

Charles Universal Broadband Enclosure

SH60-482420 Universal Backplane Series

General Description and Installation

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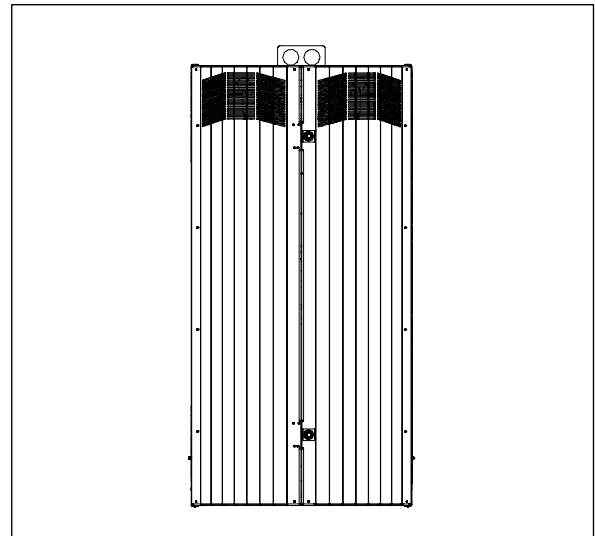


Figure 1 Front View of the SHRD60

1. GENERAL INTRODUCTION

1.1. Document Purpose

This document provides general information for the Charles Industries SH60-482420 series concealment shroud with universal backplane. A closed front view of the SHRD60 is shown in Figure 1.

-NOTE-

Hereafter, the Charles SH60-482420 series will be referred to as the “SHRD60.”

1.2. Product Purpose

The SHRD60 is a vented shroud that houses customer supplied remote radio heads (RRH) and ancillary equipment.

1.3. Product Mounting and Location

The SHRD60 is suitable for outside plant-type (OSP) locations and those that may require NEC compliance. The outdoor SHRD60 products are to be mounted on a pole. The installer connects the power, fiber and copper connections. Detailed mounting and installation information is covered in Section 3.

2. PRODUCT DESCRIPTION

The SHRD60 has a universal backplane design that makes it configurable for multiple radios. All radios, power supplies, and other equipment are customer supplied.

The SH60-482420xNET configuration supports one Ericsson 4490HP radio, one Ericsson 4890HHP radio, one Ericsson 4467 or 8863 radio, and one Ericsson 6308 power supply.

Figure 2 shows the SHRD60 dimensions. Figure 3 shows the main components of the unconfigured SHRD60.

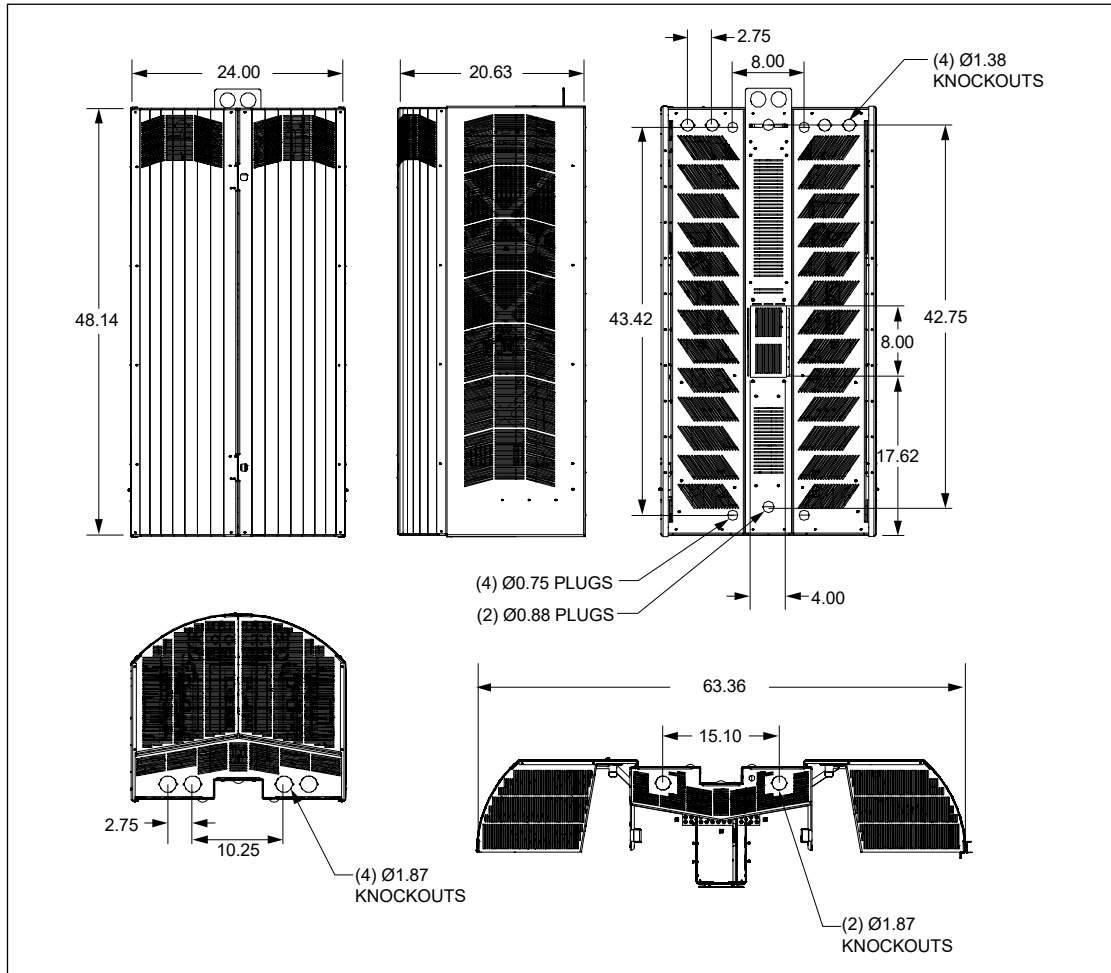


Figure 2 SHRD60 Dimensions (in inches)

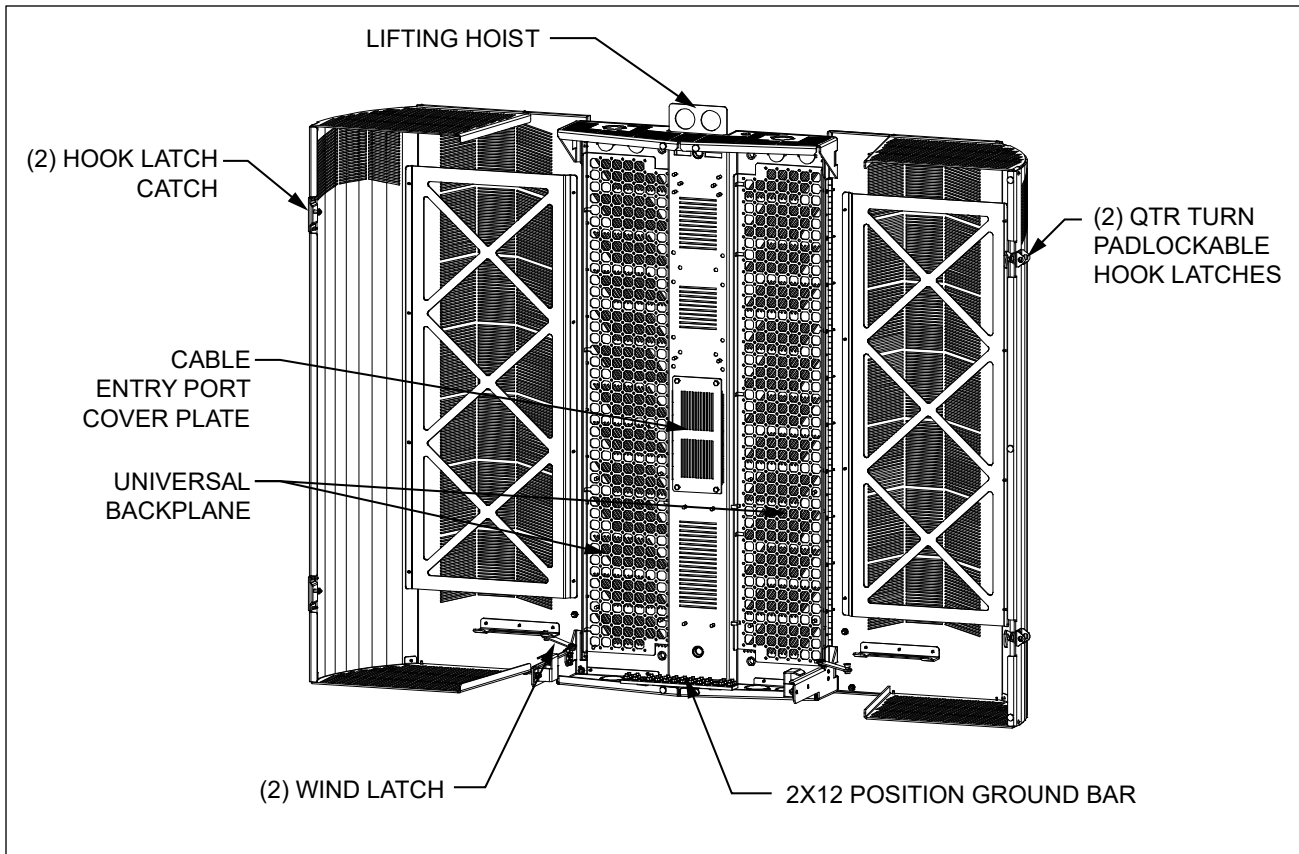


Figure 3 SH60-482420xNET Components

3. INSTALLATION

3.1. Inspecting the Product

The SHRD60 is shipped in a carton on a skid. Unpack the unit and dispose of the packaging material.

-INSPECTION NOTE-

Visually inspect the unit for damages prior to installation. If the equipment was damaged in transit, immediately report the extent of the damage to the transportation company.

3.2. Following and Using Safety Precautions

Read the following site and safety tips, cautions, and warnings, then proceed with the paragraphs that follow.

- For installation, follow all National Electrical Codes (NEC) ANSI/NFPA 70, local, environmental, workplace, and company codes, safety procedures, and practices.
- Minimum spacing between the accessories and components and the housing for ITE equipment shall be maintained for safe operation of the equipment when installed in accordance with NEC ANSI/NFPA 70.
- Read all instructions, warnings and cautions on the equipment and in the documentation shipped with the product.
- Always connect ground connections first.
- Do not place this product on weak or unstable surfaces which may allow the product to fall, resulting in potentially serious damage(s) to persons or product.
- Only authorized trained personnel shall install the SHRD60.
- In windy conditions, be sure to engage the door latches to secure the door in a stationary position.

3.3. Obtaining Tools and Equipment

Obtain the following recommended or needed items for installing the SHRD60.

- Sufficient length and quantities of fiber cable (or pigtails)
- Cable scoring, opening, and cutting tools for cable sheathing, shields, wrappings, strength members and buffer tubes
- Wire strippers
- Crimpers
- Cable, tube, wire, and fiber cleaning materials
- Protective and/or insulated work gloves
- Safety glasses
- Tape measure
- Marking utensil
- #6 ground wire or rod and earth ground materials
- Bond strap (optional, from cable bond clamp to bond post)
- Any exterior cable strain relief, per company practice
- Slotted, hex, and Phillips screwdrivers
- Torque wrench
- Assorted cable ties, clips, or fasteners (optional)
- Can wrench (216 type tool)
- Derrick for lifting
- Level

3.4. Preparing the Installation Site

Observe the following site preparation recommendations.

- Leave adequate horizontal and vertical space between multiple installations to allow for proper cable access, as well as enough room around the enclosure to open the door(s).
- The site must meet minimal personnel and equipment safety requirements.
- The distance from the cable entry point should be consistent with local installation practices.
- The pole must be able to support the weight of the SHRD60.
- Run all fiber and copper facilities to the site.

3.5. Lifting the SHRD60

See Table 1 for SHRD60 weight. Charles recommends the following procedure for lifting the SHRD60.

3.5.1. Required Equipment

- One derrick (crane) capable of lifting the SHRD60
- Two lifting slings or chains with a 2,500 lbs. capacity
- Connecting link to attach sling to the SHRD60's lifting bracket
- 75-ft. long tagline rope

Insert the lifting sling connecting links securely through the lifting bracket as shown in Figure 4.

3.5.2. Warnings and Specific Safety Precautions

	WARNING	Improper hoisting equipment and unsafe lifting procedures can result in serious injury or death.
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Observe the following local safety procedures when performing the tasks in this section.

- Keep the SHRD60 away from any power lines.
- Keep bystanders away from the work operations at all times.
- Only trained operators shall operate the crane for lifting and setting the SHRD60.
- Do not suspend loads over people or equipment.
- All persons working with hoisting equipment shall wear standard safety gear according to local practices including safety helmets and steel-toed shoes.
- Do not operate the hoisting equipment until all stabilizer are extended and in firm contact with the ground or adequate support structure.
- Do not attempt to retract or extend the stabilizers while a load is suspended.

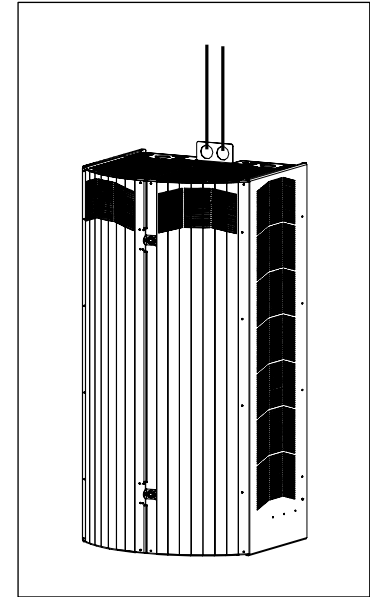


Figure 4 Lifting the SHRD60

3.6. Mounting the SHRD60

Charles offers flush and offset options for pole mounting. Kit 97-SHRD60051x-A is a mounting bracket kit that installs the SHRD60 flush against the pole. Kit 97-002309x-A, used in conjunction with kit 97-SHRD60051x-A, allows mounting with a 7" offset from the pole. Kit 97-002398x-A, used in conjunction with kit 97-SHRD60051x-A, allows mounting with a 5" offset from the pole. Kit 97-002391x-A, used in conjunction with the 97-SHRD60051x-A, allows mounting with a 3" offset from the pole. See the documentation that ships with the kit for more information.

Clearance Note: Vented shrouds require a minimum of 12" of exterior clearance at all vents. Do not install the SHRD60 within 12" of any other equipment or objects.

3.7. SHRD60 Wiring and Equipment

After the SHRD60 is properly mounted in the desired location, apply No-Ox where bus bar and other 2-hole lug connections will be made. Install ground and power connections. Always ground the equipment first, before making any other connections.

	WARNING	Perform all bonding and grounding connections prior to any electrical and communications connections.
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3.7.1. Torque Requirements

Torque all hardware as shown below (unless otherwise noted). These values apply to SAE Grade 1 & 2 Low Carbon Steel, ASTM A307 Low Carbon Steel, and Stainless Steel Grade 18-8.

Thread Size	In-lbs	Ft-lbs
4-40	4±10%	
6-32	8±10%	
8-32	16±10%	
10-32	26±10%	
12-24	50±10%	
1/4-20/M6	60±5%	5±5%
5/16-18	125±5%	10.4±5%
3/8-16	180±5%	15.0±5%
1/2-13	500±2%	41.7±2%
5/8-11	1000±1%	83.3±1%

3.7.2. Ground Connection

Use the ground bar inside the SHRD60 for grounding to earth and internal equipment. This requires a 1/4-20x5/8 two-hole lug for each connection.

3.7.3. Optional Squirrel Guard Kit

The SHRD60 can be ordered with the 96-SH60SQRLGRDA kit. If ordered, the cable entry cover plate is replaced at the factory with a grommeted plate that prevents squirrel intrusion into the enclosure. This kit is also available as the field kit 97-003005A-A, which is installed by the customer. To route cables into the SHRD60, cut slits in the center of the rubber grommets and pass cables through the slits. Only cut grommets that are needed for cable entry.

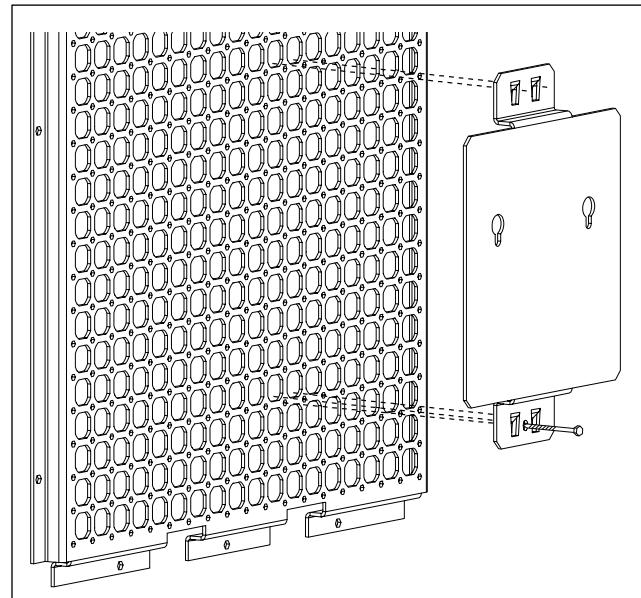
3.8. Customer Equipment Mounting

The SHRD60 has a universal backplane design, making it configurable for multiple installations. When a configuration is ordered, all mounting brackets are installed on the universal backplane at the factory.


The universal backplane consists of a 2-section grid of large and small holes. The grid sections are mounted on either side of the central spine. Brackets designed for the SHRD60 are equipped with hooks and a hole for a mounting screw. See Figure 5 for an example of a bracket installation.

To mount equipment onto the brackets, follow these steps:

1. Remove the bracket from the backplane, marking its location for later re-installation.
2. Mount the equipment onto the bracket using customer supplied hardware.
3. Re-attach the bracket at the previous location on the backplane by inserting the hooks into the large holes on the backplane.
4. Secure into place, inserting the mounting screw (included with bracket) through the small hole on the bottom of the bracket into a small hole on the backplane.



**Figure 5
Mounting Brackets Onto Backplane**

	CAUTION	<p>Install all equipment in the approved locations on the backplane in order to ensure proper thermal performance.</p> <p>If another configuration is needed, contact Charles for a new thermal analysis.</p>
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The following sections show the backplane for the available radio configuration.

3.9. Configuration 1: SH60-482420xNET

This configuration includes the following radio equipment. Coordinates for the bracket hooks are shown in the table and figure below.

(1) Ericsson 4490HP radio	J1, M1, J21, M21
(1) Ericsson 4890HP radio	B1, E1, B20, E20
(1) Ericsson 4467 or 8863 radio	Mount on central spine
(1) Ericsson 6308 power supply @240V	B26, E26, B42, E24
(1) Heat deflector panel	A24, C24

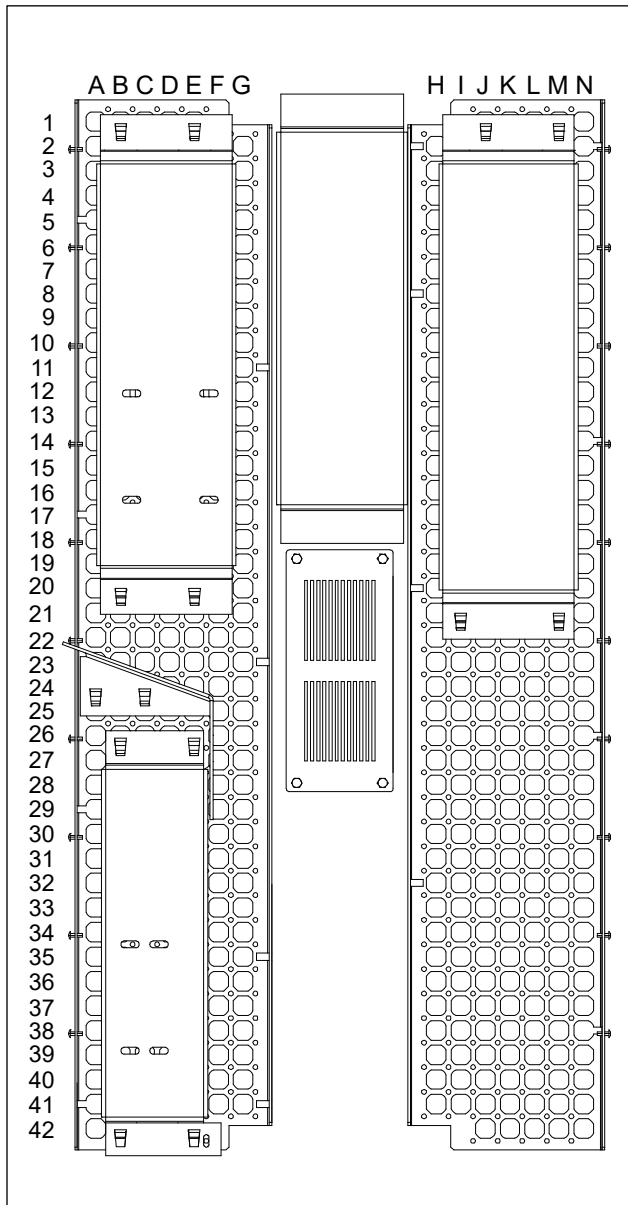


Figure 6
Mounting Locations for SH60-482420xNET

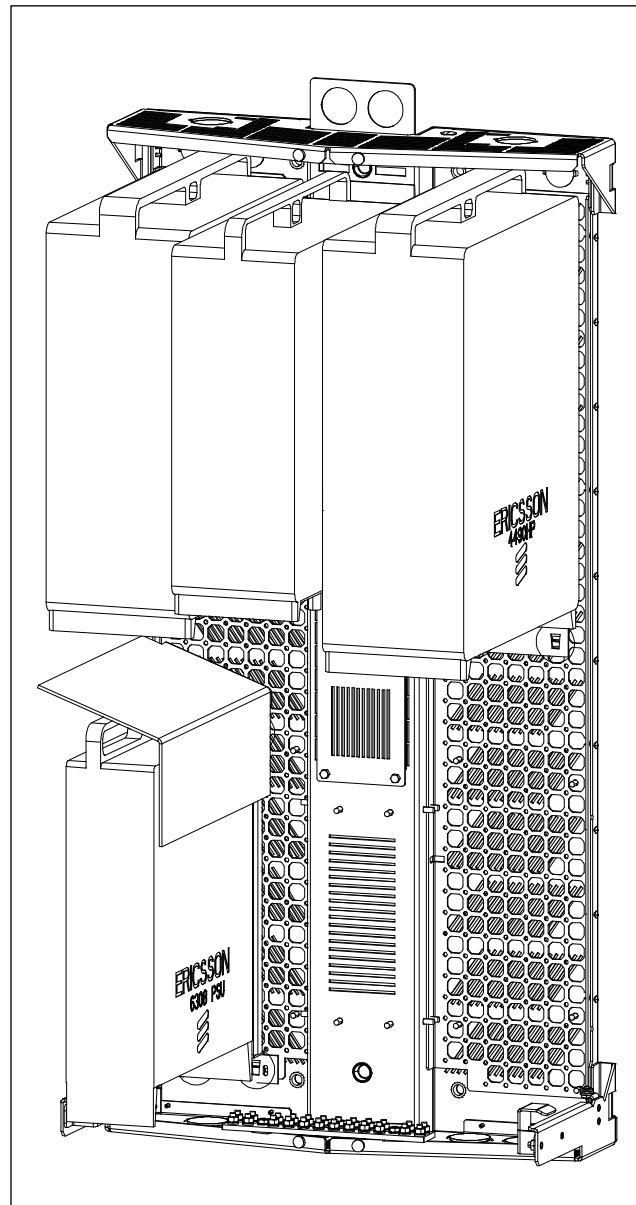


Figure 7
SH60-482420xNET with Customer Equipment

4. PERIODIC MAINTENANCE

In the event that the enclosure needs to be opened in freezing conditions, a narrow, pointed metallic object such as a screwdriver or chisel, along with a non-metallic device such as a rubber mallet, may be used to remove excessive ice buildup around the door and locking mechanism. A commercial aerosol de-icer spray can be used to free up locks and latches if needed.

5. TECHNICAL ASSISTANCE AND REPAIR SERVICE

For questions on product repair or if technical assistance is required, contact Charles Technical Support.

847-806-8500
techserv@charlesindustries.com (email)
<http://www.charlesindustries.com/techserv.htm>

6. WARRANTY & CUSTOMER SERVICE

Charles Industries LLC offers a one-year warranty on the SHRD60 product. The Charles warranty is limited to the operation of the SHRD60 hardware as described in this documentation and does not cover equipment that may be integrated by a third party. The terms and conditions applicable to any specific sale of the product shall be defined in the resulting sales contract. For questions on warranty or other customer service assistance, contact your Charles Customer Service Representative.

847-806-6300
mktserv@charlesindustries.com (email)
http://www.charlesindustries.com/main/telecom_sales_support.htm

7. SPECIFICATIONS

Physical	
Dimensions	48"Hx24"Wx20"D
Weight	Approx. 150 lbs. as shipped
Material	Spine: 12 gauge steel Door and sides: 0.125" aluminum
Electrical	
Bonding and Grounding	One ground bar inside enclosure
Cable Entrance	Refer to Figure 2
Environmental	
Operating Temp. Range, Inside Enclosure	-40° to +131°F, -40° to 55°C
Operating Temp. Range, Outside Enclosure	-40° to +115°F, -40° to 46°C
Humidity	0 to 95% (non-condensing)
Altitude	Up to 2,000 meters (6560')
Kits and Replacement Parts	
1/4 Turn Latch with Hook and Padlock Hasp	39-200801-0
Hook Latch Catch	22-105261-0

Table 1 SHRD60 Specifications

7.1. Available Configurations

Part Number	Supported Equipment	Configured Weight
SH60-482420xNET	(1) Ericsson 4490HP radio (1) Ericsson 4890HP radio (1) Ericsson 4467 or 8863 radio (1) Ericsson 6308 PSU @240V	332 lbs.

Table 2 Radio Configurations

7.2. Available Colors and Mounting Kits

Part Number	Color	Touch-up Paint	Flush Mounting	7" Offset Mounting	5" Offset Mounting	3" Offset Mounting
SH60-482420DNET	Classic Texture Gray	02-000629-0	97-SHRD60051D-A	97-002309D-A with 97-SHRD60051D-A	97-002398D-A with 97-SHRD60051D-A	97-002391D-A with 97-SHRD60051D-A
SH60-482420FNET	Onyx Black	02-000611-0	97-SHRD60051F-A	97-002309F-A with 97-SHRD60051F-A	97-002398F-A with 97-SHRD60051F-A	97-002391F-A with 97-SHRD60051F-A
SH60-482420GNET	National Park Brown	02-000626-0	97-SHRD60051G-A	97-002309G-A with 97-SHRD60051G-A	97-002398G-A with 97-SHRD60051G-A	97-002391G-A with 97-SHRD60051G-A

Table 3 SHRD60 and Mounting Kit Part Numbers