

Input/Output Variables (Read/Write)

Name	SNVT Type/Index	Description	Valid Values/Range									
nviHeatDemand	SNVT_switch 100	Heat Demand/Request. Setting the state member of this variable will put the boiler in heating mode.	<table border="1"> <thead> <tr> <th>value</th> <th>state</th> <th>Interpretation</th> </tr> </thead> <tbody> <tr> <td>any</td> <td>0</td> <td>no heat demand</td> </tr> <tr> <td>any</td> <td>1</td> <td>heat demand</td> </tr> </tbody> </table>	value	state	Interpretation	any	0	no heat demand	any	1	heat demand
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any	0	no heat demand										
any	1	heat demand										
nviSetpointTimer	SNVT_count 101	<p>System Setpoint Timer</p> <p>The system setpoint timer and system setpoint work in tandem to externally control (i.e. a BMS - building management system) the operating setpoint. The setpoint (countdown) timer should be loaded with a timeout value (in seconds) prior to writing the system setpoint. When the timer reaches zero, the control assumes that the BMS is no longer operating and the local setpoint (saved on the control) is reloaded. This is a failsafe feature used to help safeguard the system in case of BMS failure. If the setpoint timer is not written, a default timeout value of 60 seconds is assumed.</p>	0 – 65535 seconds									
nviSetpoint	SNVT_temp_p 102	System Setpoint (see <i>nviSetpointTimer</i>)	4.5 – 104.4 °C (40 - 220 °F)									
nviOARResetEnable	SNVT_switch 103	Enables/Disables outdoor air reset mode.	<table border="1"> <thead> <tr> <th>value</th> <th>state</th> <th>interpretation</th> </tr> </thead> <tbody> <tr> <td>any</td> <td>0</td> <td>disabled</td> </tr> <tr> <td>any</td> <td>1</td> <td>enabled</td> </tr> </tbody> </table>	value	state	interpretation	any	0	disabled	any	1	enabled
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nviOARSetpoint	SNVT_temp_p 104	Outdoor air reset setpoint. Temperature at which boiler shuts down.	4.5 – 37.8 °C (40 – 100 °F)									
nviOARHiWtrTemp	SNVT_temp_p 105	Boiler water temperature setpoint when outdoor air temperature is at the high outdoor air temperature setpoint (<i>nviOARHiAirTemp</i>).	15.6 – 65.6 °C (60 – 150 °F)									
nviOARHiAirTemp	SNVT_temp_p 106	High outdoor air temperature setpoint.	10 – 32.2 °C (50 – 90 °F)									
nviOARLoWtrTemp	SNVT_temp_p 107	Header/Supply temperature setpoint when outdoor air temperature is at the low outdoor air temperature setpoint (<i>nviOARLoAirTemp</i>).	21.1 – 104.4 °C (70 – 220 °F)									
nviOARLoAirTemp	SNVT_temp_p 108	Low outdoor air temperature setpoint.	-37.2 – 4.4 °C (-35 – 40 °F)									
nviSetMonth	SNVT_count 109	Set real time clock – month (see <i>nviSetClock</i>)	0 (January) – 11 (December)									

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nviSetDay	SNVT_count 110	Set real time clock – day (<i>see nviSetClock</i>)	1 – 31									
nviSetYear	SNVT_count 111	Set real time clock – year (<i>see nviSetClock</i>)	0 – 99									
nviSetHour	SNVT_count 112	Set real time clock – hour (<i>see nviSetClock</i>)	0 – 23									
nviSetMinute	SNVT_count 113	Set real time clock – minute (<i>see nviSetClock</i>)	0 – 59									
nviSetSecond	SNVT_count 114	Set real time clock – second (<i>see nviSetClock</i>)	0 – 59									
nviSetWeekday	SNVT_count 115	Set real time clock – weekday (<i>see nviSetClock</i>)	1 (Monday) – 7 (Sunday)									
nviSetClock	SNVT_switch 116	<p>Set (write) the real time clock.</p> <p>To write the real time clock, the system variables (<i>nviSetMonth</i>, <i>nviSetMonth</i>, <i>nviSetDay</i>, <i>nviSetYear</i>, <i>nviSetHour</i>, <i>nviSetMinute</i>, <i>nviSetSecond</i>, <i>nviSetWeekday</i>) must first be loaded with the correct date and time. Then, a 1 must be written to the state portion of this system variable to write the new date and time to the system clock.</p>	<table border="1"> <thead> <tr> <th>value</th> <th>state</th> <th>interpretation</th> </tr> </thead> <tbody> <tr> <td>any</td> <td>0</td> <td>---</td> </tr> <tr> <td>any</td> <td>1</td> <td>set the clock</td> </tr> </tbody> </table>	value	state	interpretation	any	0	---	any	1	set the clock
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any	0	---										
any	1	set the clock										

Input Variables (Read Only)

Name	SNVT Type/Index	Description	Valid Values/Range
nvoBoilersOn	SNVT_count 200	The number of boilers currently running.	0 – 16
nvoModulation	SNVT_lev_cont_f 201	Current system modulation level.	0 – 100 %
nvoHeaderTemp	SNVT_temp_p 202	Header / System temperature.	0 – 121.1 °C (32 – 250 °F)
nvoSupplyTemp	SNVT_temp_p 203	Supply temperature.	0 – 121.1 °C (32 – 250 °F)
nvoReturnTemp	SNVT_temp_p 204	Return temperature.	0 – 121.1 °C (32 – 250 °F)
nvoOutsideTemp	SNVT_temp_p 205	Outside air temperature.	-40 – 121.1 °C (-40 – 250 °F)
nvoSpare1	SNVT_count 206	Raw A/D value from spare 1 input.	-32768 to 32767
nvoSpare2	SNVT_count 207	Raw A/D value from spare 2 input.	-32768 to 32767
nvoMonth	SNVT_count 208	Real time clock month.	0 – 11
nvoDay	SNVT_count 209	Real time clock day.	1 – 31
nvoYear	SNVT_count 210	Real time clock year.	0 – 99
nvoHour	SNVT_count 211	Real time clock hour.	0 – 23
nvoMinute	SNVT_count 212	Real time clock minute.	0 – 59
nvoSecond	SNVT_count 213	Real time clock second.	0 – 59
nvoWeekday	SNVT_count 214	Real time clock weekday.	1 – Monday 7 – Sunday

Name	SNVT Type/Index	Description	Valid Values/Range																																		
nvoClock	SNVT_time_stamp 215	Real time clock date and time.	0 – 11																																		
nvoBlr01Status1 ... nvoBlr16Status1	SNVT_state 300 302 304 ... 328 330 (Even Indices)	Boiler status flags #1 (boilers 1 – 16). These bits indicate the state of the 24VAC interlocks, ignition circuit, and various other conditions. See the values column for a list of conditions.	0 = off, disabled, or not present 1 = on, enabled, or present <table border="1"> <thead> <tr> <th>Bit</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>0</td><td>Disabled</td></tr> <tr><td>1</td><td>Local Override</td></tr> <tr><td>2</td><td>Alarm</td></tr> <tr><td>3</td><td>Failed</td></tr> <tr><td>4</td><td>Member Error</td></tr> <tr><td>5</td><td>Boiler Running</td></tr> <tr><td>6</td><td>Pump Running</td></tr> <tr><td>7</td><td>Spare 3 Interlock</td></tr> <tr><td>8</td><td>LWCO Interlock</td></tr> <tr><td>9</td><td>VFD Interlock</td></tr> <tr><td>10</td><td>Gas Prove</td></tr> <tr><td>11</td><td>Spare 4</td></tr> <tr><td>12</td><td>Operator Interlock</td></tr> <tr><td>13</td><td>Water Prove (Flow) Interlock</td></tr> <tr><td>14</td><td>Air Prove UV Sensor Interlock</td></tr> <tr><td>15</td><td>Main Valve</td></tr> </tbody> </table>	Bit	Description	0	Disabled	1	Local Override	2	Alarm	3	Failed	4	Member Error	5	Boiler Running	6	Pump Running	7	Spare 3 Interlock	8	LWCO Interlock	9	VFD Interlock	10	Gas Prove	11	Spare 4	12	Operator Interlock	13	Water Prove (Flow) Interlock	14	Air Prove UV Sensor Interlock	15	Main Valve
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nvoBlr01Status2 ... nvoBlr16Status2	SNVT_state 301 303 305 ... 329 331 (Odd Indices)	Boiler status flags #2 (boilers 1 – 16).). These bits indicate the state of the ignition circuit, sensors, and various other conditions. See the values column for a list of conditions.	0 = off, disabled, or not present 1 = on, enabled, or present <table border="1"> <thead> <tr> <th>Bit</th> <th>Description</th> </tr> </thead> <tbody> <tr><td>0</td><td>Pilot Valve</td></tr> <tr><td>1</td><td>Blower</td></tr> <tr><td>2</td><td>Ignition Alarm</td></tr> <tr><td>3</td><td>Valve Alarm</td></tr> <tr><td>4</td><td>High Limit</td></tr> <tr><td>5</td><td>Air Prove Switch</td></tr> <tr><td>6</td><td>XS Factory</td></tr> <tr><td>7</td><td>Software Operator</td></tr> <tr><td>8</td><td>Header Sensor not Present</td></tr> <tr><td>9</td><td>Supply Sensor not Present</td></tr> <tr><td>10</td><td>Return Sensor not Present</td></tr> <tr><td>11</td><td>Outside Sensor not Present</td></tr> <tr><td>12 - 13</td><td>---</td></tr> <tr><td>14</td><td>Master Boiler</td></tr> <tr><td>15</td><td>Present (Boiler Detected)</td></tr> </tbody> </table>	Bit	Description	0	Pilot Valve	1	Blower	2	Ignition Alarm	3	Valve Alarm	4	High Limit	5	Air Prove Switch	6	XS Factory	7	Software Operator	8	Header Sensor not Present	9	Supply Sensor not Present	10	Return Sensor not Present	11	Outside Sensor not Present	12 - 13	---	14	Master Boiler	15	Present (Boiler Detected)		
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nvoBlr01Status3 ... nvoBlr16Status3	SNVT_state 400 ... 415	Boiler stage control input flags. These bits indicate the state of the stage control inputs. See the values column for a list of conditions.	0 = off or not present 1 = on or present <table border="1"> <thead> <tr> <th>Bit</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>AA High Fire</td> </tr> <tr> <td>1</td> <td>Heat Demand</td> </tr> <tr> <td>2</td> <td>4-20ma Remote Enable</td> </tr> <tr> <td>3</td> <td>Outdoor Air Reset Override</td> </tr> <tr> <td>4</td> <td>T1</td> </tr> <tr> <td>5</td> <td>T2</td> </tr> <tr> <td>6</td> <td>T3</td> </tr> <tr> <td>7</td> <td>T4</td> </tr> <tr> <td>8 - 15</td> <td>---</td> </tr> </tbody> </table>	Bit	Description	0	AA High Fire	1	Heat Demand	2	4-20ma Remote Enable	3	Outdoor Air Reset Override	4	T1	5	T2	6	T3	7	T4	8 - 15	---
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nvoBlr01Runtime ... nvoBlr16Runtime	SNVT_reg_val 500 ... 515	The total number of minutes that the boiler has been running (with the current control board).	0 – 35791394 minutes																				