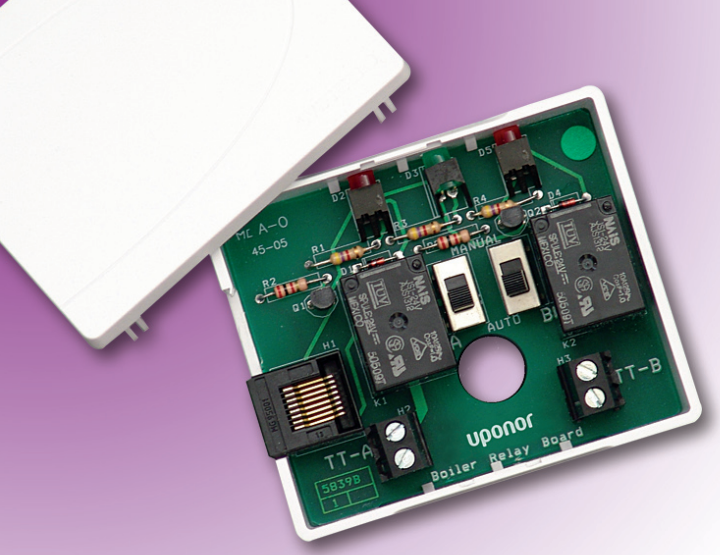

RADIANT HEATING SYSTEMS

UPONOR CLIMATE CŎNTROL™ NETWORK SYSTEM BOILER RELAY

INSTRUCTION SHEET

Network Boiler Relay

The Boiler Relay (A9012010) is used on any boiler or heating device requiring a dry-contact input to start the heat demand. This control is compatible with the Uponor Climate Cŏntrol™ Multifunction unit and Uponor Climate Cŏntrol™ Controller Network System.

The Boiler Relay contains two dry contacts (labeled "A" and "B" terminals):

- The "A" terminal is always used to start the heating device.
- The "B" terminal can be used in two ways:
  - To provide a high temperature override or domestic hot water
  - To start the second stage of boiler with a two-stage firing control

Getting Started

Check the contents of this package. If the contents are damaged, please contact your Uponor sales representative or distributor for assistance.

The package includes:

- Network Boiler Relay (A9012010)

Tools and Parts Required

- RJ45 crimper and connectors
- Cable tester
- Wire cutter and stripper
- Small-blade screwdriver

Installation

Mounting the Unit

Mount the relay control directly to a boiler (see **Figure 1**) or a separate electrical box using a standard ½-inch conduit hub (see **Figure 2**).

Figure 1: Boiler Mounting

Figure 2: Electrical Box Mounting

Caution: Before performing any wiring, disconnect the electrical power to the system to prevent electrical shock and damage to the device.

Note: Ensure all wiring complies with local electrical codes.

Communication Cable

The Boiler Relay connects a heating device to the operating control via a single RJ45-terminated Cat5e cable. The boiler relay control can be used on either of the Uponor control systems, Multifunction or Network, as follows.

- **Uponor Climate Cŏntrol Multifunction Controller**
  The boiler relay controls connect to Ports 1 and 2 (only) on the right side of the Multifunction control.
- **Uponor Climate Cŏntrol Network System**
  The boiler relay controls connect to TT ports 1 through 5 on the right side of the Primary Equipment Control (A9012000).

Refer to Appendix D in the Uponor Climate Cŏntrol Network System Manual for more information about making Cat5e patch cables.

Boiler Functionality and Wiring

The available options for both control systems are shown in **Table 1.**

Function	Climate Cŏntrol Multifunction	Climate Cŏntrol Network System
Simple On/ Off control	A-terminal	A-Terminal
Space heat with high temp override	A-terminal: Space heating B-terminal: High temp	A-terminal: Space heating B-terminal: High temp
Two-stage control	Future release	A-terminal: first stage B-terminal: second stage
Modulation control, 0-10v	Future release	Use part number A9012020

Table 1: Functionality and Wiring for Climate Cŏntrol Systems

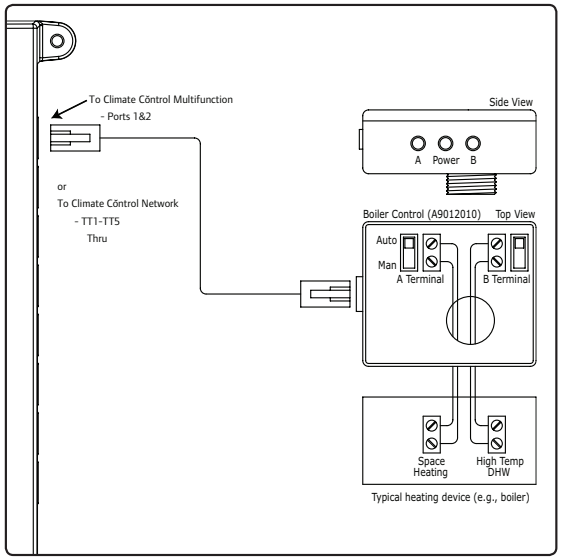

Figure 2: Typical Wiring

The Boiler Relay functions are as follows.

- **Simple On/Off Control** — Both control systems close A-terminal or contact (dry) on the Boiler Relay to start the heating device. If a modulating, high efficiency boiler is used, the boiler's internal settings will control the water temperature.
- **Space heat with high temperature override —** Both of the control systems close the A-terminal or contact (dry) on the Boiler Relay to start the call for space heating. Typical modulating, high efficiency boilers come with an additional set of contacts to call for high temperature (e.g., domestic hot water) and should be wired to the B-terminal.
- **Two-stage control** — Currently, only the Climate Cŏntrol Network System supports two-stage boilers. The A-terminal controls the first stage, and the B-terminal activates the second stage. The Network System supports a maximum of two (2) two-stage boilers in any system. Connect the first boiler to the TT1/TT2 port and the second Boiler Relay (if used) for the second boiler to TT3/TT4 port on the Primary Equipment Control.
- **Modulating control, 0-10v —** See the instruction sheet for the Network Modulating Boiler Relay (A9012020).

Wiring the Boiler Relay to the Heating Device

Refer to the following instructions to wire the boiler (see **Figure 2**).

1. Squeeze the long sides of the cover to remove the cover from the Network Boiler Relay.
2. Using 18-2 LVT wire, connect the TT-A terminal in the Network Boiler Relay to the input terminal for the first (or only) stage in the boiler.
3. If controlling a second stage, connect TT-B to the second-stage input in the boiler.

Note: If the boiler-operating control allows, TT-B can also signal a high-temperature or domestic hot water demand.

Manual Switches

The Boiler Relay contains individual (A and B) manual switches inside the top cover. These switches can be used for starting a space heat, high temperature override, stages, etc. without having the relay box connected to the main control (Multifunction or Network).

Indicators and Specifications

Indicator	Definition
TT-A Active	Illuminates to signal that the TT-A contact is active
TT-B Active	Illuminates to signal that the TT-B contact is active **Note:** When using single-stage boilers, the TT-B Active indicator illuminates whenever the second boiler's TT-A is running. This is normal.
Power	Illuminates when the control receives power via the Cat5e cable from the Primary Equipment Control

Table 2: Indicator Definitions

Note: The TT-A and TT-B Active LEDs will NOT light up when the manual switches are set to the MAN (manual) position, but the relays will close.

Specifications

Storage Temperature:
14 to 160°F (-10 to 70°C)

Operating Temperature:
32 to 105°F (0 to 40°C)

% Relative Humidity:
10 to 90% non-condensing

Contact Rating:
120VAC, 2 A maximum

Uponor, Inc.
5925 148th Street West
Apple Valley, MN 55124 USA
Phone: (800) 321-4739
Fax: (952) 891-2008
www.uponor-usa.com

Uponor Ltd.
655 Park Street
Regina, SK S4N 5N1 CANADA
Phone: (888) 994-7726
Fax: (800) 638-9517
www.uponor.ca

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