

Technical Service Bulletin:

Rev B Furnace: “nL” Status Code

Models: Bosch BGH96 (96% Condensing Gas Furnace)



BOSCH



WARNING:

These instructions are intended to provide technical guidance to a professional who is qualified to work on gas furnace products and 120vac electrical components. If you are not qualified to work on such equipment, please obtain the services of such a professional.

Impacted Models

Part Number	Bosch Model
7738007227	BGH96M060B3B
7738007228	BGH96M080B3B
7738007229	BGH96M080C4B
7738007230	BGH96M100C5B
7738007231	BGH96M100D5B
7738007232	BGH96M120D5B

Table 1 Impacted Models



Figure 1 Bosch BGH96 96% Condensing Gas Furnace Rev B

Background

“nL” code indicates the furnace is receiving abnormal signals from the thermostat, this is typically due to incorrect wiring or settings of the thermostat.

The Rev B furnace considers these 2 scenarios as abnormal signals from the thermostat:

- ▶ G call during heating operation
- ▶ Not having a G call during cooling operation

If a Rev B furnace **receives** a G call during heating operation or if it **does not receive** a G call during cooling operation, the furnace will have a nL code, but will continue to operate normally.

See table 2 for common nL code scenarios, where the unit will operate normally.

Y1	Y2	W1	W2	G	Signal status	Unit Reaction
x	x	YES	x	YES	Abnormal signal and display “nL”	Turn on gas furnace 1st stage for heating
x	x	YES	YES	YES	Abnormal signal and display “nL”	Turn on gas furnace 2nd stage for heating
YES	x	x	x	x	Abnormal signal and display “nL”	Cooling with low fan speed
YES	YES	x	x	x	Abnormal signal and display “nL”	Cooling with high fan speed

Table 2 Common nL code scenarios

Field Action



To avoid an nL code display on the furnace, ensure the thermostat wiring and settings are set up correctly through the following steps.

Step 1: Confirm the Thermostat wirings are as follows:

The thermostat and furnace should follow the below wiring diagrams, depending on the application type.

Furnace only application

- Wiring with 4H/2C thermostat – Bosch BCC100 for example.

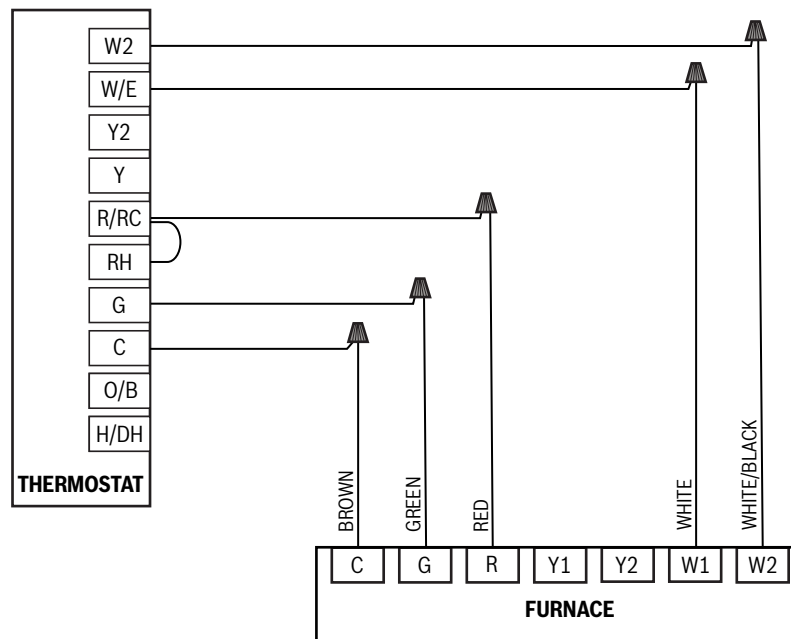


Figure 2 4H/2C Thermostat - BCC100 Wiring Detail

Normal Signals			
W1	W2	G	Unit Reaction
X	X	X	Standby
X	X	YES	Only fan is on
YES	X	X	1st Stage Heating
YES	YES	X	2nd Stage Heating

Table 3 Normal Signals

b. Wiring with 3H/2C thermostat – Bosch BCC50 for example.

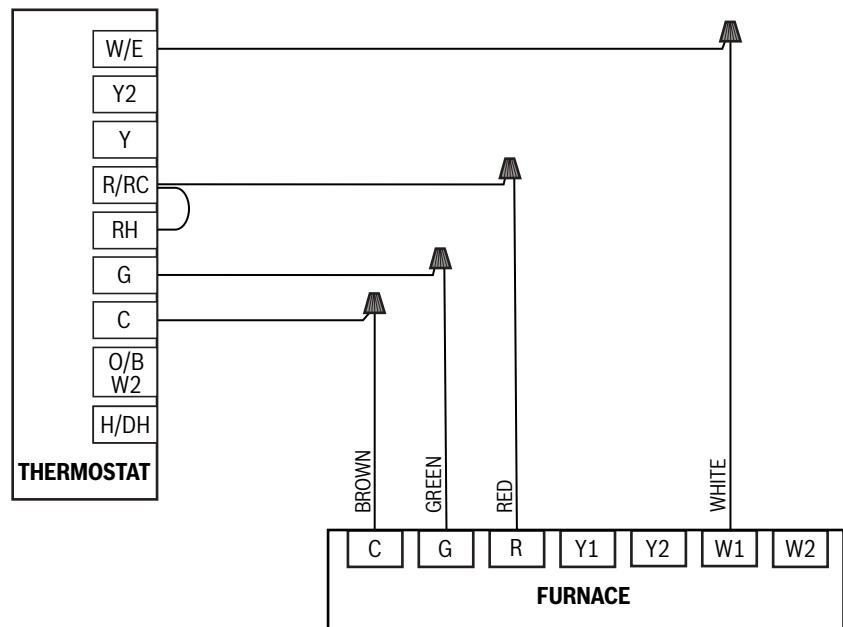


Figure 3 3H/2C Thermostat – Bosch BCC50 Wiring Detail

i When using a single-stage thermostat, the fan stage will be controlled via Dip Switch SW1 on the board, and second stage heat is energized based off of the delay timer.

Normal Signals			
W1	W2	G	Unit Reaction
X	X	X	Standby
X	X	YES	Only fan is on
YES	X	X	1st Stage Heating

Table 4 Normal Signals

Dual Fuel application

- a. Wiring with 4H/2C thermostat – Bosch BCC100 for example.

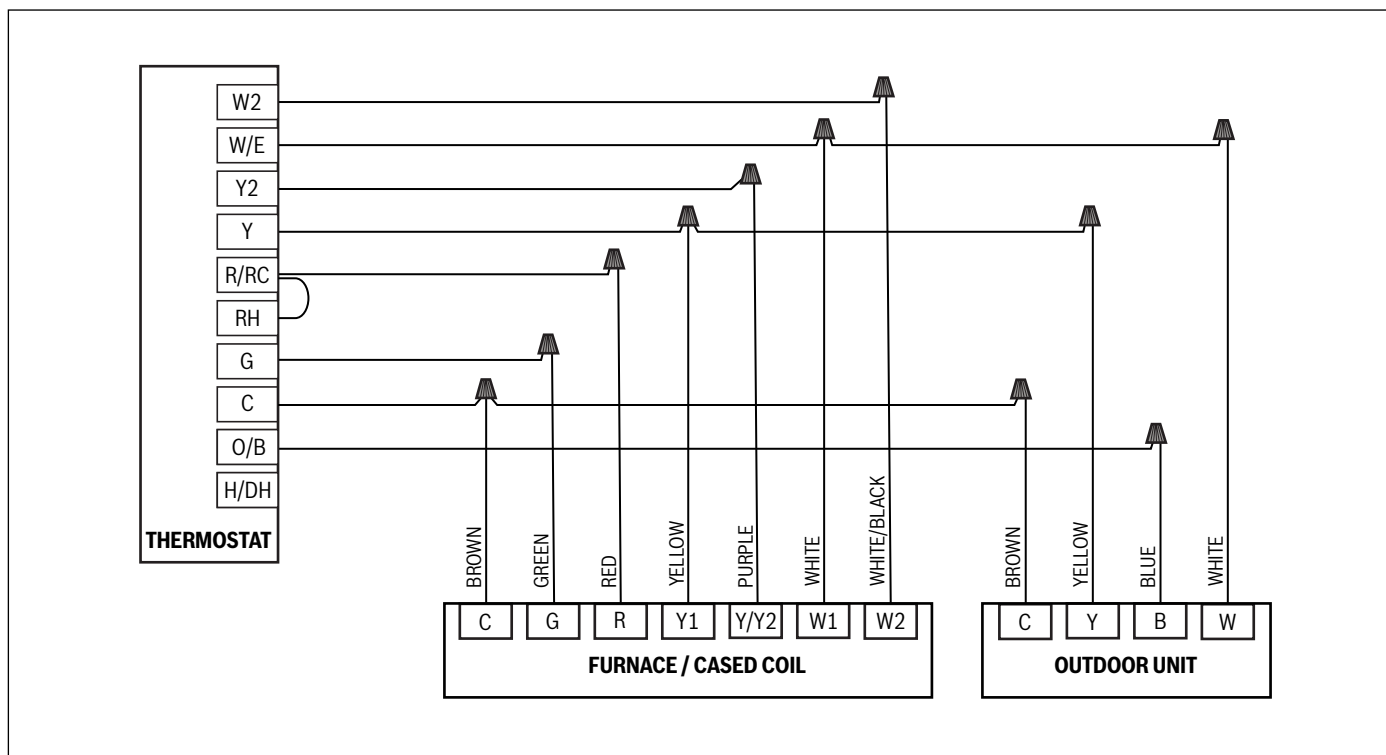


Figure 4 4H/2C Thermostat - BCC100 Wiring Detail

Normal Signals					Unit Reaction
Y1	Y2	W1	W2	G	
x	x	x	x	x	standby
x	x	x	x	YES	only fan is on
x	x	YES	x	x	turn on gas furnace 1st stage for heating
x	x	YES	YES	x	turn on gas furnace 2nd stage for heating
YES	x	x	x	YES	Cooling with low fan speed
YES	x	YES	x	YES	turn on 1st stage for heating (enter defrost logic)
YES	x	YES	YES	YES	turn on 2nd stage for heating (enter defrosting logic)
YES	YES	x	x	YES	Cooling with high fan speed
YES	YES	YES	x	YES	turn on 1st stage for heating (enter defrost logic)
YES	YES	YES	YES	YES	turn on 2nd stage for heating (enter defrosting logic)

Table 5 Normal Signals

- b. Wiring with 3H/2C thermostat – Bosch BCC50 for example.

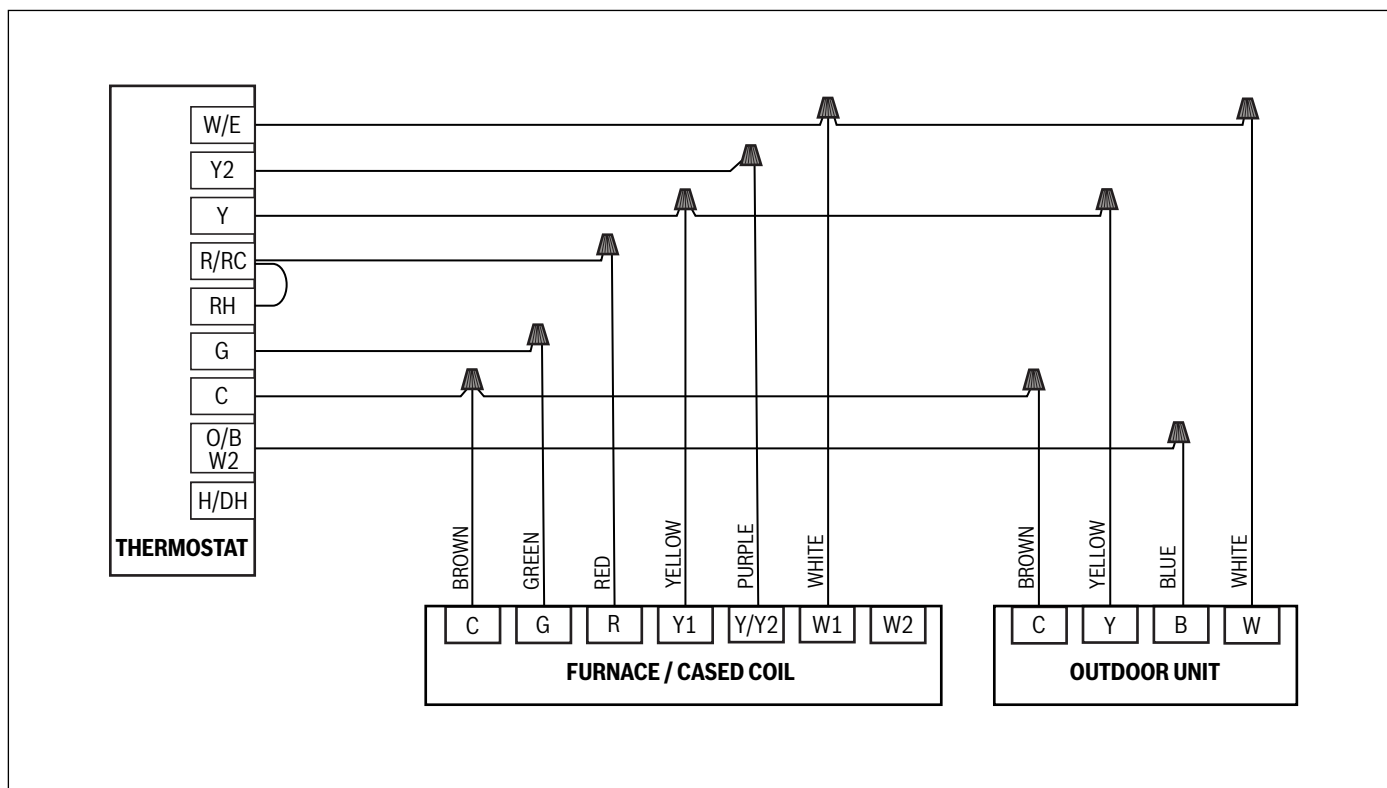


Figure 5 3H/2C Thermostat – Bosch BCC50 Wiring Detail



When using a single-stage thermostat, the fan stage will be controlled via Dip Switch SW1 on the board, and second stage heat is energized based off of the delay timer.

Normal Signals					Unit Reaction
Y1	Y2	W1	W2	G	
x	x	x	x	x	standby
x	x	x	x	YES	only fan is on
x	x	YES	x	x	turn on gas furnace 1st stage for heating
YES	x	x	x	YES	Cooling with low fan speed
YES	x	YES	x	YES	turn on 1st stage for heating (enter defrost logic)
YES	YES	x	x	YES	Cooling with high fan speed
YES	YES	YES	x	YES	turn on 1st stage for heating (enter defrost logic)

Table 6 Normal Signals

Step 2: Confirm the Thermostat settings are correct.

The thermostat should be set to **Appliance Fan** Control to avoid sending a G signal in heating mode, thus eliminating the “nL” code. If the Fan Control logic is set to Thermostat control, the G signal will be sent along with the W call resulting in a “nL” code.

- a. The Thermostat should be set to either Fossil Fuel or Dual Fuel.

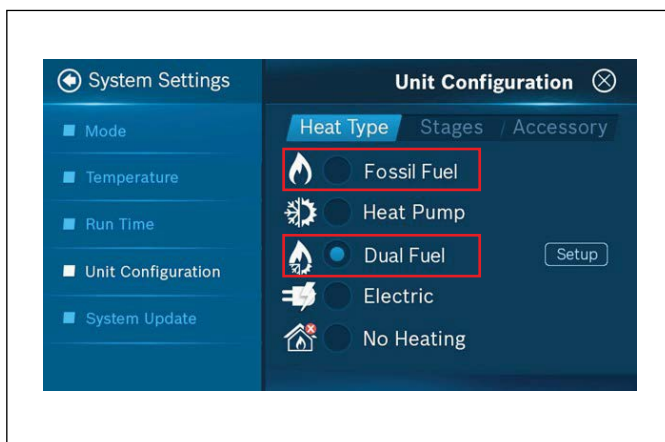


Figure 6 Thermostat Heat Type Setting

- b. The Fan control logic should be set to “Appliance” control.

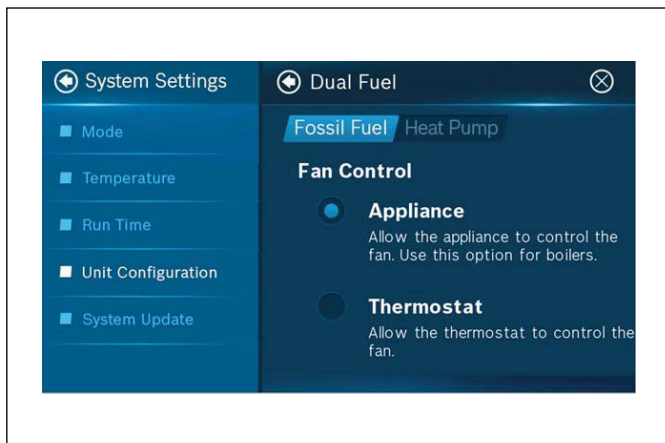


Figure 7 Thermostat Fan Control Setting



If you have any questions regarding the information provided in this document, please contact our Technical Support team by phone at 1-800 283 3787, or via email at ac.techsupport@us.bosch.com.



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Bosch Thermotechnology Corp.
65 Grove Street
Watertown, MA 02472
Tel: 1-866-642-3198
Fax: 1-954-776-5529
www.bosch-thermotechnology.us