

Zio™ LCD Wall Modules

TR70 AND TR70-H with Sylk™ bus

INSTALLATION INSTRUCTIONS



PRODUCT DESCRIPTION

The TR70 and TR70-H are 2-wire, non-polarity sensitive, Sylk bus communicating wall modules, which communicate with Spyder™ (PUL6438S, PVL6436AS, and PVL6438NS models only) and ComfortPoint™ (CP-UL6438S, CP-VL6436AS, and CP-VL6438NS models only) programmable controllers.

All models have a space-temperature sensor, network bus jack, and an LCD panel with three softkeys and two Up/Down adjustment keys. The TR70-H model includes an onboard humidity sensor.

NOTES:

1. Refer to the *Zio™ LCD Wall Modules TR70 and TR70-H with Sylk™ bus – Specification Data*, form 63-1322, for specific model features and additional information.
2. Refer to the *Zio™ LCD Wall Modules TR70 and TR70-H with Sylk™ bus – Operating Guide* (form 63-2667) for information about customizing the wall module configuration, such as modifying the default Home screens or creating your own application.

FEATURES

The TR70 and TR70-H wall modules include:

- **Ability to control user access to controller parameters.**

- Customized parameter access, by using the Tridium Niagara Workbench tool.
- Programmable for: home screen options, tenant access, contractor access, access to controller parameters, setpoint, override, fan, and other parameters.
- Eight pre-programmed applications (e.g. VAV with balancing) in the wall module configuration tool.
- Ability to access and adjust most parameters in the programmable controller (except Scheduling).
- Ability to balance the VAV system from the wall module.
- Home screen can display one to three of any of the following parameters: temperature setpoint, room temperature, room humidity, outdoor humidity, outdoor temperature, and time, or one of virtually any parameter in the controller.
- Network bus jack.
- Simple 2-wire terminal connection to the programmable controller and an optional 2-wire terminal connection for the network. All connections are polarity insensitive.
- Retention of user configuration, including setpoints after a power outage.

SPECIFICATIONS

Models: TR70 and TR70-H, which includes an onboard humidity sensor. For additional model specification information, refer to the *Zio™ LCD Wall Modules TR70 and TR70-H with Sylk™ bus – Specification Data*, form 63-1322.

Environmental Ratings:

- Operating Temperature: 30°F to 110°F (-1°C to 43°C)
- Shipping Temperature: -40°F to 150°F (-40°C to 65.5°C)
- Relative Humidity: 5% to 95% non-condensing

Accessories:

50007298-001 (pack of 12) medium, cover plate; 6-7/8 x 5 in. (175 x 127 mm).

Approvals: CE; UL94-HB plastic enclosure; FCC Part 15, Class B



62-0271-03

Communications

The wall modules use a sensor bus (S-BUS) for communications with the programmable controller. Wire the two S-BUS terminals according to these installation instructions.

The wall modules have a network bus port for LONMARK® communications. If network communication is needed, connect the building LON network wires to the two terminals (NET-1 and NET-2), according to these installation instructions. A network bus port is accessible at the bottom of the wall module by removing the jack plug. See Fig. 1.

The network bus and S-BUS terminals (see Fig. 6 on page 4) are insensitive to polarity, minimizing installation errors due to mis-wiring. The recommended wire size for the network bus and S-BUS is Level IV, 22 AWG (0.33 sq. mm) plenum or non-plenum rated, unshielded, twisted pair, solid conductor wire.

BEFORE INSTALLATION

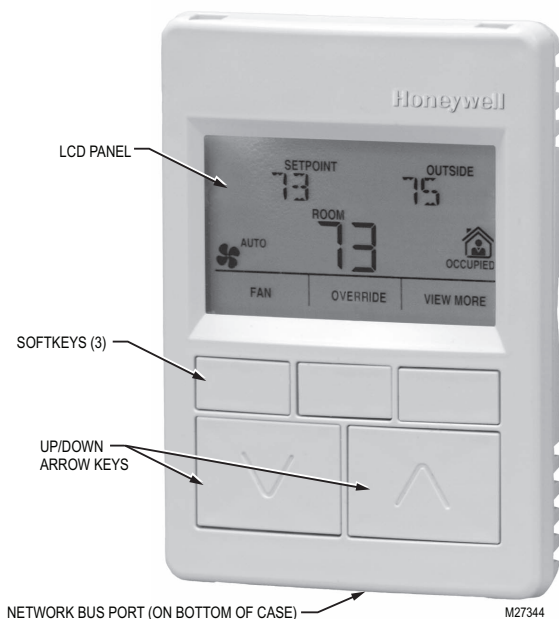


Fig. 1. LCD Wall Module features.

CAUTION

Erratic System Operation Hazard.

Failure to follow proper wiring practices can introduce disruptive electrical interference (noise). Keep wiring at least one foot away from large inductive loads such as motors line starters, lighting ballasts, and large power distribution panels. Shielded cable is required in installations where these guidelines cannot be met. Ground the shield only to the grounded controller case.

IMPORTANT

All wiring must comply with local electrical codes and ordinances or as specified on installation wiring diagrams.

- Wall module wiring can be sized from 18 to 24 AWG (0.82 to 0.20 sq. mm), depending on the application.
- For S-BUS wiring, the LCD wall modules may be mounted up to 200 ft. (61 m) from the programmable controller.
- Twisted pair wire is recommended for wire runs longer than 100 ft. (30.5 m).
- All wiring is polarity insensitive.
- The cover for the wall module is packed separately from the subbase for ease of installation.

INSTALLATION

Mount the wall module on an inside wall approximately 54 in. (1372 mm) from the floor (or in the specified location), to allow exposure to the average zone temperature. Do not mount the wall module on an outside wall, on a wall containing water pipes, or near air ducts. Avoid locations that are exposed to discharge air from registers or radiation from appliances, lights, or the sun.

The wall module can be mounted on a wall, on a standard utility conduit box using No. 6 (3.5 mm) screws or on a 60 mm wall outlet box (see Fig. 3). When mounting directly on a wall, use the type of screws appropriate for the wall material.

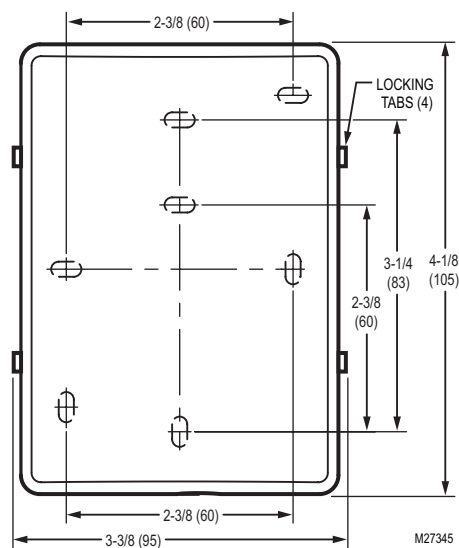


Fig. 2. Subbase mounting holes and locking tabs.

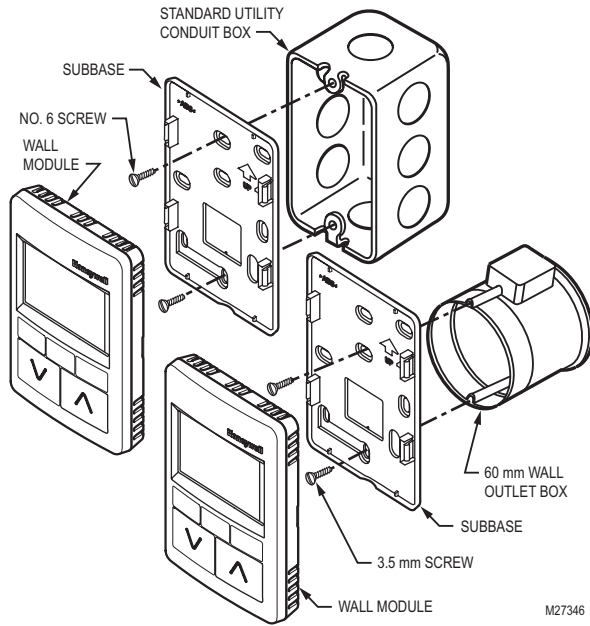


Fig. 3. Mounting on standard utility conduit box or 60 mm wall outlet box.

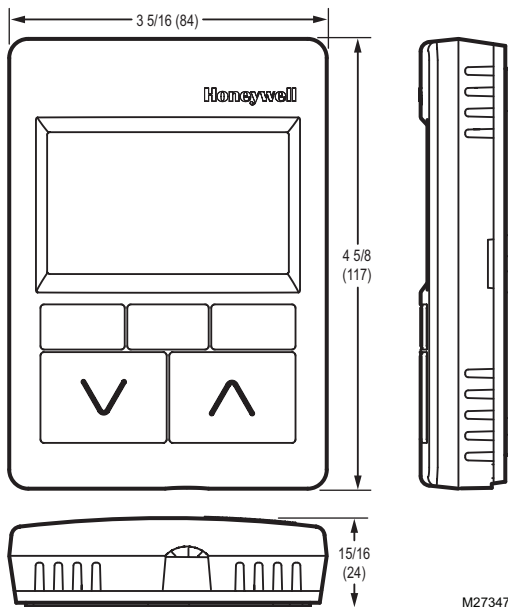


Fig. 4. LCD Wall Module dimensions in inches (mm).

Wiring

The LCD wall module is shipped with its mounting plate (subbase) separate from the module. All terminal connections can be made to the backside of the module. There are no field adjustable/replaceable components inside the module.

Attach the wires from the programmable controller and network to the appropriate wall module terminals, as indicated in Fig. 6 on page 4.



CAUTION

Improper Electrical Contact Hazard.

Screw-type terminal blocks are designed to accept no more than one 18 AWG (0.82 sq. mm) conductor.

Connect multiple wires that are 18 AWG (0.82 sq. mm) with a wire nut. Include a pigtail with this wire group and attach the pigtail to the individual terminal block.

Wiring Wall Modules

Wire the terminal block shown in Fig. 6 as follows:

1. For single wires, strip 3/16 in. (5 mm); for multiple wires going into one terminal, strip 1/2 in. (13 mm) insulation from the conductor.
2. If two or more wires (20 to 24 AWG only) are being inserted into one terminal, twist the wires together before inserting.

NOTE: When two or more wires are being inserted into one terminal, be sure to twist them together. Deviation from this rule can result in improper electrical contact. See Fig. 5.

3. Insert the wire in the required terminal location and tighten the screw to complete the termination.
4. Review and verify the terminal connection wiring illustrated in Fig. 6.

NOTE: The recommended wire size for the network bus and S-BUS is Level IV, 22 AWG (0.34 sq. mm) plenum or non-plenum rated, unshielded, twisted pair, solid conductor wire.

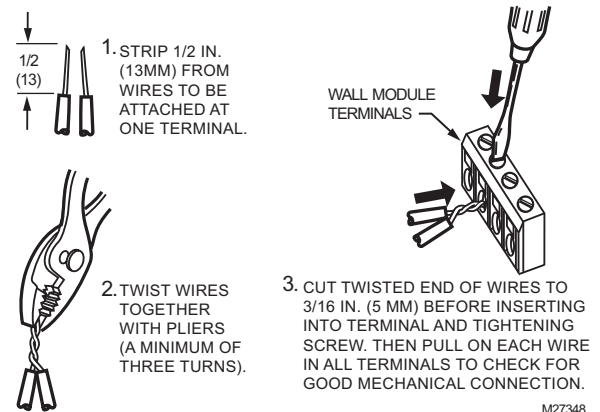


Fig. 5. Attaching two wires (20 to 24 AWG) to LCD Wall Module terminals.

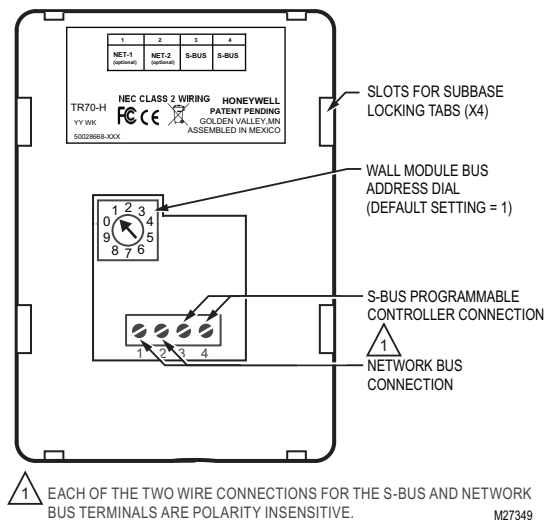


Fig. 6. Terminal connections, Wall Module bus address dial, and TR70-H DIP Switch (rear view of LCD wall module).

Setting the Wall Module Bus Address Dial

Ensure that the wall module bus address dial is set to the factory default of one (1). Use a thin blade screwdriver to turn the dial arrow. The address on the wall module must match the address in the tool. The address in the tool is also set to the factory default of one (1).

Attaching the Wall Module to the Subbase

When all wiring is complete, press the LCD wall module straight down onto the subbase until it snaps into place.

Removing the Wall Module from Subbase

To remove the wall module from its subbase:

1. Insert a thin, flat-blade screwdriver into the slot on the right side of the wall module (see Fig. 7).
2. Pull the screwdriver toward you to release the right side of the wall module from the subbase.
3. Pull the wall module out and away from the subbase.

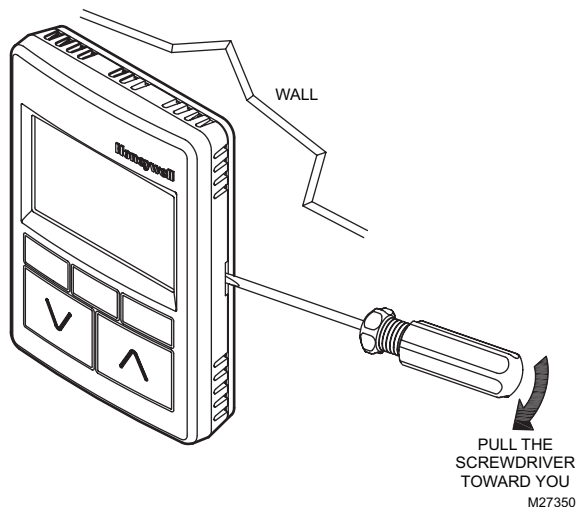


Fig. 7. Removing Wall Module from Subbase.

POWER UP

After the wall module is properly wired to the controller, it will power up. Upon initial power up, the wall module LCD panel displays the phrase, "PLEASE LOAD" (see Fig. 8). This phrase alternates with any onboard sensor display, such as temperature, humidity, etc.

Refer to the *Zio™ LCD Wall Modules TR70 and TR70-H with Sylk™ bus – Operating Guide* (form 63-2667) to configure and load the desired user interface and parameters into the wall module.

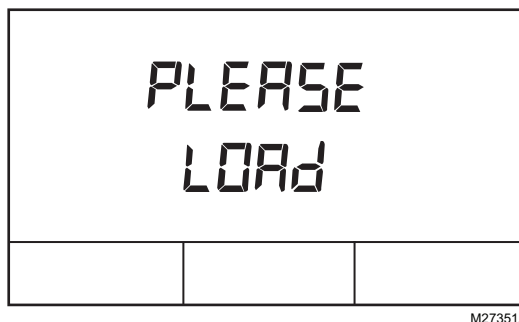


Fig. 8. Wall Module LCD display at initial power up.

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