PREMIUM CLEAN ROOM CONTROLLER MODELS 8630-CRC-S 8630-CRC-P

MANUAL SUPPLEMENT

Contents of this manual supplement include:

Sequence of Operation

The Model 8630-CRC controls room pressure by modulating the general exhaust damper to maintain pressure setpoint. In controller mode, the 8630-CRC will also control the supply to a constant volume. In monitoring mode, an analog output can be used to send the current room pressure value. Additionally, the Model 8630-CRC supports the open MODBUS protocol over an RS-485 network and an analog pressure output.

Menu Structure

SETPOINTS	ALARM	CONFIGURE	CALIBRATION
SETPOINT	**LOW ALARM**	DISPLAY AVG	SENSOR ZERO
SUPPLY SETPT	**HIGH ALARM**	UNITS	SENSOR SPAN
ACCESS CODE	**SEC LOW ALM**	ROOM VOLUME	**2SENSOR ZERO**
	SEC HIGH ALM	2 SENSOR	**2SENSOR SPAN**
	MIN SUP ALM	ACCESS CODE	**SUP 1 ZERO**
	ALARM RESET		**SUP 2 ZERO**
	AUDIBLE ALM		ELEVATION
	ALARM DELAY		ACCESS CODE
	MUTE TIMEOUT		
	ACCESS CODE		

CONTROL	INTERFACE	DIAGNOSTICS	PRESSURE	FLOW
SPEED	NET PROTOCOL	**CONTROL SUP**	**SENSOR TYPE**	**SUP1 AREA**
SENSITIVITY	NET ADDRESS	**CONTROL EXH**	**MAX OUT SIG**	**SUP2 AREA**
CONTROL SIG	OUT SIG	SENSOR INPUT	**MAX OUT VAL**	**SUP1 KFACTOR**
KC VALUE	**OUT MODE**	SENSOR STAT	**ACCESS CODE**	**SUP2 KFACTOR**
TI VALUE	ACCESS CODE	2 SENS INPUT		**SENSOR TYPE**
ACCESS CODE		2 SENS STAT		**MAX OUT SIGNAL**
		SUP 1 INPUT		**MAX OUT VAL**
		SUP 2 INPUT		**ACCESS CODE**
		PRES ALM REL		
		SUP ALM REL		
		ACCESS CODE		

Figure 1: Menu Items - Model 8630-CRC Premium Controller

Description of New Software Items

The Model 8630-CRC has additional software items.

Setpoints Menu

Menu Item	Description
SETPOINT	The **SETPOINT** item sets the pressure setpoint for the space. If the **SENSOR TYPE** in the PRESSURE menu is **UNI DIRECT**, then the range of the set point is from 0 to within 0.005 " H_2O of the pressure sensor **MAX OUT VAL**. If the **SENSOR TYPE** in the PRESSURE menu is **BI DIRECT**, then the range of the set point is from 0.005 " H_2O greater than the negative of the pressure sensor **MAX OUT VAL** to 0.005 " H_2O less than the positive of the pressure sensor **MAX OUT VAL**. If the **SENSOR TYPE** in the PRESSURE menu is **TSI**, then the range of the set point is from -0.195 " H_2O to +0.195 "H_2O. For example, if the **SENSOR TYPE** is **UNI DIRECT**, and the **MAX OUT VAL** of the sensor is -1.0 " H_2O, then the **SETPOINT** can range from 0 " H_2O to -0.995 " H_2O. For a **BI DIRECT** sensor of **MAX OUT VAL** = 1.0 " H_2O, **SETPOINT** can range from -0.995 " H_2O to +0.995 " H_2O.
SUPPLY SETPT	The **SUPPLY SETPT** item sets the constant supply volume setpoint. The **SUPPLY SETPT** can range from 0 to the FLOW menu **MAX OUT VAL** * (**SUP1 AREA** * **SUP1 KFACTOR** + **SUP2 AREA** * **SUP2 KFACTOR**).

Alarm Menu

Menu Item	Description
LOW ALARM **SEC LOW ALM**	The **LOW ALARM** and **SEC LOW ALARM** items set the low pressure alarm set points for the primary and secondary pressure sensor. A low alarm condition occurs when the room pressure falls below or goes in the opposite direction of the low alarm set point. The **SEC LOW ALM** setpoint is only used when the second sensor is enabled through the CONFIGURE menu. The **LOW ALARM** and **SEC LOW ALM** can be set to **OFF.** The **LOW ALARM** and **SEC LOW ALM** have a range from 0 to within 0.005 " H_2O of the pressure **SETPOINT.** For **TSI** or **BI DIRECT** sensor types, the low alarm must be of the same sign (positive or negative) as the pressure **SETPOINT**. The default value is **OFF**.
HIGH ALARM **SEC HIGH ALM**	The **HIGH ALARM** and **SEC HIGH ALM** items set the high pressure alarm set points. A high alarm condition occurs when the room pressure rises above the high alarm set point. The **SEC HIGH ALM** setpoint is only used when the second sensor is enabled through the CONFIGURE menu. The **HIGH ALARM** and **SEC HIGH ALM** can be set to **OFF.** The **HIGH ALARM** and **SEC HIGH ALM** have a range from within 0.005 " H_2O of the pressure **SETPOINT** to within 0.005" H_2O of the pressure **MAX OUT VAL.** For **TSI** or **BI DIRECT** sensor types, the high alarm must be of the same sign (positive or negative) as the pressure **SETPOINT**. The default value is **OFF**.

Calibration Menu

Menu Item	Description
SUP 1 ZERO **SUP 2 ZERO**	The **SUP 1 ZERO** and **SUP 2 ZERO** items are used to calibrate the flow station pressure transducers. A zero or no flow setpoint needs to be established prior to using the supply flow measurements (see Calibration section of manual following menu item listing).

Interface Menu

Menu Item	Description
OUT MODE	The **OUT MODE** item determines the function of the supply control outputs. This item can be set to either **SUPPLY CONT** or **PRESS MONIT**. If set to **PRESS MONIT**, the 8630-CRC will have an analog output of the measured room pressure differential. In either **SUPPLY CONT** or **PRESS MONIT** mode, this output will be either 0-10V or 4-20 mA, depending on the **OUT SIGNAL** setting.

Diagnostics Menu

Menu Item	Description
SUP 1 INPUT **SUP 2 INPUT**	The **SUP 1 INPUT** and **SUP 2 INPUT** items are used to read the flow measurement inputs directly. When these item are entered, the display will indicate the voltage from the proper transducer. The exact voltage displayed is relatively unimportant. It is more important that the voltage change to indicate the flow station is working properly.

Pressure Menu

Menu Item	Description
SENSOR TYPE	The **SENSOR TYPE** item is used to set the type of pressure sensor used to measure the room pressure differential. This item can be set to **TSI, UNI DIRECT,** or **BI DIRECT**. The default value is **TSI**.
MAX OUT SIG	The **MAX OUT SIG** item is used to set the maximum pressure output voltage from the transducer used. This item can be set to **5 V** or **10 V**, with a default value of **10 V**. For a TSI pressure sensor, the **MAX OUT SIG** must be set to **10 V**.

MAX OUT VAL	The **MAX OUT VAL** item is used to set the maximum pressure reading of the transducer used. This item can be set between **0.1" H2O** and **2" H2O**, with a default value of **0.2" H2O.** For a **TSI** pressure sensor, the **MAX OUT VAL** must be set to **0.2" H2O**. For a **UNI DIRECT** pressure sensor, the **MAX OUT VAL** must be programmed as a positive or negative, depending on the pressure relationship of the space to its reference. The **MAX OUT VAL** item also scales the analog output of the 8630-CRC when in **PRESS MONIT** mode. For **UNI DIRECT** sensors, 0 V (or 4 mA in **CURRENT** mode) corresponds to a pressure differential of 0, and 10 V or (20 mA in **CURRENT** mode) corresponds to a pressure differential of **MAX OUT VAL**. For **BI DIRECT** or **TSI** sensors, 0 V (or 4 mA in **CURRENT** mode) corresponds to a pressure differential of -**MAX OUT VAL**, and 10 V or (20 mA in **CURRENT** mode) corresponds to a pressure differential of **MAX OUT VAL**.

Flow Menu

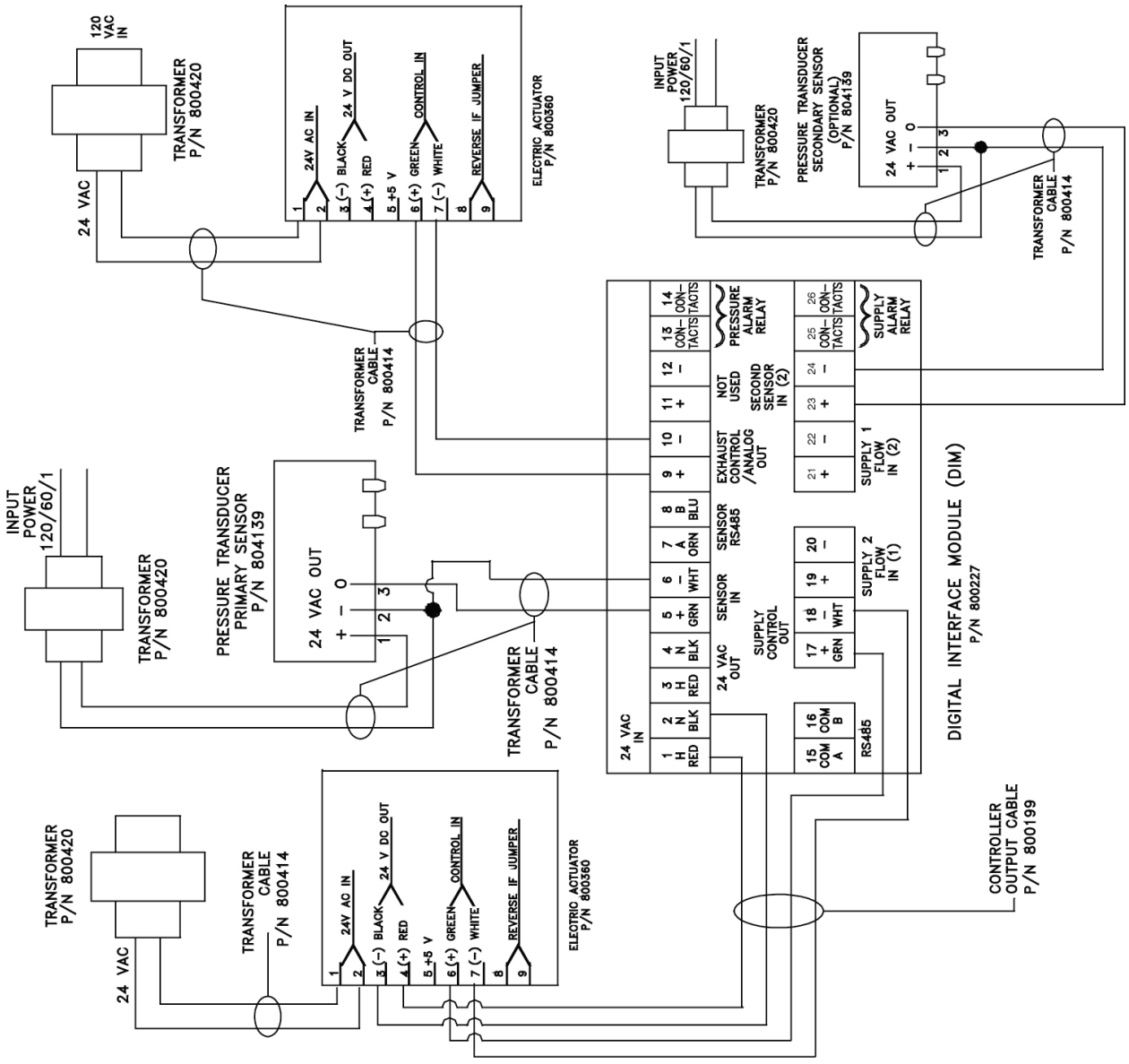
Menu Item	Description
SUP1 AREA **SUP2 AREA**	The **SUP1 AREA** and **SUP2 AREA** items are used to input the duct sizes for the first and second supply. The duct sizes are needed to compute the air flowing into the room. These items require a flow sensor to be mounted in the proper supply duct. When a duct area is programmed, the display will automatically scroll the actual total supply flow as part of the display scroll sequence. If a zero value is entered, the supply flow value will not scroll on the display. The programmed duct areas can range from **0** to **10 square feet** if the PresSura displays English units. If the PresSura displays metric units, then the duct areas can range from **0** to **0.9500 square meters**. The default is **0**.
SUP1 KFACTOR **SUP2 KFACTOR**	The **KFACTOR** menu item sets the "K" factor for the flow probe being used. The flow signal is multiplied by the **KFACTOR** so that the flow measurement matches the actual flow, usually determined with a pitot tube traverse. The **KFACTOR** has a minimum value of **0** and a maximum value of **10**., with a default of **1**.
SENSOR TYPE	The **SENSOR TYPE** item is used to select the flow station input signal. **PRESSURE** is used when flow stations with pressure transducers are installed. **LINEAR** is selected when a linear output flow station, typically a thermal-based flow station, is installed.
MAX OUT SIG	The **MAX OUT SIG** item is used to set the maximum output voltage from the transducer used. This item can be set to **5 V** or **10 V**, with a default value of **5 V**. For a TSI flow station, the **MAX OUT SIG** must be set to **5 V**.
MAX OUT VAL	The **MAX OUT VAL** item is used to set the maximum pressure reading of the transducer used, or the maximum velocity of the linear flow station used. For a pressure based measurement, this item can be set between **0.1" H2O** and **0.5" H2O**, with a default value of **0.5" H2O.** For a linear flow station, this item can be set between **0** and **5,000 ft/min**. For a TSI flow station, the **MAX OUT VAL** must be set to **0.5" H2O**.

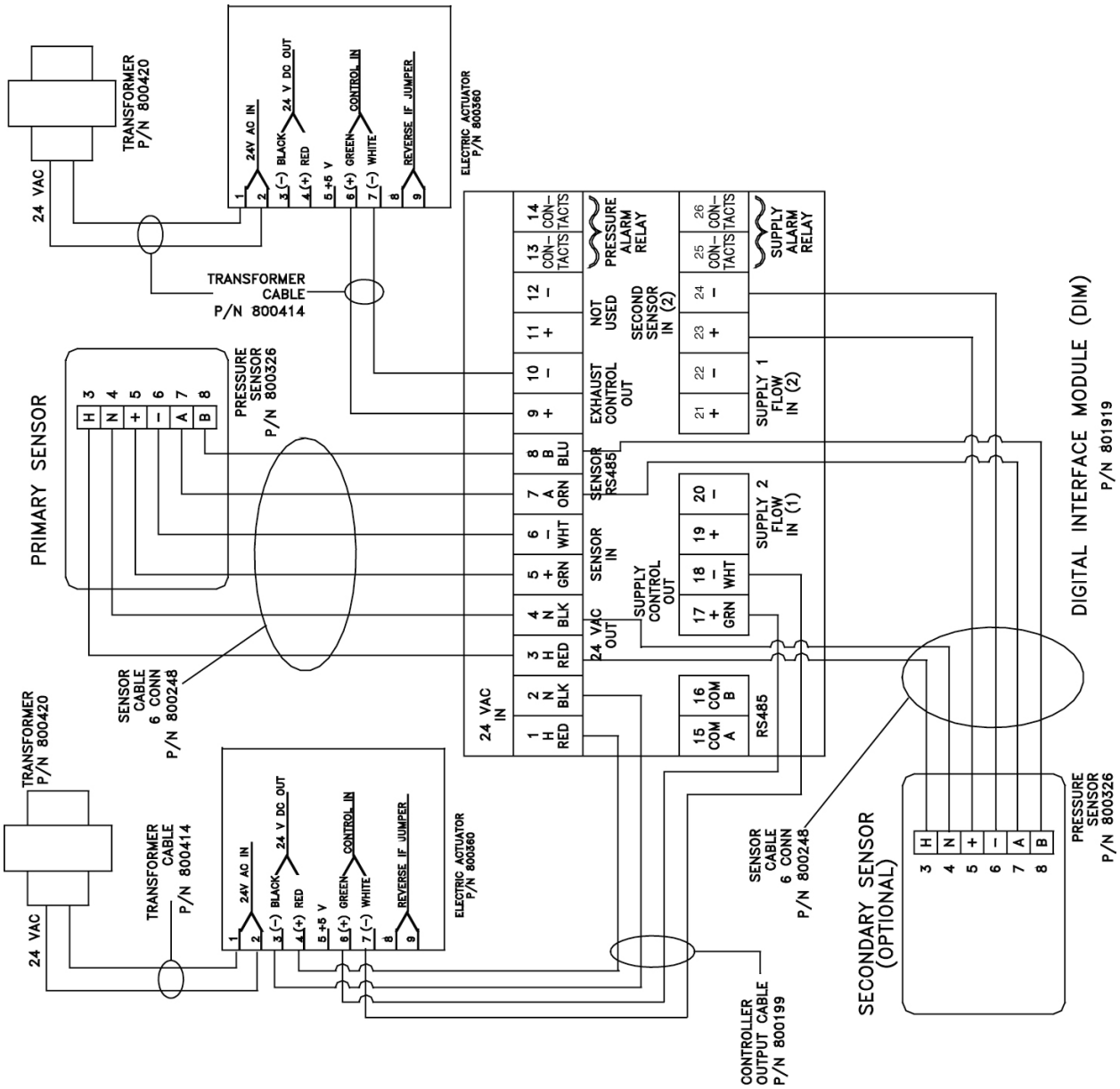
Deleted Software Menu Items

The following items have been replaced on the 8630-CRC.

SETPOINTS MENU	NEG SETPOINT POS SETPOINT MIN EXH SET DAMPER SET
ALARM MENU	NEG LOW ALARM NEG HIGH ALARM POS LOW ALARM POS HIGH ALARM MIN EXH ALARM
CONFIGURE MENU	ROOM MODE EXH DCT AREA SUP DCT AREA ACPH DUCT
CALIBRATION MENU	EXH FLO ZERO SUP FLO ZERO
CONTROL MENU	TD VALUE
INTERFACE MENU	OUTPUT RANGE
DIAGNOSTICS MENU	CONTROL OUT ANALOG OUT KEY INPUT EXH FLOW IN SUP FLOW IN LOW ALM RELAY HIGH ALM RELAY

Wiring Diagrams




DIGITAL INTERFACE MODULE (DIM)
P/N 801919
PRIMARY SENSOR
PRESSURE SENSOR P/N 800326
SECONDARY SENSOR (OPTIONAL)
PRESSURE SENSOR P/N 800326
TRANSFORMER P/N 800420
24 VAC
TRANSFORMER CABLE P/N 800414
ELECTRIC ACTUATOR P/N 800360
24V AC IN
24 V DC OUT
CONTROL IN
REVERSE IF JUMPER
BLACK
RED
GREEN
WHITE
SENSOR CABLE 6 CONN P/N 800248
CONTROLLER OUTPUT CABLE P/N 800199
24 VAC IN
24 VAC OUT
SUPPLY CONTROL OUT
SENSOR IN
SENSOR RS485
EXHAUST CONTROL OUT
NOT USED
SECOND SENSOR IN (2)
PRESSURE ALARM RELAY
SUPPLY ALARM RELAY
SUPPLY 1 FLOW IN (2)
SUPPLY 2 FLOW IN (1)
RS485
CON-TACTS

Access Codes

The 8630-CRC has a single access code for all menus. Each menu has the access code enabled individually; implementing the access code in one menu does not enable the access code in other menus. When an access code is required, pressing the following key sequence will provide access:

Key #	
1	EMERGENCY
2	MUTE
3	MUTE
4	MENU
5	AUX