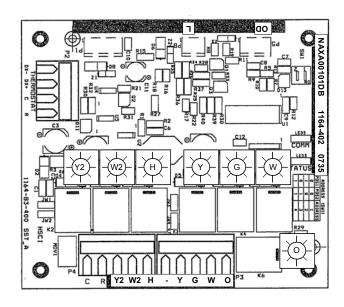


# Installation Instructions / User's Manual NAXA00101DB Communicating Daughter Board

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" "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

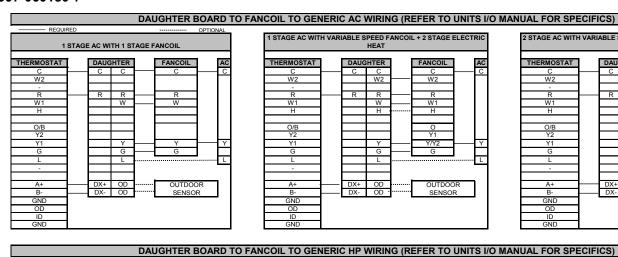
# "L" Input from Comfort Alert Module to Daughter Board

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 protector is open     Check for high head pressure
	compressor is not running.	Check compressor supply voltage
	,	Outdoor unit power disconnect is open
		<ol><li>Compressor circuit breaker or fuse(s) is open.</li></ol>
		Broken wire or connector is not making contact
		Low Pressure switch open if present in system     Compressor contactor has failed open.
Yellow "ALERT"	Long Run Time	Low refrigerant charge
Flash Code 1	Compressor is running	Evaporator blower is not running
	extremely long run cycles	Check blower relay coil and contacts
		Check blower motor capacitor     Check blower motor for failure or blockage.
		Check blower motor for failure or blockage     Check evaporator blower wiring and connectors
		Check indoor blower control board
		Check thermostat wiring for open circuit
		Evaporator coil is frozen
		Check for low suction pressure     Check for excessively low thermostat setting
		Check evaporator airflow (coil blockages or return air filter)
		Check ductwork or registers for blockage
		Faulty metering device
		Check TXV bulb installation (size, location and contact)     Check if TXV/fixed orifice is stuck closed or defective
		Condenser coil is dirty
		Liquid line restriction (filter drier blocked if present in system)
		Thermostat is malfunctioning
		Check thermostat sub-base or wiring for short circuit     Check thermostat installation (legation level)
		Check thermostat installation (location, level)     Comfort Alert Module failure
Yellow "ALERT"	System Pressure Trip	High head pressure
Flash Code 2	Discharge or suction	Check high pressure switch if present in system
	pressure out of limits or	Check if system is overcharged with refrigerant
	compressor overloaded	Check for non-condensable in system     Condenser coil poor air circulation (dirty, blocked, damaged)
		Condenser con poor an circulation (dirty, blocked, damaged)     Condenser fan is not running
		Check fan capacitor
		Check fan wiring and connectors
		Check fan motor for failure or blockage
		Return air duct has substantial leakage     If low pressure switch present in system, check Flash Code
		1 information
Status LED	Status LED	Status LED Troubleshooting Information
Valley, "ALEDT"	Description	4. The second decreased circuit interestitles.
Yellow "ALERT" Flash Code 3	Short Cycling Compressor is running	Thermostat demand signal intermittent     Time delay relay or control board defective
114611 6646 6	only briefly	If high pressure switch present, go to Flash Code 2
		information
		If low pressure switch present, go to Flash Code 1
Yellow "ALERT"	Locked Rotor	information  1. Run Capacitor has failed
Flash Code 4	LOCKED NOIOI	Low line voltage (contact utility if voltage disconnect is low)
		Excessive liquid refrigerant in compressor
		Compressor bearings are seized
Male Total	1	Measure compressor oil level
Yellow "ALERT" Flash Code 5	Open Circuit	Outdoor unit power disconnected     Compressor circuit breaker or fuse(s) open
. Iddit code o		Compressor contactor has failed open.
		<ul> <li>Check compressor contactor wiring and connectors</li> </ul>
		Check for compressor contactor failure (burned, pitted or
		open)  Chock wiring and connection between supply and
		Check wiring and connection between supply and compressor
		Check for low pilot voltage at compressor contactor coil
		<ol> <li>High pressure switch is open and requires manual reset</li> </ol>
		Open circuit in compressor supply wiring or connections
		Unusually long compressor protector reset time due to     extreme ambient temperature
		extreme ambient temperature 7. Compressor windings are damaged
		Check compressor motor winding resistance
Yellow "ALERT"	Open Start Circuit	Run capacitor has failed
Flash Code 6		Open circuit in compressor start winding or connections     Compressor start winding is damaged
		<ul> <li>Compressor start winding is damaged</li> <li>Check compressor motor winding resistance</li> </ul>
		22 compressed mote. Inflaming resistance
Yellow "ALERT"	Open Run Circuit	Open circuit in compressor run wiring or connections
Flash Code 7	Current only in start	Check wiring and connectors between supply and the
	circuit	compressor "R" terminal 2. Compressor run winding is damaged
		Compressor run winding is damaged     Check compressor motor winding resistance
Yellow "ALERT"	Welded Contactor	Compressor contactor has failed closed
Flash Code 8		Thermostat demand signal not connected to module
Yellow "ALERT"	Low Voltage	Control circuit transformer is overloaded     Leveling voltage (control utility if voltage at disconnect is
Flash Code 9	Control circuit < 17 VAC	Low line voltage (contact utility if voltage at disconnect is low)
	VAO	Check wiring connections
		<b>3</b>

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.



THERMOSTAT					
	DAUG	HTER	1 1	FANCOIL	(
C -	С	С		С	——[C
W2		W2		W2	
-					
R -	 R	R		R	
W1		W		W1	
Н		H ·		Н	
0.15					
O/B Y2				<u>0</u> Y1	
Y1		Y		Y/Y2	<u> </u>
G		G		G F/12	<b>—</b>
ı		ı		G	l L
-					
A+	DX+	OD	lı	OUTDOO	ND.
B-	DX-	OD .		SENSO	
GND	DX-	JD		SENSU	11
OD					
ID					

STAGE AC WITH	VARIA		PEED F HEAT	ANCO	L + 2 STAGE E	LECTRIC
THERMOSTAT		DAUG	HTER	1	FANCOIL	AC
С		С	С		C -	— с
W2			W2		W2	
-						
R		R	R		R -	R
W1			W		W1	
Н			Ξ		Н	
O/B					0	
Y2			Y/Y2	<b>—</b>	Y/Y2	Y2
Y1			Υ	_	Y1 -	Y1
G			G	<b>—</b>	G	
L			L			
-				1		
				1		
A+		DX+	OD		OUTDOOF	₹ .
B-		DX-	OD		SENSOR	
GND						
OD						
ID						
GND						

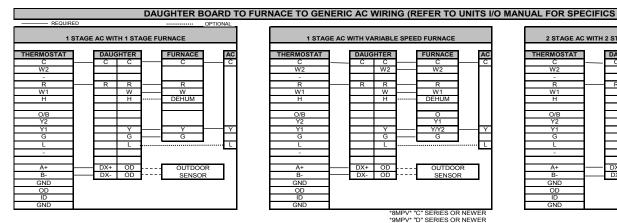
				DAU	GHTER	BOARD
REQUI	RED			·		OPTIONAL
1 STAGE HP WI	TH 1 S	TAGE F	ANCOII	L + 1 ST	AGE ELECT	RIC HEAT
THERMOSTAT	I	DAUG	HTER	1 [	FANCOIL	HP
С	}	C	С	$\mathbf{I}$	С	— с
W2	]		W2			1
-						
R	_	R	R	-	R	1 L
W1	]		W	JL	W	W2
Н	1			1 1		
O/B	-		O/B ·			0
Y2	1		O/B			1 –
Y1	1		Y		Y	Y
G	1		G		Ğ	1 Ի
Ť	1		Ť	<u> </u>		
	1					
	1			1		
A+	1	DX+	OD		OUTDO	OR
B-	<b>├</b> ─	DX-	OD		SENSO	DR .
GND	]					
OD	]					
ID	]					
GND						
Notes:					or A/C	
	The O	utdoor S	Sensor o	an be he	oked directly	v to the NAX

1 STAGE HP WIT	'H VAR	IABLE S	PEED F	ANCOI	L +2 STAGE E	LECTRIC
THERMOSTAT		DAUG	HTER	1 1	FANCOIL	HE
С		С	С		С	— с
W2			W2		W2	
- R		_	R		R	
W1		R	W		W1	W
H		-	H		H	VV
				1	- "	
O/B			O/B		0	c
Y2				1	Y1	
Y1			Υ	1	Y/Y2	Y
G			G	<del></del>	G	
L			L	ļ		L
-						
				1.		
A+		DX+	OD		OUTDOO	
B-		DX-	OD .	1	SENSOR	
GND						
OD						
ID						
GND r the NAXA00101						

2 STAGE HP WITH	I VARI		PEED F HEAT	ANCO	L + 2 STAGE EI	LECTRIC
THERMOSTAT		DAUG	HTER		FANCOIL	HP
С		C	С	<del>                                     </del>	С –	— с
W2			W2		W2	
-						
R		R	R	<u> </u>	R -	R
W1			W	J	W1 -	W2
Н			Ι		Н	
O/B			O/B	<u> </u>	0	— о
Y2				_	Y/Y2	Y2
Y1			Υ		Y1 -	Y
G			G	_	G	
L			L			L
-						
A+		DX+	OD		OUTDOOR	}
B-		DX-	OD		SENSOR	
GND						
OD						
ID						
GND						

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 Thermostat The Outdoor Sensor can be hooked directly to the NAXA00101DB Daughter Board or the TSTAT0406 or TSTAT0407 Thermostats for proper operation. A pigtall wiring harness is supplied with the NAXA00101DB Daughter Board for connection to its "L" input.

A pigtall wiring harness is supplied with the NAXA00101DB Daughter Board for connection to its "OD" inputs.



THERMOSTAT		DAUG	HTER		FURNACE	1
C .		С	С	<b>└</b>	С	
W2			W2	<b>└</b>	W2	
-						1 1
R	—F	R	R	1—	R	1 1
W1			W		W1	
Н			Н	]	DEHUM	
O/B					0	
Y2					Y1	
Y1			Υ		Y/Y2	<b>—</b> Г
G			G	_	G	1 [
L			L	ļ		
-				1		-
				1		
A+	—	DX+	OD	1	OUTDO	OR
B-	—F	DX-	OD	1	SENSO	R
GND				•		
OD						
ĪD						

2 STAGE AC	WITH	2 STAG	E VAR	IABLE :	SPEED FURN	ACE
THERMOSTAT		DAUG	HTER	L	FURNACE	AC C
W2		Ě	W2	<del> </del>	W2	
- R W1	_	R	R		R W1	R
H			H		DEHUM	1
O/B Y2			Y2		O Y/Y2	Y2
Y1			12 Y		Y1	12 Y1
G			G	_	G	! <u></u>
-			L			<u>L</u>
A+		DX+	OD		OUTDOO	
B- GND		DX-	OD	h	SENSO	R
OD						
ID GND						
GND			*8	MPV* "	C" SERIES OF	R NEWER
			*9	MPV* "	D" SERIES OF	R NEWER

		DAUGHTER BO	ARD TO F	LIRNACE TO GENE		REFER TO LINITS I/C	MANUAL FOR SPECIFICS
REQUIR	ED.		PTIONAL	ORNAGE TO GENE	-1410 111 111111111111111111111111111111	KEI EK 10 OM110 I/C	MANUAL I OR OI LOII 100
	STAGE HP WITH 1 STA			1 STAGE	HP WITH VARIABLE SPE	ED FURNACE	2 STAGE HP WITH 2 STA
THERMOSTAT  C W2 - R W1 H O/B Y2 Y1 G L - A+ B- GND OD ID GND	DAUGHTER   C   C   C   C   C   C   C   C   C	FURNACE C R W DEHUM Y G OUTDOOR SENSOR		THERMOSTAT  C  W2  R  W1  H  O/B  Y2  Y1  G  L  A+  B-  GND  OD  ID  GND	DX+ OD DX- OD	FURNACE C C W2 R W1 DEHUM O O Y1 Y1 YY2 G C OUTDOOR SENSOR  C'SERIES OR NEWER	THERMOSTAT C W2 R R W1 H O/B Y2 Y1 G G L A+ B- GND OD ID GND

1 STAG	1 STAGE HP WITH VARIABLE SPEED FURNACE											
THERMOSTAT		AUGH	ITED		FURNACE	HP						
C		C	C		C							
		U										
W2	_	_	W2		W2							
	_											
R		R	R		R							
W1			W		W1	W2						
H			Н		DEHUM							
O/B			0		0							
Y2					Y1	1						
Y1			Υ		Y/Y2	Y						
G			G		G	1 —						
ĭ		-+	ĭ									
-	_					······						
-		-										
	_											
A+		X+	OD		OUTDO							
B-		)X-	OD		SENSO	R						
GND						- 1						
OD												
ID												
GND												
			*8	MPV* "(	C" SERIES OI	R NEWER						

2 STAGE HP	WITH	2 STAG	E VAR	ABLE	SPEED FURN.	ACE	
THERMOSTAT		DALIC	HTER		FURNACE	1	HP
C					C		
		С	C				С
W2			W2		W2		
- R		R	R		R		_
		ĸ	W				R W2
W1					W1		VV 2
Н			Н		DEHUM		
							L
O/B			0		0		0
Y2			Y2		Y/Y2		Y2
Y1			Υ		Y1		Υ
G			G		G		
L			L.				L
-							
A+	-	DX+	OD		OUTDOO	)R	1
B-		DX-	OD		SENSO	R	
GND	l '						•
OD							
ID							
GND							

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

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

"#MPV\* "C" SERIES OR NEWER

The "L" Output from the Heat Pump or A/C Unit can be wired to either the NAXA00101DB Daughter Board or the TSTAT0405 or TSTAT0407 Thermostats for proper operation.

The Outdoor Sensor can be hooked directly to the NAXA00101DB Daughter Board or the TSTAT0407 Thermostats for proper operation.

A pigtall wiring harness is supplied with the NAXA00101DB Daughter Board for connection to its "L" input.

A pigtall wiring harness is supplied with the NAXA00101DB Daughter Board for connection to its "OD" inputs.

Notes:

# **NAXA00101DB Drill Template**

# Directions:

- 1. Cut Template out along dotted lines.

- Tape template out along dotted lines.
   Tape template over the sheet metal area to be drilled.
   Drill four holes using a #32 drill bit (.1160") through the four dark circles denoted on the template.
   Remove the template from the drilled area.
   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.



