

# Model 8630-PC-N2, 8630-PM-N2 Premium Isolation Room Pressure Controller/Monitor with N2 Communications Protocol

## Manual Supplement

Contents of this manual supplement include:

- [Variable Map](#)
- [Description of Variables](#)
- [Wiring Diagram](#)

N2 communications are installed on the Model 8630-PC-N2 isolation room pressure controllers and the Model 8630-PM-N2 isolation room pressure monitors. This document provides the technical information needed for the host DDC system to communicate with the Model 8630-PC and 8630-PM units. This document assumes the programmer is familiar with the N2 protocol. Further technical assistance is available from TSI if your question is related to TSI interfacing to a DDC system. If you need further information regarding N2 programming in general, please contact Johnson Controls.



## Variable Map

NPT	NPA	Units <sup>1</sup>	Description
AI	1	ft/min, m/s, in. H <sub>2</sub> O, Pa, mm H <sub>2</sub> O	Room Pressure Value
AI	2	CFM, l/s	Exhaust Flow Rate
AI	3	#	Air Changes Per Hour
AI	4	ft/min, m/s, in. H <sub>2</sub> O, Pa, mm H <sub>2</sub> O	Second Sensor Pressure Value
*AI	5	CFM, l/s	Supply Flow Rate
*AI	6	ft/min, m/s, in. H <sub>2</sub> O, Pa, mm H <sub>2</sub> O	Control Setpoint
*AI	7	#	Control Output 0-255
BI	1		Low Room Pressure Alarm 0=Normal 1=Low Alarm
BI	2		High Room Pressure Alarm 0=Normal 1=High Alarm
BI	3		Second Sensor Low Pressure Alarm 0=Normal 1=Low Alarm
BI	4		Second Sensor High Pressure Alarm 0=Normal 1=High Alarm
BI	5		Min. Exhaust Flow Alarm 0=Normal 1=Low Flow Alarm
BI	6		Data Error 0=Normal 1=Data Error
*BI	7		Min. Supply Flow Alarm 0=Normal 1=Low Flow Alarm
*BI	8		Emergency Mode 0=Normal 1=Emergency
AO	1	ft/min, m/s, in. H <sub>2</sub> O, Pa, mm H <sub>2</sub> O	Negative Low Alarm Setpoint
AO	2	ft/min, m/s, in. H <sub>2</sub> O, Pa, mm H <sub>2</sub> O	Negative High Alarm Setpoint
AO	3	ft/min, m/s, in. H <sub>2</sub> O, Pa, mm H <sub>2</sub> O	Positive Low Alarm Setpoint
AO	4	ft/min, m/s, in. H <sub>2</sub> O, Pa, mm H <sub>2</sub> O	Positive High Alarm Setpoint
AO	5	CFM, l/s	Min. Exhaust Flow Alarm Setpoint
AO	6	ft/min, m/s, in. H <sub>2</sub> O, Pa, mm H <sub>2</sub> O	Second Sensor Low Alarm Setpoint
AO	7	ft/min, m/s, in. H <sub>2</sub> O, Pa, mm H <sub>2</sub> O	Second Sensor High Alarm Setpoint
AO	8	#	Room Pressure Control Mode <sup>2</sup> 0=Negative 1=Positive 2=No Isolation
AO	9	#	Units 0=Feet per minute 1=Meters per second 2=Inches of H <sub>2</sub> O 3=Pascals 4=millimeters of H <sub>2</sub> O

\* Option only available on 8630-PC-N2.

<sup>1</sup> Units will correspond with choice in UNITS variable (AO #9). Flow rates will either be CFM or l/s, based on whether UNITS variable is set for an English or metric unit type.

<sup>2</sup> Override capability disabled when in keyswitch mode.

NPT	NPA	Units <sup>1</sup>	Description
*AO	10	ft/min, m/s, in. H <sub>2</sub> O, Pa, mm H <sub>2</sub> O	Negative Setpoint
*AO	11	ft/min, m/s, in. H <sub>2</sub> O, Pa, mm H <sub>2</sub> O	Positive Setpoint
*AO	12	CFM, l/s	Minimum Exhaust Flow Setpoint
*AO	13	#	No Isolation Mode Damper Position 0 to 255
*AO	14	CFM, l/s	Min. Supply Flow Alarm Setpoint

---



---

## Description of Variables

### NPT - Network Point Type

Variables are defined as analog inputs, binary inputs, and analog outputs. Analog inputs are current control parameters and items that the controller is measuring. Binary inputs represent controller states. Analog outputs are the programmable setpoints for the isolation room pressure controller and monitor. These setpoints can be changed through the keypad or by overriding the current setpoint.

### NPA - Network Point Address

Address of the desired point.

### Change of Status (COS) - Room Pressure Analog Input

The 8630-PC has the ability to change control setpoints locally. The alarm setpoints need to be based on the controller's control setpoint (AI #6). For example the setpoint could go from -0.002 "H<sub>2</sub>O to +0.001 "H<sub>2</sub>O. If the COS alarm setpoints are not changed to accommodate you could get low alarm or low warning messages when the unit is working correctly. If these alarm points are set outside of the negative and positive setpoint values, incorrect alarm messages can be prevented.

### Override Analog Input Command

Analog Input values can be set using the override command. These values will be reset to the correct items when the Override is released. There is not a time-out on the override command.

### Override Binary Input Command

Overriding a 1 to Emergency binary inputs enables that mode. To release the controller from emergency state, override a 0 to the Emergency input or press either the emergency or reset key. Releasing the override will return the controller to the Normal state. If the 8630-PC-N2 had been put into Emergency mode from the keypad, then it cannot be cleared remotely.

The alarm and data error variables can be overridden, but this will not affect the controller. Overriding the low alarm variable will result in a change of status, but will not put the controller into low alarm mode. The local alarm modes can only be controlled locally. Only override these variables for diagnostic purposes, and release them for normal operation.

### Binary Input Data Error

Data Error binary inputs are used to indicate if something has gone wrong with the controller. Data Error indicates when some of the data stored on the device has been corrupted. The calibration and setpoint values should be checked on the controller.

## Override Analog Output Command

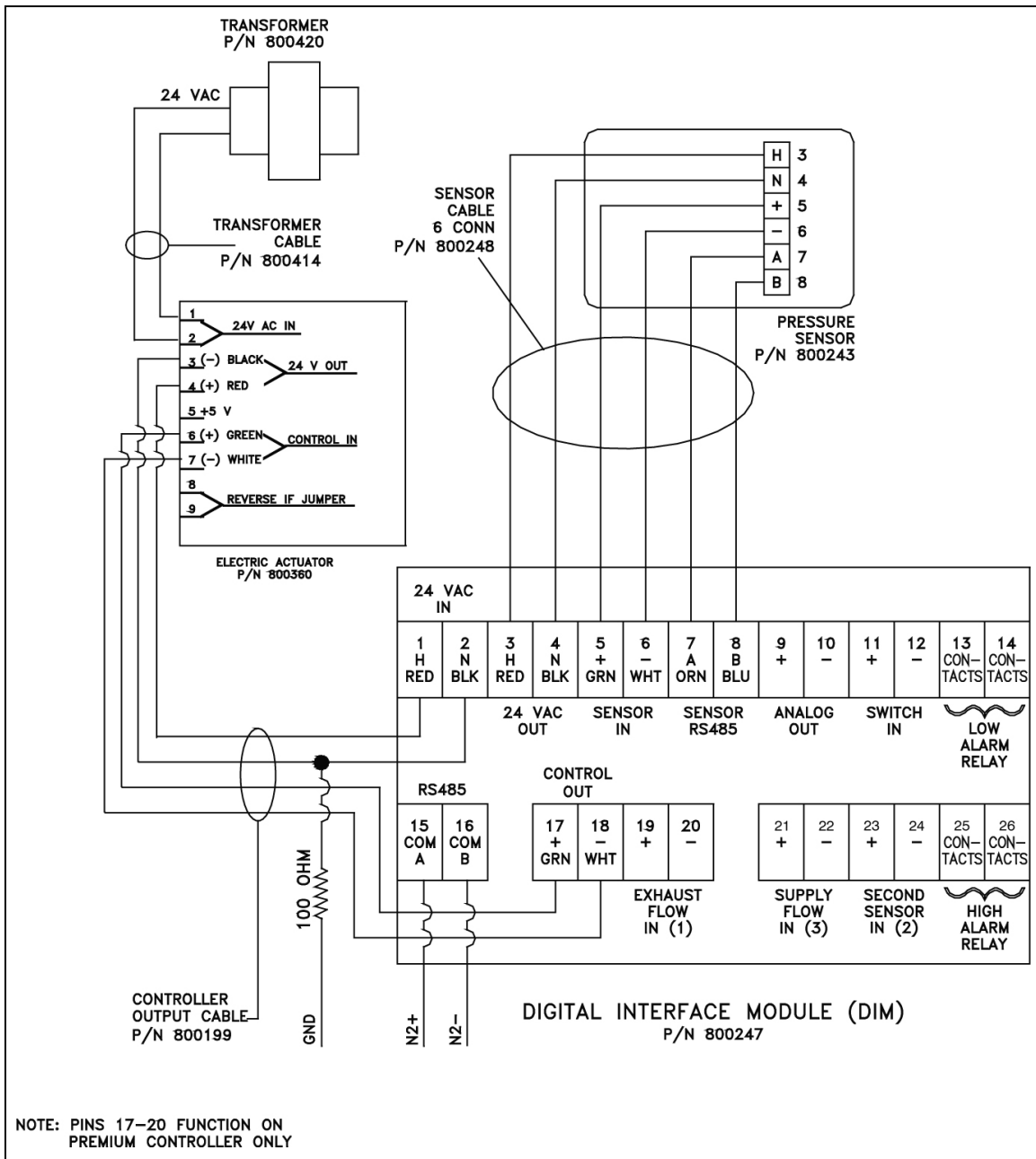
The analog output variables can be overridden to change their values. The overridden value will be checked for validity. If invalid, the override command will be ignored, and the value will not change. The override flag will not be set when the value is ignored. The override command will be cleared when the variable is reset in the menus. The variable will not reset with the release command.

## Supported Commands

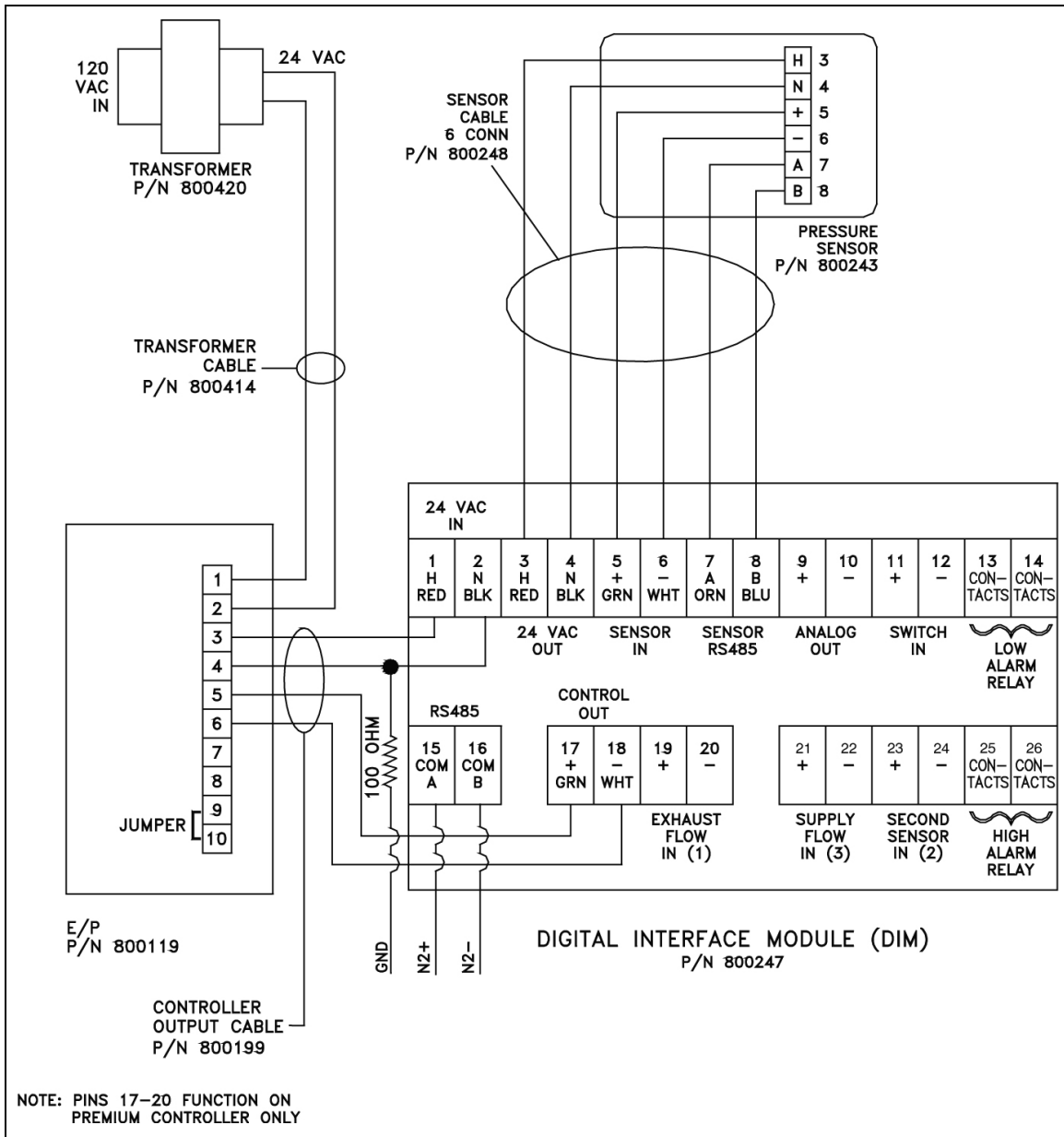
Command	Response
Request Device ID	Returns 0x10
Synchronize Time Command	Acknowledged. There Is No Internal Clock To Synchronize.
Poll Without/With Ack Message	Any Change Of Status Is Returned
Read Analog Input Command	Variable Value
Read Binary Input Command	Variable Value
Read Analog Output Command	Variable Value
Write Analog Input	Acknowledge
Write Binary Input	Acknowledge
Write Analog Output	Acknowledge
Override Analog Input Command	Acknowledge
Override Binary Input Command	Acknowledge
Override Analog Output Command	Acknowledge
Override Release Request	Acknowledge
Identify Device Type Command	Returns 0x10h

**Note:** Poll Without/With Ack Message will need to be sent twice in order to receive all of the possible change of status variables.

# Wiring Diagram



# Wiring Diagram



**TSI Incorporated** – 500 Cardigan Road, Shoreview, MN 55126 U.S.A

USA Tel: +1 800 874 2811  
 UK Tel: +44 149 4 459200  
 France Tel: +33 491 11 87 64  
 Germany Tel: +49 241 523030  
 India Tel: +91 80 41132470  
 China Tel: +86 10 8260 1595  
 Singapore Tel: +65 6595 6388

E-mail: [answers@tsi.com](mailto:answers@tsi.com)  
 E-mail: [tsiuk@tsi.com](mailto:tsiuk@tsi.com)  
 E-mail: [tsifrance@tsi.com](mailto:tsifrance@tsi.com)  
 E-mail: [tsigmbh@tsi.com](mailto:tsigmbh@tsi.com)  
 E-mail: [tsi-india@tsi.com](mailto:tsi-india@tsi.com)  
 E-mail: [tsibeijing@tsi.com](mailto:tsibeijing@tsi.com)  
 E-mail: [tsi-singapore@tsi.com](mailto:tsi-singapore@tsi.com)

Website: [www.tsi.com](http://www.tsi.com)  
 Website: [www.tsiinc.co.uk](http://www.tsiinc.co.uk)  
 Website: [www.tsiinc.fr](http://www.tsiinc.fr)  
 Website: [www.tsiinc.de](http://www.tsiinc.de)



TRUST. SCIENCE. INNOVATION.

Contact your local TSI Distributor or visit our website [www.tsi.com](http://www.tsi.com) for more detailed specifications.