



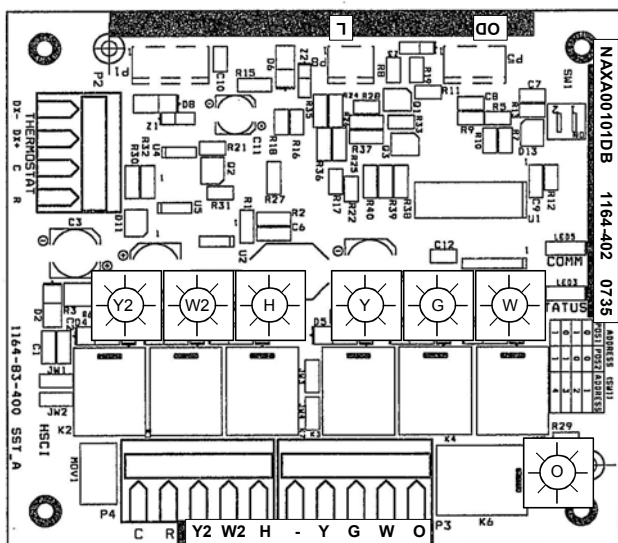
# Installation Instructions / User's Manual

## NAXA00101DB Communicating Daughter Board

The NAXA00101DB daughter board control allows for using 4 existing thermostat wires in an existing, finished home to communicate with the TSTAT0406 & TSTAT0407 thermostats. The daughter board translates the communicated heating and cooling needs and sends the normal discrete thermostat outputs to the indoor and outdoor equipment as needed. The NAXA00101DB Daughter Board must be used in conjunction with the TSTAT406 or TSTAT0407 Communicating Thermostat for proper operation. The daughter board provides a two-wire RS485 ModBus communication link and 24VAC to the communicating thermostat via a 4 wire connection scheme, "L" input from the Comfort Alert Module, a sensor input for the remote outdoor sensor, seven thermostat 24VAC outputs (W,G,Y,O,W2,Y2,H) and status & communication LED's.

### NAXA00101 Daughter Board Kit includes the following:

- NAXA00101DB Daughter Board
- 4 - # 6 sheet metal mounting screws
- "L" Input Pigtail wire harness & wire nut
- Remote outdoor sensor pigtail wire harness & wire nuts
- Installation instructions



### Note:

Output LED's illuminate next to corresponding outputs in areas shown by 

## Daughter Board Terminals & Connections

### See wiring diagrams for proper wiring and installation.

The following connections are provided in the P2 terminal block: (Power and Communication Connections to Communicating Thermostat)

P2 - Pin 1	"R"	24VAC hot power connection for communicating thermostat
P2 - Pin 2	"GND"	Ground connection for communicating thermostat
P2 - Pin 3	"DX+"	DX+ connection to the A+ Terminal on the communicating thermostat
P2 - Pin 4	"DX-"	DX- connection to the B- Terminal on the communicating thermostat

The following connections are provided in the P3 terminal block: (Outputs to the HVAC Equipment)

P3 - Pin 1	"O"	24 VAC thermostat output
P3 - Pin 2	"W"	24 VAC thermostat output
P3 - Pin 3	"G"	24 VAC thermostat output
P3 - Pin 4	"Y"	24 VAC thermostat output
P3 - Pin 5	"Not Used"	24 VAC thermostat output

The following connections are provided in the P4 terminal block: (Outputs to the HVAC Equipment)

P4 - Pin 1	"H"	24 VAC thermostat output
P4 - Pin 2	"W2"	24 VAC thermostat output
P4 - Pin 3	"Y2"	24 VAC thermostat output
P4 - Pin 4	"R"	24 VAC system power input
P4 - Pin 5	"C"	24 VAC system common input

The following connections are provided in the P5 Connector: (Optional Location for the Outdoor Sensor Hook-up)

P5 - Pin 1	"OD"	Ground for Remote Outdoor Temperature Sensor
P5 - Pin 2	"OD"	Remote Outdoor Temperature Sensor input
P5 - Pin 3	"Not used"	
P5 - Pin 4	"Not used"	

The following connections are provided in the P8 Connector: (Optional Connection for the Comfort Alert ALARM Output)

P8 - Pin 1	"Not Used"	----- No Connect----
P8 - Pin 2	"Not Used"	--- No connect ---
P8 - Pin 3	"L"	"L" fault input from Comfort Alert Module

### Status LED Operation

The LED labeled LED5 is a status LED that will provide a "heart beat" blink of this LED to indicate that the NAXA00101DB communicating daughter board control is powered and working properly.

### Communication LED Operation

The LED labeled LED3 will be illuminated for 100mS each time a successful communications packet is received from the TSTAT0406 or TSTAT0407 communicating thermostat.

### Thermostat Call Output LED's Operation

There is an LED Output for each thermostat output from the daughter board. The corresponding LED will illuminate any time the associated thermostat output is active.

- LED 8 illuminates when "O" Output is energized
- LED 7 illuminates when "W" Output is energized
- LED 6 illuminates when "G" Output is energized
- LED 4 illuminates when "Y" Output is energized
- LED 9 illuminates when "H" Output is energized
- LED 1 illuminates when "w2" Output is energized
- LED 2 illuminates when "Y2" Output is energized
-

### “L” Input from Comfort Alert Module to Daughter Board

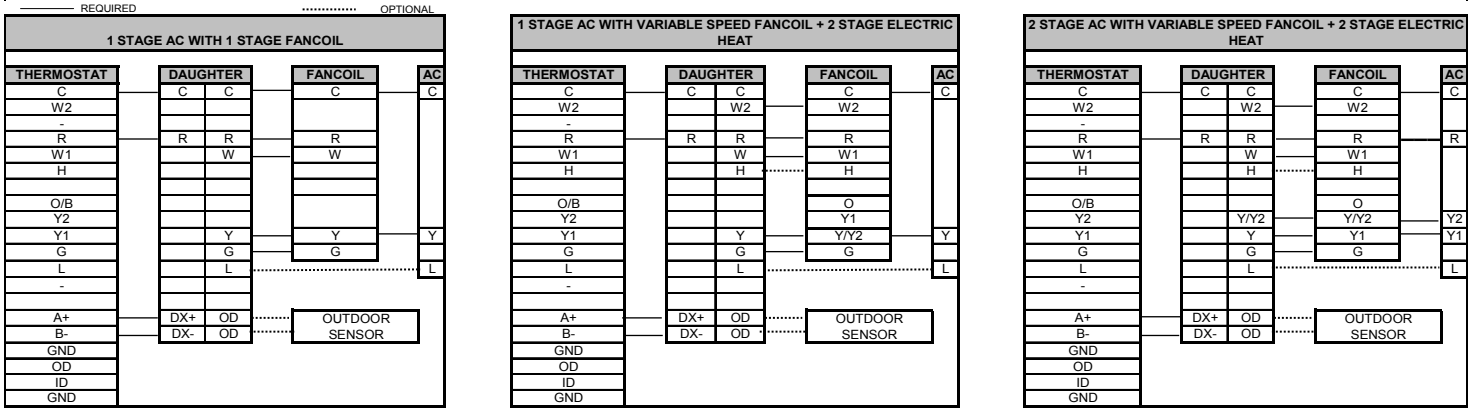
The Comfort Alert Module will transmit the active fault code. The Comfort Alert or thermostat does not have any effect on operation of the equipment during a Comfort Alert fault. The Comfort Alert fault output can be wired directly to the daughter board or communicating thermostat. When the Comfort Alert Module is wired to the “L” input of the daughter board, it will recognize the fault output after it has been active for 10 seconds. After the daughter board has recognized the active fault from the Comfort Alert Module, the daughter board will forward the fault information to the communicating thermostats via the communication wires. The communicating thermostat will then display the fault code as defined.

### COMFORT ALERT™ MODULE FAULT CODES

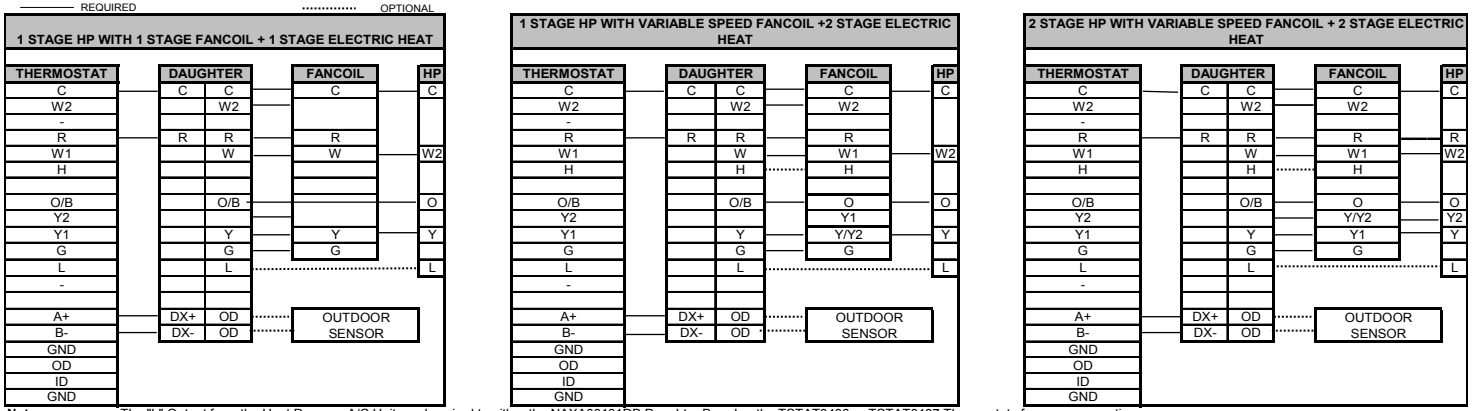
Status LED	Status LED Description	Status LED Troubleshooting Information
Green "POWER"	Module has power	Supply voltage is present at module terminals
Red "TRIP"	Thermostat demand signal Y is present, but the compressor is not running.	<ol style="list-style-type: none"> <li>Compressor protector is open                             <ul style="list-style-type: none"> <li>Check for high head pressure</li> <li>Check compressor supply voltage</li> </ul> </li> <li>Outdoor unit power disconnect is open</li> <li>Compressor circuit breaker or fuse(s) is open.</li> <li>Broken wire or connector is not making contact</li> <li>Low Pressure switch open if present in system</li> <li>Compressor contactor has failed open.</li> </ol>
Yellow "ALERT" Flash Code 1	<b>Long Run Time</b> Compressor is running extremely long run cycles	<ol style="list-style-type: none"> <li>Low refrigerant charge</li> <li>Evaporator blower is not running                             <ul style="list-style-type: none"> <li>Check blower relay coil and contacts</li> <li>Check blower motor capacitor</li> <li>Check blower motor for failure or blockage</li> <li>Check evaporator blower wiring and connectors</li> <li>Check indoor blower control board</li> <li>Check thermostat wiring for open circuit</li> </ul> </li> <li>Evaporator coil is frozen                             <ul style="list-style-type: none"> <li>Check for low suction pressure</li> <li>Check for excessively low thermostat setting</li> <li>Check evaporator airflow (coil blockages or return air filter)</li> <li>Check ductwork or registers for blockage</li> </ul> </li> <li>Faulty metering device                             <ul style="list-style-type: none"> <li>Check TXV bulb installation (size, location and contact)</li> <li>Check if TXV/fixed orifice is stuck closed or defective</li> </ul> </li> <li>Condenser coil is dirty</li> <li>Liquid line restriction (filter drier blocked if present in system)</li> <li>Thermostat is malfunctioning                             <ul style="list-style-type: none"> <li>Check thermostat sub-base or wiring for short circuit</li> <li>Check thermostat installation (location, level)</li> </ul> </li> <li>Comfort Alert Module failure</li> </ol>
Yellow "ALERT" Flash Code 2	<b>System Pressure Trip</b> Discharge or suction pressure out of limits or compressor overloaded	<ol style="list-style-type: none"> <li>High head pressure                             <ul style="list-style-type: none"> <li>Check high pressure switch if present in system</li> <li>Check if system is overcharged with refrigerant</li> <li>Check for non-condensable in system</li> </ul> </li> <li>Condenser coil poor air circulation (dirty, blocked, damaged)</li> <li>Condenser fan is not running                             <ul style="list-style-type: none"> <li>Check fan capacitor</li> <li>Check fan wiring and connectors</li> <li>Check fan motor for failure or blockage</li> </ul> </li> <li>Return air duct has substantial leakage</li> <li>If low pressure switch present in system, check Flash Code 1 information</li> </ol>
Status LED	Status LED Description	Status LED Troubleshooting Information
Yellow "ALERT" Flash Code 3	<b>Short Cycling</b> Compressor is running only briefly	<ol style="list-style-type: none"> <li>Thermostat demand signal intermittent</li> <li>Time delay relay or control board defective</li> <li>If high pressure switch present, go to Flash Code 2 information</li> <li>If low pressure switch present, go to Flash Code 1 information</li> </ol>
Yellow "ALERT" Flash Code 4	<b>Locked Rotor</b>	<ol style="list-style-type: none"> <li>Run Capacitor has failed</li> <li>Low line voltage (contact utility if voltage disconnect is low)</li> <li>Excessive liquid refrigerant in compressor</li> <li>Compressor bearings are seized                             <ul style="list-style-type: none"> <li>Measure compressor oil level</li> </ul> </li> </ol>
Yellow "ALERT" Flash Code 5	<b>Open Circuit</b>	<ol style="list-style-type: none"> <li>Outdoor unit power disconnected</li> <li>Compressor circuit breaker or fuse(s) open</li> <li>Compressor contactor has failed open.                             <ul style="list-style-type: none"> <li>Check compressor contactor wiring and connectors</li> <li>Check for compressor contactor failure (burned, pitted or open)                                     <ul style="list-style-type: none"> <li>Check wiring and connection between supply and compressor</li> <li>Check for low pilot voltage at compressor contactor coil</li> </ul> </li> </ul> </li> <li>High pressure switch is open and requires manual reset</li> <li>Open circuit in compressor supply wiring or connections</li> <li>Unusually long compressor protector reset time due to extreme ambient temperature</li> <li>Compressor windings are damaged                             <ul style="list-style-type: none"> <li>Check compressor motor winding resistance</li> </ul> </li> </ol>
Yellow "ALERT" Flash Code 6	<b>Open Start Circuit</b>	<ol style="list-style-type: none"> <li>Run capacitor has failed</li> <li>Open circuit in compressor start winding or connections                             <ul style="list-style-type: none"> <li>Compressor start winding is damaged</li> <li>Check compressor motor winding resistance</li> </ul> </li> </ol>
Yellow "ALERT" Flash Code 7	<b>Open Run Circuit</b> Current only in start circuit	<ol style="list-style-type: none"> <li>Open circuit in compressor run wiring or connections                             <ul style="list-style-type: none"> <li>Check wiring and connectors between supply and the compressor "R" terminal</li> </ul> </li> <li>Compressor run winding is damaged                             <ul style="list-style-type: none"> <li>Check compressor motor winding resistance</li> </ul> </li> </ol>
Yellow "ALERT" Flash Code 8	<b>Welded Contactor</b>	<ol style="list-style-type: none"> <li>Compressor contactor has failed closed</li> <li>Thermostat demand signal not connected to module</li> </ol>
Yellow "ALERT" Flash Code 9	<b>Low Voltage</b> Control circuit < 17 VAC	<ol style="list-style-type: none"> <li>Control circuit transformer is overloaded</li> <li>Low line voltage (contact utility if voltage at disconnect is low)                             <ul style="list-style-type: none"> <li>Check wiring connections</li> </ul> </li> </ol>

*Flash Code number corresponds to a number of LED flashes, followed by a pause then repeated. TRIP and ALERT LED's flashing at the same time means control circuit voltage is too low for operation.*

**DAUGHTER BOARD TO FANCOIL TO GENERIC AC WIRING (REFER TO UNITS I/O MANUAL FOR SPECIFICS)**

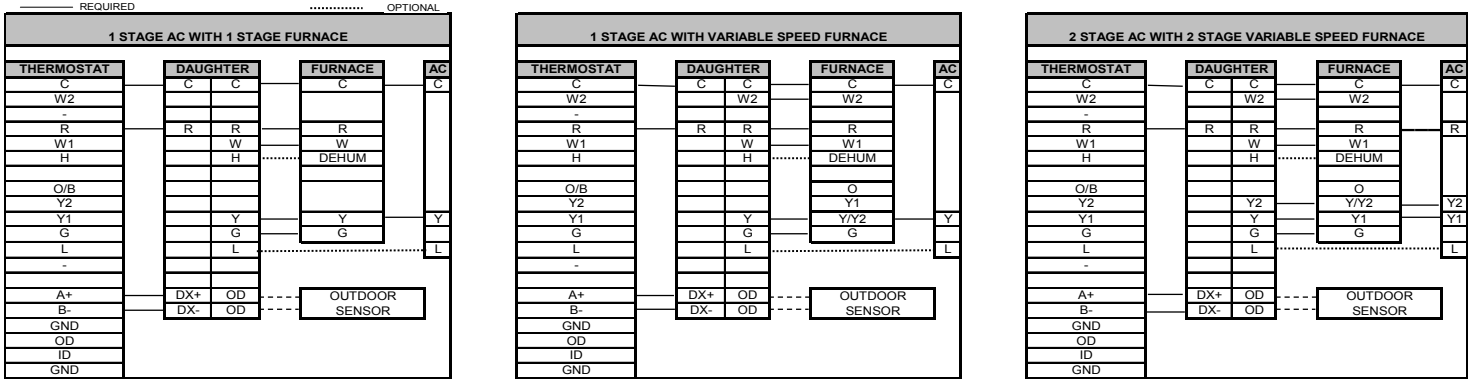


**DAUGHTER BOARD TO FANCOIL TO GENERIC HP WIRING (REFER TO UNITS I/O MANUAL FOR SPECIFICS)**



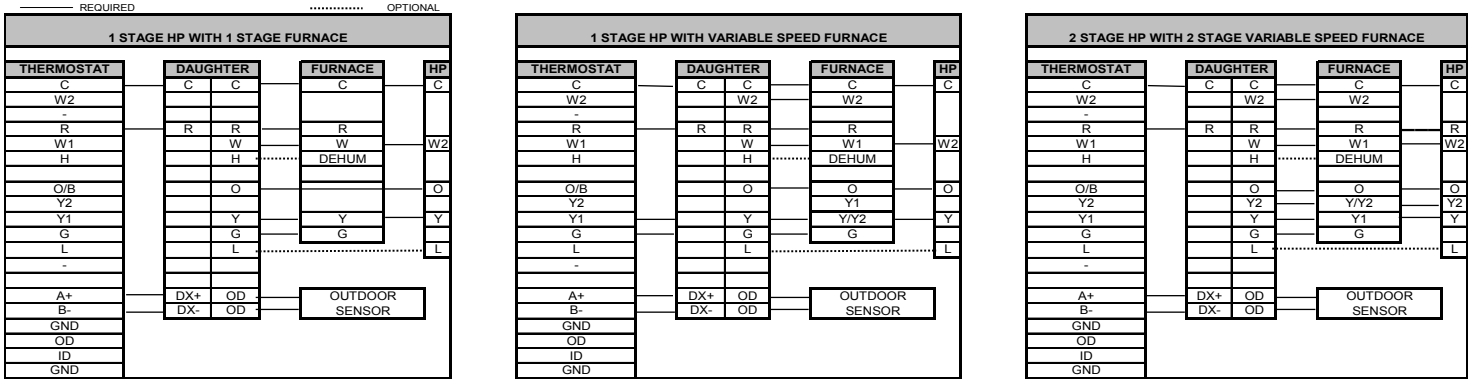
**Notes:**  
 The "L" Output from the Heat Pump or A/C Unit can be wired to either the NAXA00101DB Daughter Board or the TSTAT0406 or TSTAT0407 Thermostats for proper operation.  
 The Outdoor Sensor can be hooked directly to the NAXA00101DB Daughter Board or the TSTAT0406 or TSTAT0407 Thermostats for proper operation.  
 A pigtail wiring harness is supplied with the NAXA00101DB Daughter Board for connection to its "L" input.  
 A pigtail wiring harness is supplied with the NAXA00101DB Daughter Board for connection to its "OD" inputs.

**DAUGHTER BOARD TO FURNACE TO GENERIC AC WIRING (REFER TO UNITS I/O MANUAL FOR SPECIFICS)**



\*8MPV\* "C" SERIES OR NEWER  
 \*9MPV\* "D" SERIES OR NEWER

**DAUGHTER BOARD TO FURNACE TO GENERIC HP WIRING (REFER TO UNITS I/O MANUAL FOR SPECIFICS)**



\*8MPV\* "C" SERIES OR NEWER  
 \*9MPV\* "D" SERIES OR NEWER

**Notes:**  
 The "L" Output from the Heat Pump or A/C Unit can be wired to either the NAXA00101DB Daughter Board or the TSTAT0406 or TSTAT0407 Thermostats for proper operation.  
 The Outdoor Sensor can be hooked directly to the NAXA00101DB Daughter Board or the TSTAT0406 or TSTAT0407 Thermostats for proper operation.  
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 A pigtail wiring harness is supplied with the NAXA00101DB Daughter Board for connection to its "OD" inputs.

# NAXA00101DB Drill Template

Directions:

1. Cut Template out along dotted lines.
2. Tape template over the sheet metal area to be drilled.
3. Drill four holes using a #32 drill bit (.1160") through the four dark circles denoted on the template.
4. Remove the template from the drilled area.
5. Mount the NAXA00101DB Control with the four #6 sheet metal screws included in the kit.

Note:

- Ensure that are to be drilled is clear of any gas lines or wiring harnesses prior to drilling.

