

SERVICE AND APPLICATION NOTES

Recommendation for Use of Shielded Cable for Communication Wiring in Residential Communicating Systems

Affected Product:

All Communicating Equipment – S30 and E30 Thermostats, iHarmony Zoning Systems, PCO3S and Indoor and Outdoor Lennox communicating equipment.

Issue:

Lennox has received reports of the potential for Intermittent, or continuous, communication issues between any of the components that make up a residential communicating system.

Description of Issue:

We have received several reports of issues with running 18 AWG, 4-conductor thermostat cable to all Lennox communicating connection points. Many times the thermostat wire will have induced voltage from one wire to another or from high voltage electrical devices causing equipment connection and system operational issues. This has caused an increase in warranty returns for good controls and customer dissatisfaction.

Short Term:

We are adding communicating wiring recommendations to all our communicating product installation instructions and service manuals. We are working on stocking an 18-gauge one-pair shielded communication wire in our Lennox Store warehouses soon.

Long Term:

Continued testing is being done to reduce the need for shielded cable for communication wiring in all Lennox communicating systems.

Recommendations:

- Use an 18 to 22-gauge one pair shielded cable wiring, with ground, for all communication (i+/i- & A/B) wiring. Connect the ground wire to indoor unit's "C" terminal. See "Table 1. E30 Terminal Designations and Wiring Recommendations" on page 2 and "Table 2. S30 Terminal Designations and Wiring Recommendations" on page 2.
- Use standard 18/2 thermostat wire for all low voltage wiring in a communicating system (R-C & +/-).

Summary:

While there are thousands of communicating systems installed today working fine using standard 18-AWG thermostat wire for communication, this new recommendation is being made to help avoid any potential communication issues caused by interference from outside sources.

Table 1.	E30	Terminal	Designations	and Wiring	Recommendations
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Table 2. S30 Terminal Designations and Wiring Recommendations

Terminal Designation	Description	Thermostat Wiring	
R	24VAC input	18AWG unshielded	
С	24VAC return		
+	RS-BUS I+	- 18 - 22AWG shielded (recommended)	
I-	RS-BUS I-		
ACC1	Accessory 1 and 2 (typically can be used for 1 or 2	18AWG unshielded	
ACC2	speed ventilators and fresh air damper)		
+	12VDC output	18AWG unshielded	
-	12VDC return		
А	Communications bus A	18 - 22AWG shielded (recommended)	
В	Communications bus B		

