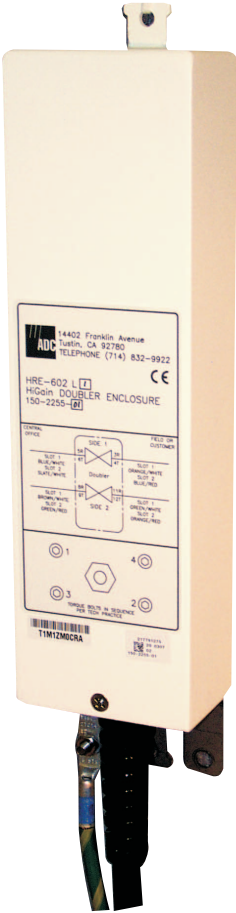


QUICK INSTALLATION



HRE-602 LIST 1 REMOTE ENCLOSURE



THE HRE-602 LIST 1

The HiGain® HRE-602 List 1 is a weatherproof, outdoor enclosure that provides easy deployment of single or multiple doubler circuits. The HRE-602 List 1 is also available bundled with a single HDU-409 List 2 doubler (HRE-602 List 2 enclosure kit) or with two doublers (HRE-602 List 3 kit).

FEATURES

-
- Compact dimensions
 - Eliminates need for expensive controlled environmental vaults
 - Weather-sealing cable fittings that protect connections and provide strain relief
 - Compatible with above-ground and below-ground installations
 - Unaffected by dust, wind, rain, ice, and snow
 - Easily mounted with two screws on a wall or pole
 - Easy-open bottom cap, secured by one retaining screw and four compression bolts
 - Replaceable gas-tube lightning surge protection on all eight ports
-

KIT CONTENTS

- Two #12 x 1-inch screws
- One $\frac{3}{16}$ -inch hex (Allen) wrench
- Two flat washers: $\frac{1}{4}$ -inch inside diameter (ID); $\frac{1}{2}$ -inch outside diameter (OD)
- Two anchor nuts
- One desiccant capsule

REQUIRED TOOLS

- Blade screwdriver
- Drill
- Wood, metal or concrete drill bit, depending on the installation surface
- Torque wrench



The HRE-602 can be deployed in an ambient temperature up to +135°F (+57.2°C) without solar load when housing one doubler. Reduce these limits by +10°F (+12.2°C) when housing two HDU-409 doublers.

These requirements comply with Bellcore standards, which require HDSL equipment placed in outdoor cabinets to operate in a temperature of -40°F (-40°C) outside the housing without solar load and +115°F (+46.1°C) with maximum solar load and maximum power dissipation.

The HRE-602 has a single, 12-pair, gel-filled stub for access to eight doubler ports, plus a No. 6 American Wire Gauge (AWG), stranded ground wire. The 24 AWG stub has a foam skin insulation with a filled jacket. Each conductor has dual insulation. Standard color codes are used for pair identification. The cable has an outside diameter of 0.48 inches (12.2 mm) and complies with the requirements of ANSI/ICEA S-84-608-1994.

The stub is routed through a ferrite coil, which prevents internal EMI energy from exiting, and terminates on an internal assembly. The assembly contains the card-edge connector and a gas-tube surge protection board.

Figure 1 details the eight doubler ports and the eight cable pairs from the stub that terminate at each port. The CO ports connect to the upstream cable pair connections to either another doubler or the line unit. The field ports connect to the downstream cable pair connections to either another doubler or remote unit. The four spare pairs remain unterminated.

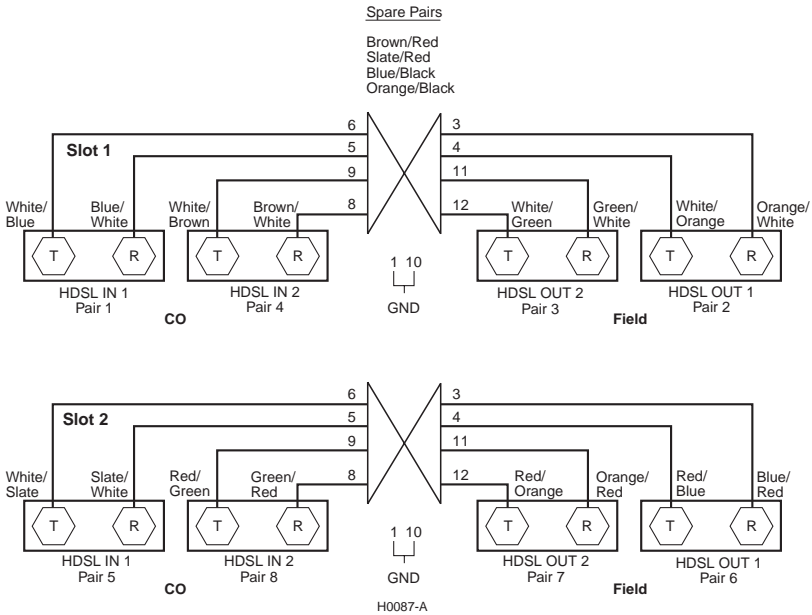
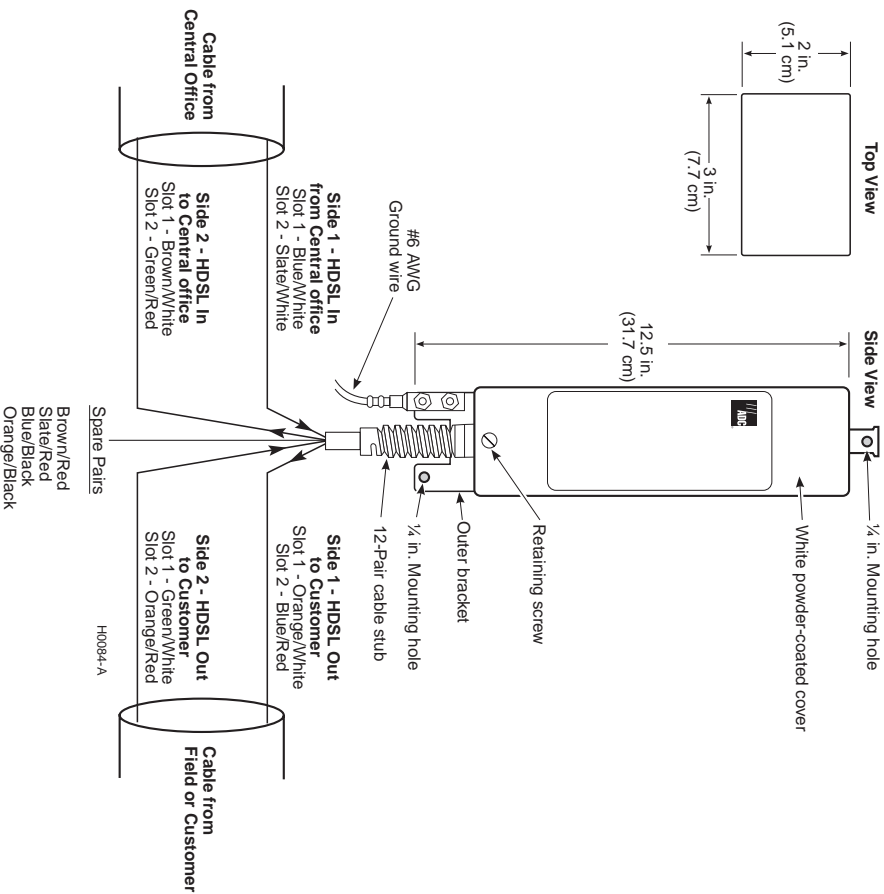


Figure 1. Wiring Diagram

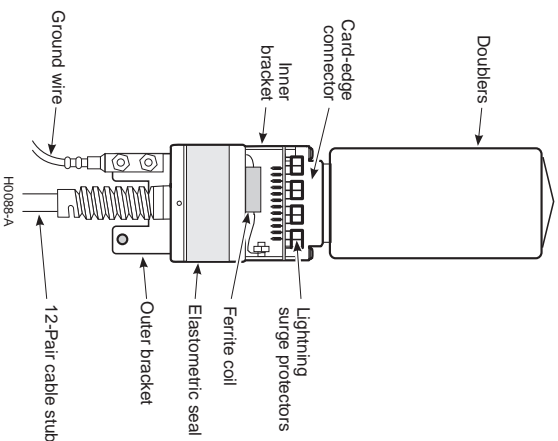
Continued



External Mechanics



Internal Mechanics



1

INSTALLING A DOUBLER

The HRE-602 provides two slots for doublers. To install a doubler:

- 1 Remove the small retaining screw from the lower front side of the case as shown in the “External Mechanics” view above.
- 2 Loosen, but do not remove, the four compression bolts from the end cap.
- 3 Remove the end cap.
- 4 Insert the doubler(s) into the card-edge connector. See the “Internal Mechanics” view above.



Older HiGain and WorldDSL doublers require two slots (HDU-217, HDU-219, HDU-407, HDU-437, HDU-439, EDU-840, and EDU-841). The HDU-409 doubler only requires one slot. The HRE-602 is available bundled with a single HDU-409 List 2 doubler (HRE-602 List 2) or with two doublers (HRE-602 List 3).

- 5 Remove the desiccant capsule from the desiccant packet contained in the kit and place the capsule above the ferrite coil in the inner bracket shown in the “Internal Mechanics” view above.
- 6 Replace the case, then insert the retaining screw.
- 7 Torque the four compression bolts on the end cap in the sequence shown in Figure 2. In addition, the four compression bolts must be torqued according to their specified torque levels and in the number sequence shown in Table 1.

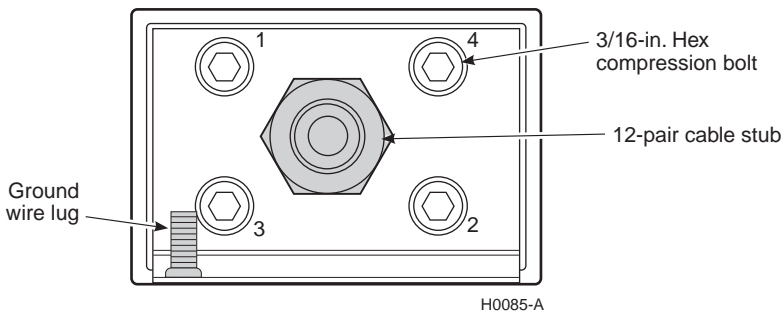


Figure 2. End-Cap Compression Bolts

Table 1. Torque Sequence Chart

Number Sequence	Torque
1	30 inch/pounds (76.2 centimeter/kilograms)
2	40 inch/pounds (101.6 centimeter/kilograms)
3	40 inch/pounds (101.6 centimeter/kilograms)
4	40 inch/pounds (101.6 centimeter/kilograms)
1	50 inch/pounds (127.0 centimeter/kilograms)
2	55 inch/pounds (139.7 centimeter/kilograms)
3	55 inch/pounds (139.7 centimeter/kilograms)
4	55 inch/pounds (139.7 centimeter/kilograms)
1	70 inch/pounds (177.8 centimeter/kilograms)
2	75 inch/pounds (190.5 centimeter/kilograms)
3	75 inch/pounds (190.5 centimeter/kilograms)
4	75 inch/pounds (190.5 centimeter/kilograms)
1	75 inch/pounds (190.5 centimeter/kilograms)

2

MOUNTING THE HRE-602

To mount the enclosure:

- 1 Select a location that allows access to wiring and grounding connections through the cable fittings on the bottom of the HRE-602.
- 2 Place the HRE-602 in the mounting location, then mark the mounting hole locations with a pencil. Figure 3 shows the mounting hole locations on the enclosure.

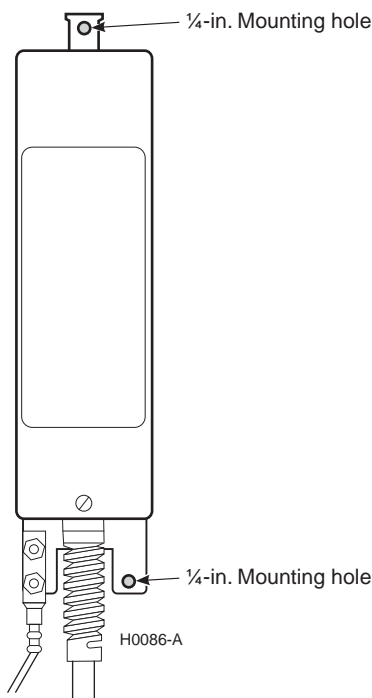


Figure 3. Mounting Hole Locations (Front View)

- 3 Do one of the following:
 - If the installation location is wood, use a drill with a wood or metal drill bit to drill the mounting screw holes.
 - If the installation location is concrete, use a drill with a concrete drill bit that is slightly smaller than the diameter of the anchor nuts to drill the mounting screw holes.
- 4 Insert the anchor nuts into the pilot holes and tap the anchor nuts into place with a hammer.
- 5 Use a No. 2 slotted screwdriver to fasten the enclosure onto the mounting location using the two screws and two washers provided in the installation kit.

3

GROUNDING AND SPLICING

The stub shield must be connected to the shield of the feeder cable during splicing since it is not connected to the enclosure ground. Failure to do so may expose the signal pairs to stray electromagnetic interference which could introduce service-affecting noise into the information payload. The No. 6 ground wire must also be properly grounded to provide both EMI and voltage surge protection for the doublers. See Figure 1 for wiring information.



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FCC Class A Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Limited Warranty

Product warranty is determined by your service agreement. Contact your sales representative or Customer Service for details.

Modifications

Any changes or modifications made to this device that are not expressly approved by ADC DSL Systems, Inc. voids the user's warranty.

All wiring external to the products should follow the provisions of the current edition of the National Electrical Code.

Standards Compliance

This equipment has been tested and verified to comply with the applicable sections of the following safety standards:

- Water Resistance Criteria in GR-950: Generic Requirements for Optical Network Unit (ONU) Closures
- IEC 60950: Safety of Information Technology Equipment

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