPE 2

Select one of the up to four sensor types programmed. The types are defined in the security menu under configuration.

1: ALARM POINT
100 ppm

Set the alarm point for this sensor <off, 10 to 2500 ppm>

1: ALARM DELAY
10 min

Set the alarm delay for this sensor <0 to 60 min>

1: CONTROL POINT
40 ppm

Set the control point for this sensor <off, 10 to 1200 ppm>

1: CALIBRATE: OFF
TO ZERO: 13 ppm

Turn this on to set the current gas reading to be the zero concentration point. This must be done when there is no gas being sensed. The sensor will not calibrate if it is not reading near zero gas concentration. A new sensor can take seven days operation to burn

in. Re-calibrate the sensor when this burn in period is complete. This screen only appears if a sensor is correctly addressed.

4.4 HUMIDITY MONITOR

Set the operating conditions of the humidity monitor channels.

SET HUMIDITY
CHANNEL 1

Select the channel to be programmed or *exit* to move to the next menu group.

1: DESCRIPTION
HUMIDITY

Select a description for this channel from the fixed list and the two user programmable descriptions (Refer System Options 4.1).

1: CONTROL TYPE
HUMIDITY ALARM

Set the control strategy to either humidity control/alarm or anti-sweat heater control.

1: CONTROL POINT
50%

Set the humidity control setpoint. <off. 1 to 99%>

1: DIFFERENTIAL
5%

Set the humidity control differential <1 to 99%>.

1: HIGH ALARM
80%

Set the humidity high alarm setpoint. <off. 1 to 99%>

1: LOW ALARM
20%

Set the humidity low alarm setpoint. <off. 1 to 99%>

1: ALARM DELAY
10 min

Set the humidity alarm delay <0 to 60 min>

4.5 CONFIGURATION

Select the configuration option and the following menu asks you to confirm you wish to enter;

ACCESS TO : OFF
CONFIGURATION

change to ON, and press >> to gain access to the configuration options;

SECURITY
- - - - - - - - - - - - - - -

NETWORK CARDS
- - - - - - - - - - - - - - -

SENSORS & RELAYS
- - - - - - - - - - - - - - -

exit
- - - - - - - - - - - - - - -

The exit option returns to normal programming.

4.5.1 SECURITY MENU

PRESSCON 3.10
SUPERVISOR

This is the software version number fitted to this control. This item is for reference only and cannot be changed.

CHANGE : 10
ACCESS NUMBER

The access number is a number which must be entered each time programming is entered. Select OFF if this is not required.

ALARM : OFF
LIGHT OUTPUT

This turns on a flashing alarm light output which is common for all alarm functions on the control.

ALARM : OFF
DIALLER OUTPUT

This turns on an output suitable for alarm diallers and security systems, which is common for all alarm functions on the control.

ALARM : OFF
SIREN OUTPUT

This turns on a output suitable for buzzers and sirens which is common for all alarm functions on the control.

SET GAS 1
TYPE DEFINITION

Select the gas type number to define.

SENSOR TYPE 1
RANGE: 0-2500ppm

Select the range for monitoring, this will be defined by the sensor type.

SENSOR 1 : 10
CODE 1

Enter the five codes supplied with the sensor to define its characteristics. See the end of this instruction for a list of common codes.

IGNORE : OFF
BINDING WARNINGS

If set to ON, allows you to program cards not yet connected (see Sensors & Relays Menu).

RESET : OFF
ADDRESS TABLE

Used to re-start sensor and relay programming from scratch.

4.5.2 NETWORK CARDS MENU

This menu is used to "find" network cards and then assign a card number from 1 to 99 to each network card. Each card must have a unique card number.

CARD No. : 66
OF THIS DISPLAY

This display prompts for the card number of this controller.

CARD COUNT : 7
CHECK CARDS : OFF

A count of the cards found (including this one) is displayed. If ON is selected each card is identified and its card number can be altered.

CARD No. of
Alarm : 51

This display shows a card numbered 51 of type ALARM has been identified.

As an alarm card has a display its display will show;

This controller
selected to bind

to help identify it. Cards that do not have a display will stop flashing their selected indicator and turn it steady on.

CARDS FOUND : 7
EXPECTED : 7

After all the cards have been found a summary screen shows the number which were found and the number expected from the card count carried out at the start of the Network Cards menu. If a card did not show up here it may not be communicating correctly and should be investigated; start by investigating the data bus wiring.

4.5.3 SENSORS & RELAYS

This menu allows you to assign inputs to sensor cards and outputs to relay cards etc. Ensure all other programming has been completed BEFORE accessing this menu.

The "sensors and relays" menu will look at the configuration you have set up - that is how many channels etc. you have chosen and then ask you to identify the source of each input and the location of each output in the system. This menu will vary depending on the system specified.

A maximum of 11 separate cards (total of relay, sensor, clock/modem etc. cards) can be specified under this menu.

Use the table in the Relay card instructions to determine how you wish to program and wire the outputs.

The network addresses are asked for in the following manner;

POWER: 21:4
TRANSDUCER 1

This is the location of the first power transducer, as shown it is set to input 4 on sensor card 21.

WARNING THIS IS
ALREADY USED

Each channel must use a unique sensor, this message indicates the sensor has already been used. If a card is specified, but cannot be found, the display shows;

WARNING CARD
NOT FOUND

In this case, you will be re-prompted for the location until found. If "IGNORE BINDING WARNINGS" in the SECURITY menu is set to ON, you can proceed through the SENSORS & RELAYS menu but will get a "binding error" at the end. This means that not all points set can be found by the card or more than 11 cards have been addressed..

GAS : 11:2/O
CONTROL RELAY 1

The control outputs are set as above. In this case the first gas control output is set to relay 2 on card 11 and will be normally open.

After all required inputs and outputs have been prompted and set, the display responds;

Please wait

while the connections are made to the selected cards, then returns to normal operation. If any card cannot be set, the message;

Binding Error

warns you to retry. If the "Sensors and relays" menu is not completed then communications will not occur properly, this message warns of this;

NETWORK BINDING
INCOMPLETE

5. ALARM OUTPUT

Supervisor can output to alarm relays etc. as described in this instruction. Alternatively, in the case of a larger system fitted with an alarm control the alarm control can be used to monitor the status of supervisor, this approach saves additional relay ouputs in the installation. Refer section 5.2 "Profiles" in Alarm control instructions.

6. FIXED DESCRIPTIONS

The following descriptions are available to describe channels;

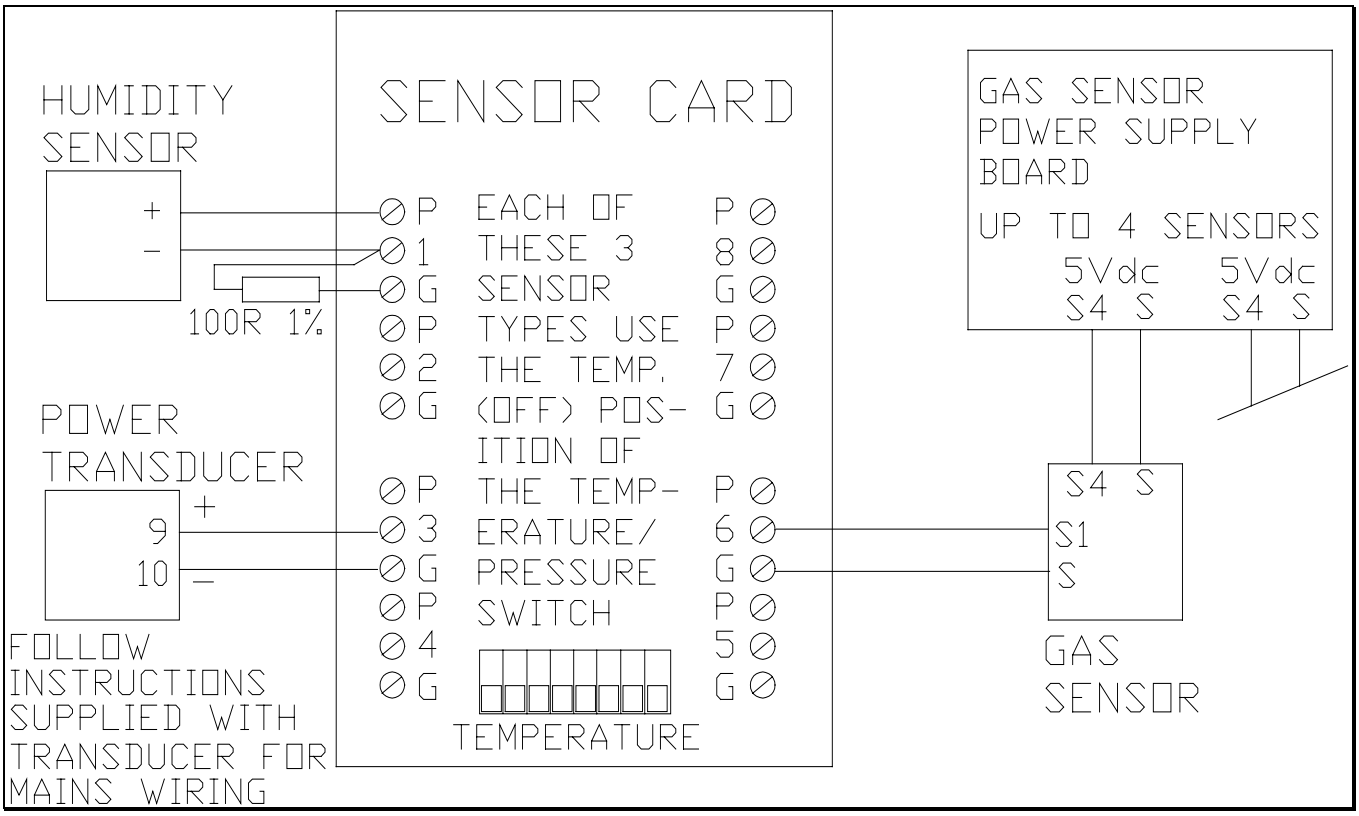
AMBIENT
AMMONIA
C.A. ROOM
CASE
CIRCUIT 1
CIRCUIT 2
CIRCUIT 3
CIRCUIT 4
CO
CO2
FRUIT ROOM
GAS
HP62
HUMIDITY
INCOMING
LABORATORY
MAIN POWER
PRIMARY
R12
R13
R134A
R143A
R22
R290
R403
R404A
R407
R502
REFRIGERANT
ROOM
PLANT ROOM
POWER
PROPANE
SECONDARY
STORE
SUB SYSTEM
SYSTEM 1
SYSTEM 2
SYSTEM 3
SYSTEM 4
SYSTEM A
SYSTEM B
SYSTEM C
SYSTEM D
<USER DESC. 1> Both 1 & 2 are
<USER DESC. 2> user programmable

Controller Description

The following descriptions are available to describe the supervisor;

Gas Alarm
Gas Monitor
Humidity Control
Leak Detector
Monitor
Power Miser
Power Monitor
Presscon Monitor
Supervisor

7. Wiring ;The diagram below shows the sensor wiring required for the different types of transducers used with the Supervisor.



Program setting codes for refrigerant gas monitoring.

Refrigerant	Sensor	Setting 1	Setting 2	Setting 3	Setting 4	Setting 5
R22	PR/G328	195	184	175	90	45
R401 (MP-39)	PR/G328	200	188	178	95	48
R402 (HP-80)	PR/G328	209	197	187	103	54
R404A (HP-62)	PR/G328	202	191	182	99	50
R407B (CLEAR 61)	PR/G328	210	198	188	104	55

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