



Section 1

Advanced Technologies

TerraStat®

Charge Dissipation Terminals

Introduction

TerraStat® is the latest design in lightning dissipation technology. Science and experience show that TerraStat® Charge Dissipation Terminals, and the structures on which they are installed, are much less likely to sustain a direct lightning strike than unprotected structures or structures with traditional lightning protection systems.

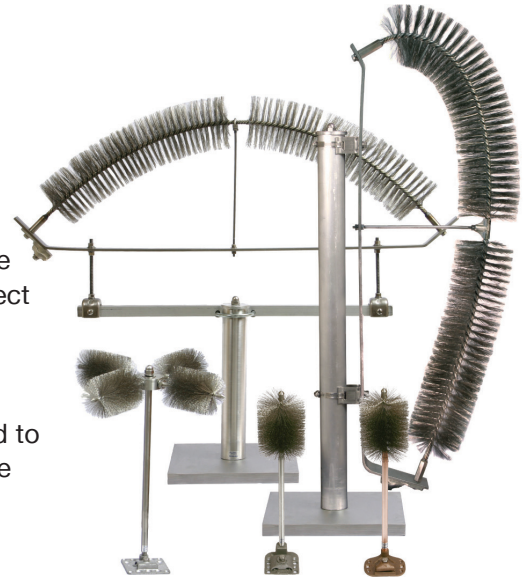
Designs utilizing TerraStat® Charge Dissipation Terminals (CDT) are created to meet or exceed NFPA 780, and IEC 62305-3 standards, while providing the enhanced performance offered by CDT technology.

Whatever your requirements, we have a product to fit the application. For those special applications, we have the capability to design and manufacture a custom system to fit your needs. TerraStat® Charge Dissipation Terminals securely contribute to ALLTEC's Protection Pyramid™ methodology for comprehensive facility protection.

TerraStat® products require project specific lightning protection design and installation. Inappropriate use of these products, or use in designs not provided by or approved by ALLTEC will invalidate performance characteristics and all Warranty Provisions.

Features

- Patented Technology
- High grade stainless steel construction
- Lightweight and easy to install
- Corrosion resistant
- Low wind loading
- Large selection of mounting hardware
- Recommended as per API 2003
- Independently tested



Applications

- **TerraStat® TS100: Standard Protection**
Office buildings, shelters, industrial facilities, homes, and warehouses
- **TerraStat® TS400: Enhanced Protection**
Monopoles, petrochemical, high-mast lightning, communication towers, and externally mounted cameras
- **TerraStat® TS500 & TS510: Enhanced Protection**
Communication towers, bridges, petrochemical storage facilities, and stacks

NOTE

- TS500 (Vertically Mounted)
- TS510 (Horizontally Mounted)

Progressive Lightning Protection for an Advancing World

Mission-critical systems, subjected to even properly terminated lightning strikes, suffer unacceptable damages from secondary and electromagnetic effects. The advancement of electronic technology over the past several decades demands a constant innovation in lightning protection technology as well. ALLTEC takes pride in the continual development and improvement of our TerraStat® line of charge dissipation/charge redistribution products.

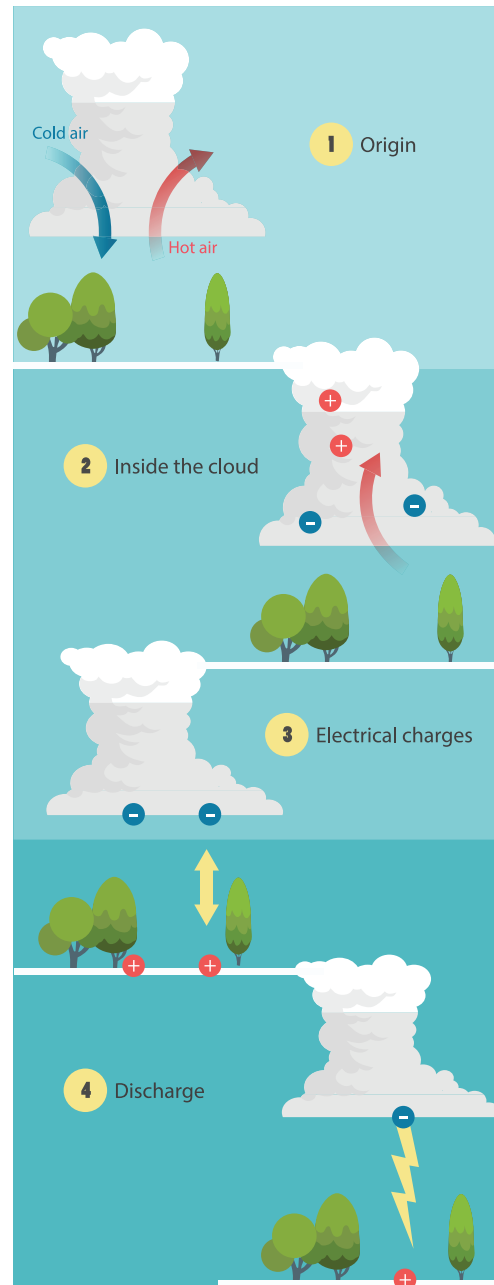
The old-fashioned lightning rod system may no longer offer adequate protection to the microprocessor-controlled world in which we now live. Today's technology requires more than just managing the lightning strike by directing it to earth. It is now imperative to do whatever is necessary to mitigate the chances of a direct lightning strike to critical facilities. ALLTEC's TerraStat® product line offers the advanced technology required to protect your sensitive equipment.

There are many adjectives used to characterize this advanced technology, but "Charge Dissipation" or "Charge Redistribution" most accurately describes the technology. To understand how TerraStat® products work, one must first develop an understanding of the basic processes involved in a thunderstorm and the development of a lightning strike.

As a thunderstorm builds, a breakdown point is reached and the cloud begins sending down charges called stepped leaders through ionized paths in the atmosphere. Multiple stepped leaders begin propagating towards the ground in three dimensions looking for the highest accumulation of ground charge in the area. These charges move in steps of approximately 50 meters, stop and look for the best potential, then move again. These steps and redirections are what gives lightning its jagged appearance.

Once these stepped leaders reach within about 10 to 150 meters of the earth, objects on the surface where the opposite ground charge has accumulated begin to form upward streamers. The energy from the stepped leaders is actually pulling the charge off objects on the earth's surface in the form of the upward streamers. At this point, the object on the ground that provides

the highest concentration of charges and the best formed streamer, becomes the most likely target for the nearest stepped leader, and completes the path of the lightning strike. Once this occurs, charge from other stepped leaders originating from the same source recede and dump their energy through the established neutralization path.



Charge Dissipation Principle

Charge Dissipation, or “Charge Redistribution” Technology uses the point discharge principle to facilitate the dissipation, or the reduction, of a buildup of static electrical charges. This technology has primarily been applied to the electronics and manufacturing industries to control the buildup of static charges that can interfere with or damage sensitive electronic components, and it has been widely accepted and used with great success. The sole purpose of static dissipation products is to reduce the accumulation of electrical charges and thereby prevent an electrical arc or an electrical current flow that can cause damage.

This same technology has been successfully applied to the lightning protection industry by developing a product line that can be mounted on structures to reduce the accumulation of ground charge. This is accomplished by ionizing surrounding air and neutralizing accumulated charges on the earth’s surface, including the grounding system.

When a pointed, grounded conductor is placed in a high electric field (such as on a structure located in a thunderstorm) voltage effects at the point are increased greatly. Electrons from atmospheric atoms and molecules are stripped away and flow to ground through the grounded conductor, leaving behind positive atmospheric ions around the point. This process is commonly referred to as the “corona” effect.

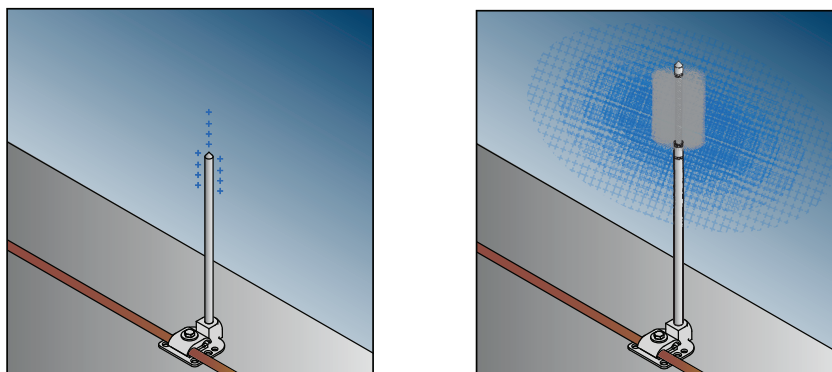
This corona process begins long before charge accumulation reaches a critical level when step leaders begin forming in a storm cloud. The result is an accumulation of ions around the point. Since like

charges repel from each other, this accumulation of ions disperse (or dissipate) in all directions away from the point. Electrons left behind from this dissipation of ions flow to ground and neutralize the positive charges accumulated on the ground and on the structure. This is an ongoing process as the thunderstorm builds and passes over a facility.

A single point, such as on a lightning rod, or as occurs on a corner of a tower or structure, will reach a point of saturation to the extent that it cannot disperse charge at a fast enough rate to keep up with the charge accumulation. These areas then become the points where streamers will form, thereby attracting a lightning strike.

When the process is magnified with the addition of thousands of points in a charge dissipation terminal, the dissipation of ions is magnified many times over that of a single sharp point. The resulting effect is that the ground charges, which develop streamers attracting a lightning strike, no longer have sufficient electrical energy supporting them to initiate this process. Without the formation of an upward streamer, the downward stepped leaders will look for a better target.

ALLTEC has a full array of TerraStat® models to protect all types of structures or facilities. Our experienced design staff is ready to assist you with technical support in choosing the correct models for your specific application. We also offer site survey and design services to review an entire facility, and can assist you with providing system designs for a complete physical plant or a campus type environment.

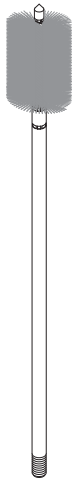


Air Terminal vs. Charge Dissipation Terminal

Standard Protection Models

TerraStat® TS100 Dissipation Terminals

Designed to replace the traditional air terminal in conventional lightning protection systems, the TerraStat® TS100 converts a standard lightning rod system into a Charge Lightning Dissipation Terminal System, which mitigates the chances of a direct lightning strike to any building or structure on which it is installed. The TerraStat® TS100 assembly is constructed of high quality stainless steel. The stem section is available in various materials and sizes to be compatible with all standard lightning protection system components.



Numbering System

To order, simply follow the steps below to specify the type and size of the unit. The example below, shows how to order the TerraStat® TS100.

Example: TS100-C-12-12

TS100 - **C** - **12** - **12**
 (1) - (2) - (3) - (4)

(1) Type of Component	TS100 = TerraStat® TS100
(2) Material	C = Copper, SS = Stainless Steel, A = Aluminum
(3) Diameter	12 =1/2" or 58 =5/8"
(4) Length	12 = 12", 18 = 18", 24 = 24"

TerraStat® TS100 Dissipator Stainless Steel Air Terminals w/Copper Rod

Part Number	Description	Weight
TS100-C-12-12	TerraStat® 100, Copper, 1/2" Dia., 12" Long, Solid Rod	1.0 lbs (0.4 kg)
TS100-C-12-18	TerraStat® 100, Copper, 1/2" Dia., 18" Long, Solid Rod	1.5 lbs (0.6 kg)
TS100-C-12-24	TerraStat® 100, Copper, 1/2" Dia., 24" Long, Solid Rod	2.0 lbs (0.9 kg)

TerraStat® TS100 Dissipator Stainless Steel Air Terminals w/Stainless Steel Rod

Part Number	Description	Weight
TS100-SS-58-18	TerraStat® 100, Stainless Steel, 5/8" Dia., 18" Long, Solid Rod	1.5 lbs (0.6 kg)
TS100-SS-58-24	TerraStat® 100, Stainless Steel, 5/8" Dia., 24" Long, Solid Rod	2.5 lbs (1.1 kg)

TerraStat® TS100 Dissipator Stainless Steel Air Terminals w/Aluminum Rod

Part Number	Description	Weight
TS100-A-12-12	TerraStat® 100, Aluminum, 1/2" Dia., 12" Long, Solid Rod	0.5 lbs (0.2 kg)
TS100-A-12-18	TerraStat® 100, Aluminum, 1/2" Dia., 18" Long, Solid Rod	0.5 lbs (0.2 kg)
TS100-A-12-24	TerraStat® 100, Aluminum, 1/2" Dia., 24" Long, Solid Rod	1.0 lbs (0.4 kg)
TS100-A-58-12	TerraStat® 100, Aluminum, 5/8" Dia., 12" Long, Solid Rod	1.0 lbs (0.4 kg)
TS100-A-58-18	TerraStat® 100, Aluminum, 5/8" Dia., 18" Long, Solid Rod	1.0 lbs (0.4 kg)
TS100-A-58-24	TerraStat® 100, Aluminum, 5/8" Dia., 24" Long, Solid Rod	1.0 lbs (0.4 kg)

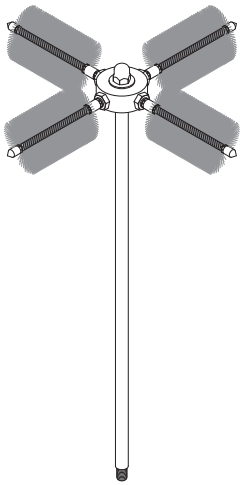
NOTE:

- All threads are machined to 1/2 - 13 UNC x .75" standard, otherwise add suffix THDX, where X is the non-standard length in decimal inches.
- Other sizes available upon request.

Enhanced Protection Models

TerraStat® TS400 Dissipation Terminals

Using the same features as the TerraStat® TS100, the TerraStat® TS400 provides a higher level of charge dissipation. It is constructed of Stainless Steel or Aluminum and utilizes four stainless steel dissipation brushes attached to a single elevation conductor for higher dissipation on a single mount. The TerraStat® TS400 is ideally suited for protecting high mast light poles, security cameras, SCADA antenna systems, and smaller monopoles and towers used for communications.



Numbering System

To order, simply follow the steps below to specify the type and size of the unit. The example below, shows how to order the TerraStat® TS400.

Example: TS400-SS-18

TS400 - **SS** - **18**
 (1) - (2) - (3)

(1) Type of Component	TS400 = TerraStat® TS400
(2) Material	SS = Stainless Steel, A = Aluminum
(4) Length	12 = 12", 18 = 18", 24 = 24"

TerraStat® TS400 Dissipator Stainless Steel Air Terminals w/Stainless Steel Rod

Part Number	Description	Weight
TS400-SS-18	TerraStat® 400, Stainless Steel, 5/8" Dia., 18" Long, Solid Rod	4.2 lbs (1.9 kg)
TS400-SS-24	TerraStat® 400, Stainless Steel, 5/8" Dia., 24" Long, Solid Rod	4.5 lbs (2.0 kg)
TS400-SS-36	TerraStat® 400, Stainless Steel, 5/8" Dia., 36" Long, Solid Rod	5.5 lbs (2.5 kg)
TS400-SS-48	TerraStat® 400, Stainless Steel, 5/8" Dia., 48" Long, Solid Rod	6.5 lbs (2.9 kg)
TS400-SS-60	TerraStat® 400, Stainless Steel, 5/8" Dia., 60" Long, Solid Rod	7.5 lbs (3.4 kg)
TS400-SS-72	TerraStat® 400, Stainless Steel, 5/8" Dia., 72" Long, Solid Rod	8.5 lbs (3.9 kg)

TerraStat® TS400 Dissipator Stainless Steel Air Terminals w/Aluminum Rod

Part Number	Description	Weight
TS400-A-18	TerraStat® 400, Aluminum, 5/8" Dia., 18" Long, Solid Rod	2.4 lbs (1.0 kg)
TS400-A-24	TerraStat® 400, Aluminum, 5/8" Dia., 24" Long, Solid Rod	2.5 lbs (1.1 kg)
TS400-A-36	TerraStat® 400, Aluminum, 5/8" Dia., 36" Long, Solid Rod	3.1 lbs (1.4 kg)
TS400-A-48	TerraStat® 400, Aluminum, 5/8" Dia., 48" Long, Solid Rod	3.4 lbs (1.5 kg)
TS400-A-60	TerraStat® 400, Aluminum, 5/8" Dia., 60" Long, Solid Rod	3.6 lbs (1.6 kg)
TS400-A-72	TerraStat® 400, Aluminum, 5/8" Dia., 72" Long, Solid Rod	4.1 lbs (1.9 kg)

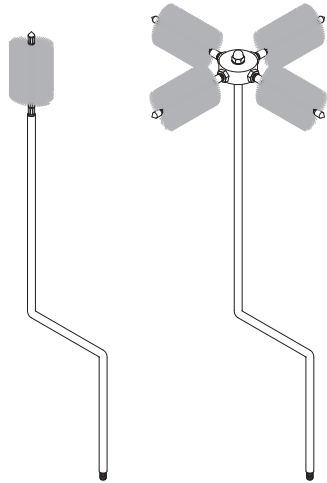
NOTE

- All threads are machined to 1/2 - 13 UNC x .75" standard, otherwise add suffix THDX, where X is the non-standard length in decimal inches.
- Other diameters and lengths are available upon request.
- All elevation conductors are 5/8" diameter standard.

Elevation Conductors

Part Numbering System

To order, simply follow the steps below to specify the type and size of the unit. The example below shows how to order the mounting hardware.



Example: TS400-58-48-SRO

TS400 - **58** - **48** - **SRO**
 (1) - (2) - (3) - (4)

(1) TerraStat® Model	TS100 = TerraStat® TS100 or TS400 = TerraStat® TS400
(2) Diameter	58 = 5/8"
(3) Length	48 = 48", 60 = 60", 72 = 72", etc... NOTE: Other lengths available upon request.
(4) Type	SRO = Stainless Steel Round Offset ARO = Aluminum Round Offset

TerraStat® TS100 Round Offset Elevation Conductors

Part Number	Description	Weight
TS100-58-48-SRO	TerraStat® 100, Stainless Steel, 5/8" Dia., 48" Long, Solid Rod, with Round Offset	4.82 lbs (2.2 kg)
TS100-58-60-SRO	TerraStat® 100, Stainless Steel, 5/8" Dia., 60" Long, Solid Rod, with Round Offset	5.71 lbs (2.6 kg)
TS100-58-72-SRO	TerraStat® 100, Stainless Steel, 5/8" Dia., 72" Long, Solid Rod, with Round Offset	6.75 lbs (3.1 kg)
TS100-58-48-ARO	TerraStat® 100, Aluminum, 5/8" Dia., 48" Long, Solid Rod, with Round Offset	1.63 lbs (0.7 kg)
TS100-58-60-ARO	TerraStat® 100, Aluminum, 5/8" Dia., 60" Long, Solid Rod, with Round Offset	1.88 lbs (0.9 kg)
TS100-58-72-ARO	TerraStat® 100, Aluminum, 5/8" Dia., 72" Long, Solid Rod, with Round Offset	2.13 lbs (1.0 kg)

TerraStat® TS400 Round Offset Elevation Conductors

Part Number	Description	Weight
TS400-58-48-SRO	TerraStat® 400, Stainless Steel, 5/8" Dia., 48" Long, Solid Rod, with Round Offset	7.6 lbs (3.4 kg)
TS400-58-60-SRO	TerraStat® 400, Stainless Steel, 5/8" Dia., 60" Long, Solid Rod, with Round Offset	8.49 lbs (3.9 kg)
TS400-58-72-SRO	TerraStat® 400, Stainless Steel, 5/8" Dia., 72" Long, Solid Rod, with Round Offset	9.53 lbs (4.3 kg)
TS400-58-48-ARO	TerraStat® 400, Aluminum, 5/8" Dia., 48" Long, Solid Rod, with Round Offset	4.41 lbs (2.0 kg)
TS400-58-60-ARO	TerraStat® 400, Aluminum, 5/8" Dia., 60" Long, Solid Rod, with Round Offset	4.66 lbs (2.1 kg)
TS400-58-72-ARO	TerraStat® 400, Aluminum, 5/8" Dia., 72" Long, Solid Rod, with Round Offset	4.91 lbs (2.2 kg)

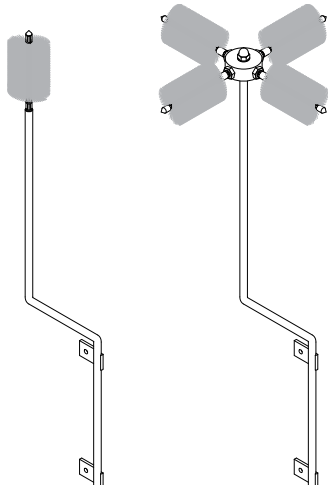
NOTE

- Standard offset is 8".
- All shafts are 5/8" diameter with threads machined to 1/2 - 13 UNC x .75" standard, otherwise add suffix THDX, where X is the non-standard length in decimal inches.

Elevation Conductors - Horizontal Mounting Plates

Part Numbering System

To order, simply follow the steps below to specify the type and size of the unit. The example below shows how to order the mounting hardware.



Example: TS400-58-48-SRO-HMP

TS400 - **58** - **48** - **SRO** - **HMP**
 (1) - (2) - (3) - (4) - (5)

(1) TerraStat® Model	TS100 = TerraStat® TS100 or TS400 = TerraStat® TS400
(2) Diameter	58 = 5/8"
(3) Length	48 = 48", 60 = 60", 72 = 72", etc... NOTE: Other lengths available upon request.
(4) Type	SRO = Stainless Steel Round Offset
(5) Hardware	HMP = Horizontal Mounting Plates

TerraStat® TS100 Round Offset Elevation Conductors with Mounting Plates

Part Number	Description	Weight
TS100-58-48-SRO-HMP	TerraStat® 100, Stainless Steel, 5/8" Dia., 48" Long, Solid Rod, with Round Offset, Including (2) Horizontal Mounting Plates	5.32 lbs (2.4 kg)
TS100-58-60-SRO-HMP	TerraStat® 100, Stainless Steel, 5/8" Dia., 60" Long, Solid Rod, with Round Offset, Including (2) Horizontal Mounting Plates	6.92 lbs (3.1 kg)
TS100-58-72-SRO-HMP	TerraStat® 100, Stainless Steel, 5/8" Dia., 72" Long, Solid Rod, with Round Offset, Including (2) Horizontal Mounting Plates	7.42 lbs (3.4 kg)

TerraStat® TS400 Round Offset Elevation Conductors with Mounting Plates

Part Number	Description	Weight
TS400-58-48-SRO-HMP	TerraStat® 400, Stainless Steel, 5/8" Dia., 48" Long, Solid Rod, with Round Offset, Including (2) Horizontal Mounting Plates	8.1 lbs (3.7 kg)
TS400-58-60-SRO-HMP	TerraStat® 400, Stainless Steel, 5/8" Dia., 60" Long, Solid Rod, with Round Offset, Including (2) Horizontal Mounting Plates	9.7 lbs (4.4 kg)
TS400-58-72-SRO-HMP	TerraStat® 400, Stainless Steel, 5/8" Dia., 72" Long, Solid Rod, with Round Offset, Including (2) Horizontal Mounting Plates	10.2 lbs (4.6 kg)

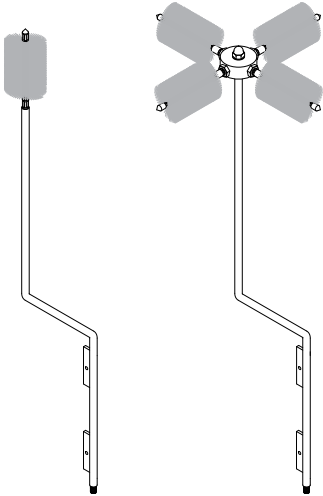
NOTE

- Standard offset is 8".
- All shafts are 5/8" diameter with threads machined to 1/2 - 13 UNC x .75" standard, otherwise add suffix THDX, where X is the non-standard length in decimal inches.

Elevation Conductors - Vertical Mounting Plates

Part Numbering System

To order, simply follow the steps below to specify the type and size of the unit. The example below shows how to order the mounting hardware.



Example: TS400-58-48-SRO-VMP

TS400 - **58** - **48** - **SRO** - **VMP**
 (1) - (2) - (3) - (4) - (5)

(1) TerraStat® Model	TS100 = TerraStat® TS100 or TS400 = TerraStat® TS400
(2) Diameter	58 = 5/8"
(3) Length	48 = 48", 60 = 60", 72 = 72", etc... NOTE: Other lengths available upon request.
(4) Type	SRO = Stainless Steel Round Offset
(5) Hardware	VMP = Vertical Mounting Plates

TerraStat® TS100 Round Offset Elevation Conductors with Mounting Plates

Part Number	Description	Weight
TS100-58-48-SRO-VMP	TerraStat® 100, Stainless Steel, 5/8" Dia., 48" Long, Solid Rod, with Round Offset, Including (2) Vertical Mounting Plates	5.32 lbs (2.4 kg)
TS100-58-60-SRO-VMP	TerraStat® 100, Stainless Steel, 5/8" Dia., 60" Long, Solid Rod, with Round Offset, Including (2) Vertical Mounting Plates	6.92 lbs (3.1 kg)
TS100-58-72-SRO-VMP	TerraStat® 100, Stainless Steel, 5/8" Dia., 72" Long, Solid Rod, with Round Offset, Including (2) Vertical Mounting Plates	7.42 lbs (3.4 kg)

TerraStat® TS400 Round Offset Elevation Conductors with Mounting Plates

Part Number	Description	Weight
TS400-58-48-SRO-VMP	TerraStat® 400, Stainless Steel, 5/8" Dia., 48" Long, Solid Rod, with Round Offset, and Including (2) Vertical Mounting Plates	8.1 lbs (3.7 kg)
TS400-58-60-SRO-VMP	TerraStat® 400, Stainless Steel, 5/8" Dia., 60" Long, Solid Rod, with Round Offset, and Including (2) Vertical Mounting Plates	9.7 lbs (4.4 kg)
TS400-58-72-SRO-VMP	TerraStat® 400, Stainless Steel, 5/8" Dia., 72" Long, Solid Rod, with Round Offset, Including (2) Vertical Mounting Plates	10.2 lbs (4.6 kg)

NOTE

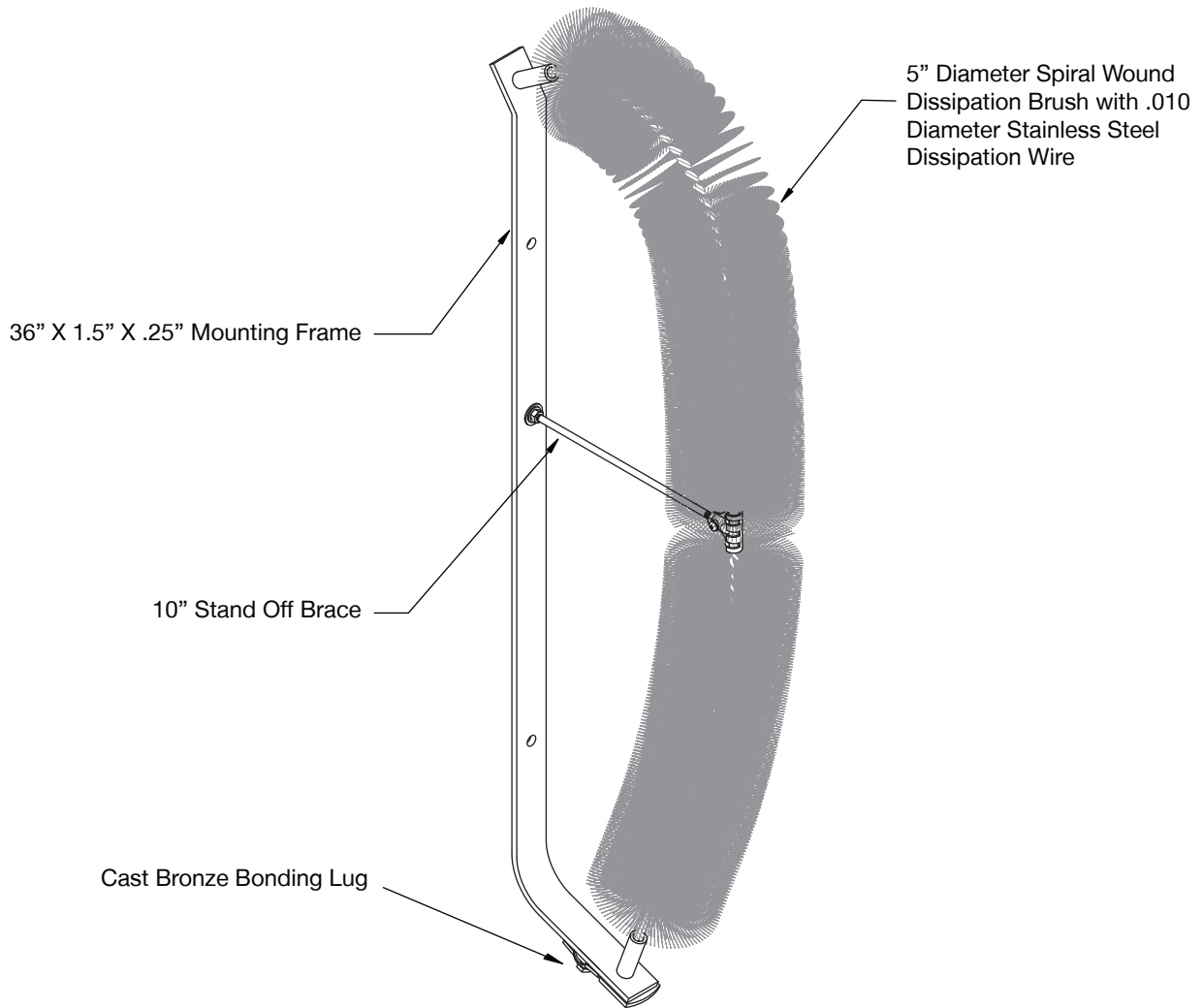
- Standard offset is 8".
- All shafts are 5/8" diameter with threads machined to 1/2 - 13 UNC x .75" standard, otherwise add suffix THDX, where X is the non-standard length in decimal inches.

Enhanced Protection Models

TerraStat® TS500 Dissipation Terminals (Vertical)

ALLTEC’s latest development in charge dissipation products utilizes the Point Discharge Principal for the mitigation of direct lightning strikes to communications and broadcast towers and other tall structures. The TerraStat® TS500 is constructed completely of 300 series stainless steel for durability. The lightweight, low wind load design of the TS500 facilitates a simple installation without requiring a large amount of valuable real estate for mounting. The TS500 can be installed on any type of tower or monopole.

Part Number	Description	Weight
TS500-38	TerraStat® 500, Stainless Steel, 3/8" Mounting Holes, Vertical Tower Dissipator	8.0 lbs (3.6 kg)
TS500-12	TerraStat® 500, Stainless Steel, 1/2" Mounting Holes, Vertical Tower Dissipator	8.0 lbs (3.6 kg)



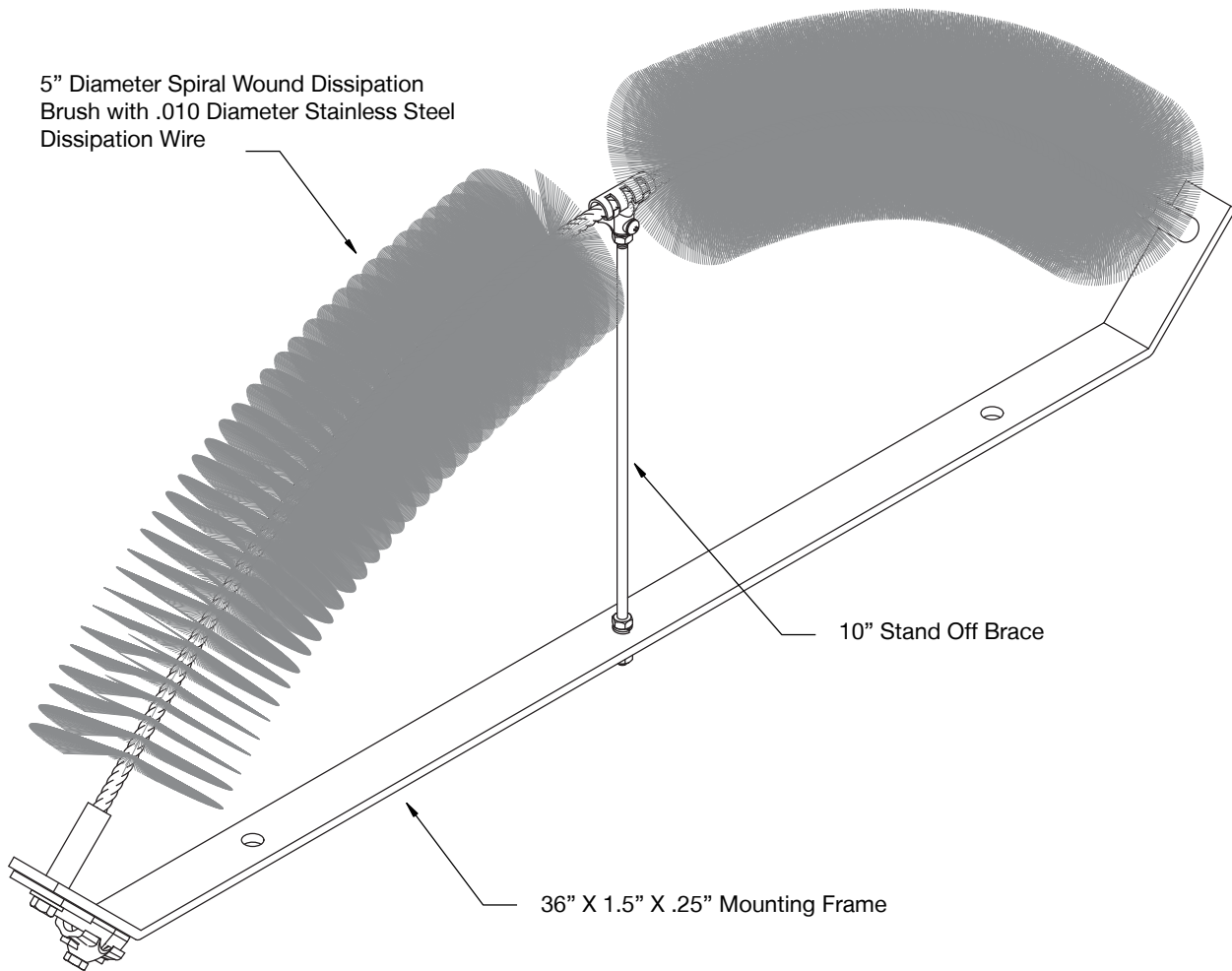
NOTE

- Custom mounting hardware available for round member legs or angle legs. For mounting hardware, [page. 17](#) and [Section 2](#).

TerraStat® TS510 Dissipation Terminal (Horizontal)

The TerraStat® TS510 is the horizontal version of the TerraStat® TS500 and is designed to be mounted horizontally across the tops of large face section towers, on platforms and antenna arms. The TS510 can also be used to protect water tanks, storage tanks, commercial cranes and other structures that have large areas of horizontal exposed steel.

Part Number	Description	Weight
TS510-38	TerraStat® 510, Stainless Steel, 3/8" Mounting Holes, Horizontal Tower Dissipator	9.0 lbs (4.1 kg)



NOTE

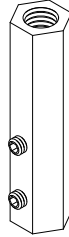
- Custom mounting hardware available for round member legs or angle legs. For mounting hardware, [page. 17](#) and [Section 2](#).

TerraStat® TS100 & TS400 Mounting Hardware

Only for TerraStat® TS100 & TS400 models

Conductor to Rod Adaptor

Part Number	Description	Weight
3650	Adaptor, Brass, 1/2-13 to 4/0 19, Through the Roof, Hex	6.0 oz (170.0 g)
3650A	Adaptor, Aluminum, 1/2-13 to 4/0 19, Through the Roof, Hex	3.0 oz (85.0 g)
3650S	Adaptor, Stainless Steel, 1/2-13 to 4/0 19, Through the Roof, Hex	6.0 oz (170.0 g)

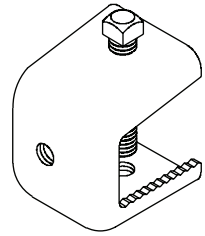


TerraStat® TS500 & TS510 Mounting Hardware

Only for TerraStat® TS500 & TS510 models

“C” Clamp

Part Number	Description	Weight
BKT-CC	Bracket, Stainless Steel, C Clamp Type, for Flat Stock or Corner Angle with 3/8”-16 Thread	8.0 oz (226.8 g)



Mounting Bracket

NOTE

- Refer to [Section 2](#) “Heavy Duty Mounting Brackets” for further information on our bracket systems.

TerraStreamer®

Early Streamer Emission (ESE) Terminals

Introduction

ALLTEC is proud to offer our new line of Early Streamer Emission (ESE) terminals for structural lightning protection. The TerraStreamer® ESE utilizes advanced streamer generating design elements to provide lightning protection to facilities that would otherwise be difficult or cost prohibitive to protect by conventional means.

The TerraStreamer® ESE Lightning Terminal is an externally mounted, proactive, structural lightning protection device and is designed to activate itself in the moments directly preceding an imminent direct strike. The installation of a TerraStreamer® ESE Terminal combines the best advantages of two systems: the direct path to ground of a conventional lightning protection system and state-of-the-art ESE technology employed in the TerraStreamer®'s physical design.

The TerraStreamer® ESE terminal is scientifically designed and rigorously tested to provide exceptional performance, durability and long service life.



Features

- Wide variety of mounting hardware is available for easy installation
- Suitable for use with lightning protection cable or copper tape
- Competitively priced
- Available in five models for all applications
- Rugged yet aesthetically pleasing construction
- Suitable for most environments, including corrosive atmospheres
- Lightweight and low wind loading
- Reliable performance in all weather conditions
- Tested and certified to internationally accepted standards
- Complete design services available
- Passed 150kA testing

A Certificate of Protection Radius and Fulfillment of standards NF C 17-102 and UNE 21 186 for each model and level

- Certificate of Withstand Current
- Certificate of Gain in Triggering Time
-



* Physical Features Include: Electrostatic charge accumulation plates, made from anodized aluminum with insulator seals.

ALLTEC has developed the TerraStreamer® product according to internationally recognized standards. However, ALLTEC does not make any specific performance guarantees as no lightning protection system can be 100% effective.

Protection Radius

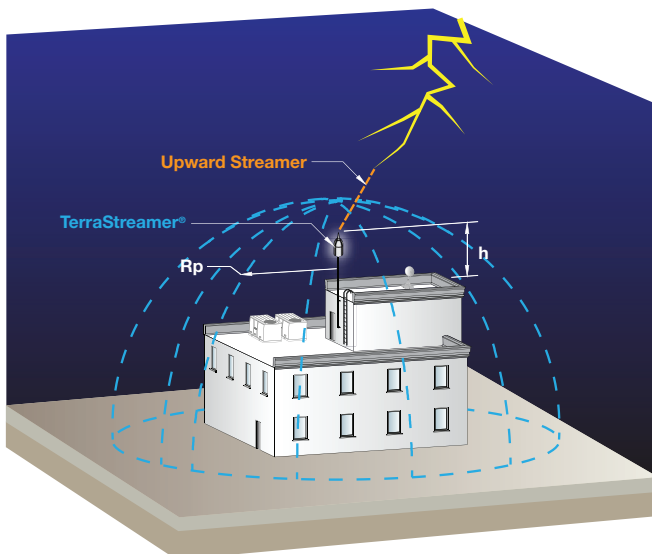
The ESE Principle

The principle of operation for ESE terminals is to create an upward propagating streamer earlier than conventional air terminals or other objects on the earth. The TerraStreamer® does this by collecting and storing ground charge during the initial phase of a thunderstorm development.

Once a thunderstorm begins creating downward step leaders, the ambient electric field intensity in the area of the ESE terminal increases. When this electric field intensifies, it triggers the terminal to release the stored ground charge, forming an upward streamer microseconds earlier than other objects in the immediate area.

This development of an upward streamer earlier in time and space ensures that the TerraStreamer® ESE terminal should be the target of the developing lightning strike. The selection of the TerraStreamer® model, placement, and mounting height above the protected area all factor into formulas calculating the dimensions of the protection area.

The standard protection radius R_p of the TerraStreamer® is linked (according to NF C 17-102 standard) to ΔT , to the protection levels I, II, III, or IV and to the height of the TerraStreamer above the protected structure (H , defined by NF C-102 as a minimum of 2 m). The NF C-102 standard includes four levels of protection.



Protection Areas						
	Height (m)	TSP20 (Rp)	TSP30 (Rp)	TSP40 (Rp)	TSP50 (Rp)	TSP60 (Rp)
Level I	2	16	20	25	30	32
	3	24	30	37	44	48
	4	31	40	50	59	63
	5	39	50	62	73	79
	6	40	50	62	74	79
	8	40	51	63	74	79
	10	41	51	63	74	80
Level II	2	18	23	28	32	35
	3	27	35	42	48	52
	4	36	47	55	64	70
	5	45	58	69	80	87
	6	47	58	69	80	87
	8	47	59	70	81	88
	10	48	60	71	81	88
Level III	2	22	27	32	37	39
	3	33	40	48	56	59
	4	43	53	64	74	78
	5	54	66	80	92	97
	6	54	66	80	92	98
	8	56	68	81	93	99
	10	57	69	82	94	99
Level IV	2	25	30	36	41	43
	3	37	45	53	61	64
	4	49	59	71	81	86
	5	61	74	88	101	107
	6	62	74	89	102	107
	8	63	76	90	103	108
	10	63	77	91	104	109

Additional Levels

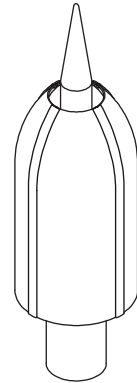
Level 1+: Structure with a roof protected by an ESE air terminal. The whole constituted by ESE, down conductor(s) and earthing system(s), is connected to continuous metal framework or in concrete of the structure which are used as additional natural down conductors.

Level 1 ++: Structure with roof protected by ESE level 1+ with protection radius reduction by 40% and ensuring a complete protection from the materials on the roof against direct lightning.

Models

TerraStreamer® Early Streamer Emission (ESE) Terminals

Part Number	Description	Weight
TSP-20	TerraStreamer® 20, Early Streamer Emission Terminal	4.88 lbs (2.2 kg)
TSP-30	TerraStreamer® 30, Early Streamer Emission Terminal	4.88 lbs (2.2 kg)
TSP-40	TerraStreamer® 40, Early Streamer Emission Terminal	4.88 lbs (2.2 kg)
TSP-50	TerraStreamer® 50, Early Streamer Emission Terminal	4.88 lbs (2.2 kg)
TSP-60	TerraStreamer® 60, Early Streamer Emission Terminal	4.88 lbs (2.2 kg)



Triggering Time Test Results

The triggering time ΔT (μs) is defined as the gain at the sparkover instant obtained with a TerraStreamer® ESE terminal compared with a simple rod terminal exposed to the same conditions. According to NF C 17-102: The triggering time instance gain ΔT is associated with a triggering time distance gain ΔL .

$\Delta L = V \times \Delta T$ where:

ΔL (m): gain in lead distance of the sparkover distance.

V (m/ μs): the average speed of the downward tracer (1 m/ μs).

ΔT (μs) : gain in sparkover time of the upward leader.

Triggering Time Test Results		
Model	Advance Time	Gain in Lead Distance
TSP20	22 μs	22 m
TSP30	32 μs	32 m
TSP40	44 μs	44 m
TSP50	55 μs	55 m
TSP60	61 μs	61 m

NOTE

All figures derived from independent testing as per NF C 17-102 specifications under strict laboratory conditions.

Stainless Steel Masts

Masts for TerraStat®, TerraStreamer®, and Air Terminals

Stainless Steel Masts - 2" O.D. x .12" wall 1.76" I.D

Part Number	Description	Weight
MAST-SS-2-5-HD	Mast, Stainless Steel, 2 Inch, 5 Foot, For Terrastreamer®, TerraStat®, or Air Terminal, Heavy Duty	12.5 lbs (5.7 kg)
MAST-SS-2-10-HD	Mast, Stainless Steel, 2 Inch, 10 Foot, For Terrastreamer®, TerraStat®, or Air Terminal, Heavy Duty	25.0 lbs (11.3 kg)
MAST-SS-2-15-HD	Mast, Stainless Steel, 2 Inch, 15 Foot, For Terrastreamer®, TerraStat®, or Air Terminal, Heavy Duty	37.5 lbs (17.0 kg)
MAST-SS-2-20-HD	Mast, Stainless Steel, 2 Inch, 20 Foot, For Terrastreamer®, TerraStat®, or Air Terminal, Heavy Duty	50.0 lbs (22.7 kg)

NOTE

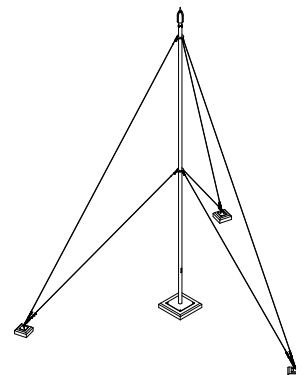
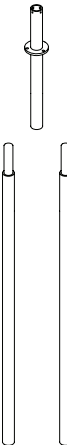
TSP Adapter O.D:1.6"

FRP Masts

Part Number	Description	Weight
MAST-FRP-3-2-GUY	Mast, FRP, 3 ft length, 2 in Diameter, With Guy Ring	3.5 lbs (1.6 kg)
MAST-FRP-7-2	Mast, FRP, 7 ft length, 2 in Diameter	8.0 lbs (3.6 kg)
MAST-FRP-7-2-TH	Mast, FRP, 7 ft length, 2 in Diameter with Conductor Slot	8.0 lbs (3.6 kg)

FRP Guy Wire Mast Kits

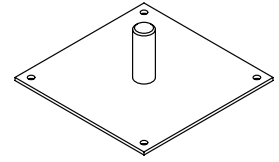
Part Number	Description	Weight
MAST-FRP-GUY-KIT-10	FRP-10 ft Mast With ,45' of 3/16 CABLE, 3 Turnbuckles, 3 Thimbles 3 D Clamps, 12 U Clamps, 6 AF Sleeves, 3 Anchor Plates	22.8 lbs (10.3 kg)
MAST-FRP-GUY-KIT-17	FRP-17 ft Mast With, 60' of 3/16 Cable, 3 Turnbuckles, 3 Thimbles 3 D Clamps, 12 U Clamps, 6 AF Sleeves, 3 Anchor Plates	30.2 lbs (13.7 kg)
MAST-FRP-GUY-KIT-24	FRP-24 ft Mast With, 75' of 3/16 CABLE, 3 Turnbuckles, 3 Thimbles 3 D Clamps, 12 U Clamps, 6 AF Sleeves, 3 Anchor Plates	37.5 lbs (17.0 kg)



Mount Bases

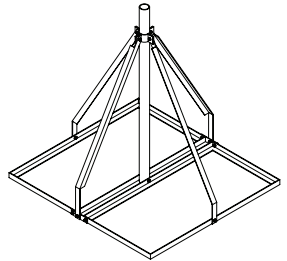
Aluminum Mast Base

Part Number	Description	Weight
FRP-12-8-BASE	Base, Aluminum 12" by 12", 1-1/2" X 8" Mast Stud With (4) 1/2" Mounting Bolts, For Use With Guy Wires ONLY	4.25 lbs (1.93 kg)



Non Penetrating Ballast Mount Base

Part Number	Description	Weight
BS-GS-36-48-NP	Base-Galvanized Steel, 36"L, 36"W, 48"H, Non Penetrating	30.0 lbs (13.6 kg)



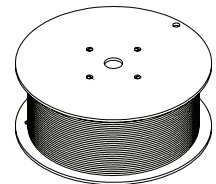
NOTE

- This base requires eight cement blocks or equivalent to weigh down the base.

FRP Guy Wire Kit Accessories and Hardware

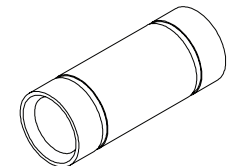
Guy Wire Cable

Part Number	Description	Weight
CBL-SS-3/16-GUY	Cable, Stainless Steel, 3/16, Guy Wire	5.5 oz (160.0 g) (per ft.)



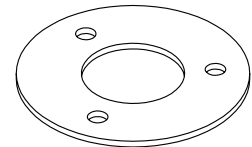
Anti Fray Sleeve

Part Number	Description	Weight
SLV-GUY-CBL	Sleeve, Guy Cable, Anti-Fray	2 oz (5.67 g)



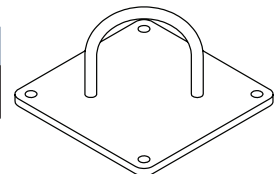
Guy Wire Ring

Part Number	Description	Weight
RNG-4-3GUY-FRP	Ring, 4", 3 Guy Wire, for FRP Masts	8.8 oz (0.25 kg)



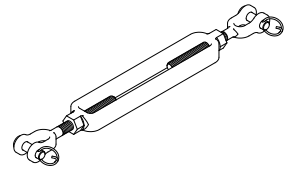
GI Anchor Plate

Part Number	Description	Weight
PLT-SS-3-GUY-ANC-FRP	Plate, Stainless Steel, 3" by 3", Guy Anchor, for FRP Masts	22 oz (0.62 kg)



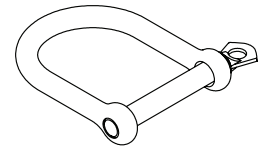
Turnbuckle Clamp

Part Number	Description	Weight
GUY-SS-CL-TB	Clamp, Stainless Steel, 4" Turn Buckle, for FRP Masts	3.5 oz (100 g)



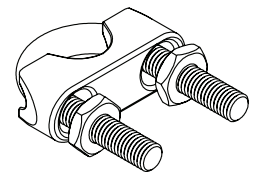
"D" Clamp

Part Number	Description	Weight
GUY-SS-CL-D	Clamp, Stainless Steel, D Type, for FRP Masts	1.4 oz (40 g)



"U" Clamp

Part Number	Description	Weight
GUY-SS-CL-U	Clamp, Stainless Steel, U Type, for FRP Masts	0.7 oz (20 g)



Adhesive

Part Number	Description	Weight
ADH-FRP	Adhesive, 2 Part, for use on FRP Masts	17.6 oz (500 g)



NOTE

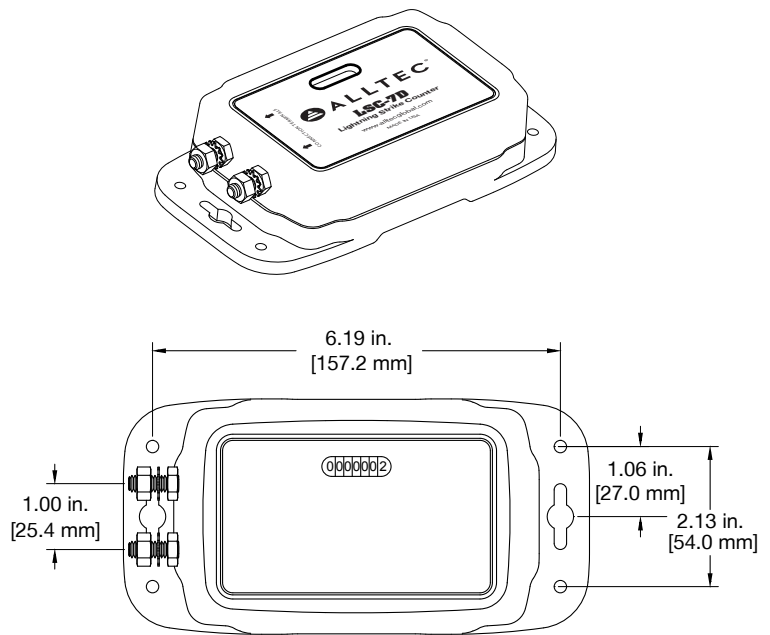
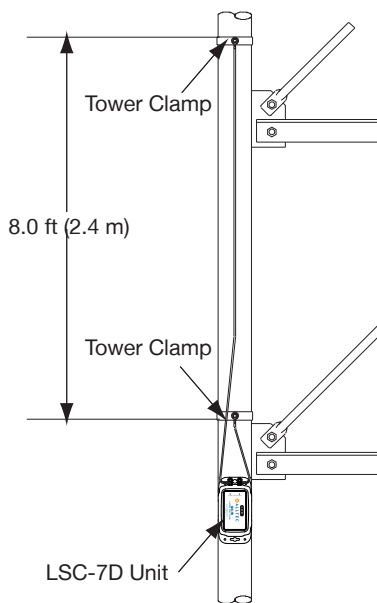
- Refer to [Section 2](#) for further information on our mounting bracket systems.

Lightning Strike Counter

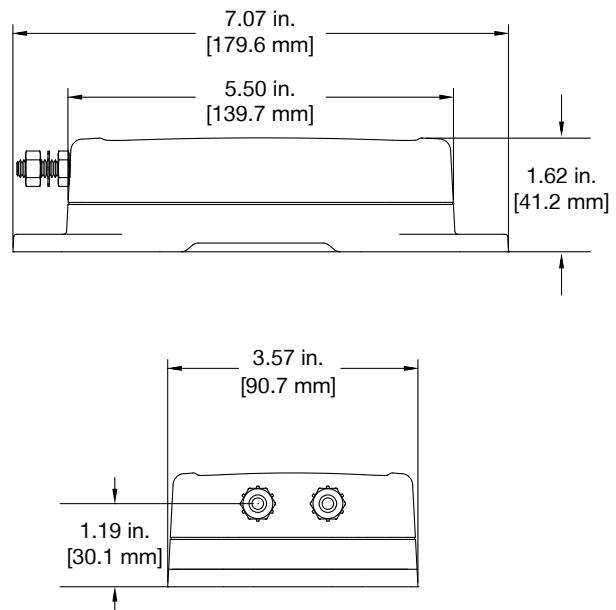
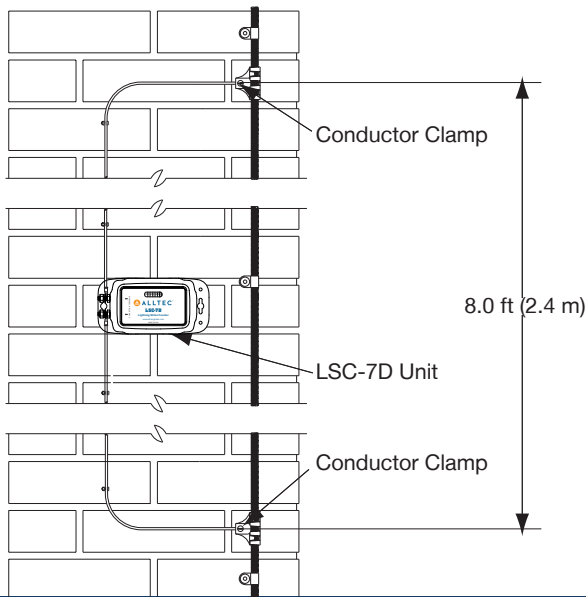
The counter displays the number of lightning strikes that have hit a system. The counter is for use on tower legs or cable conductors. It connects to two points on the conductor, spaced at least 8 feet apart, using 14 AWG (25 mm²) insulated wire. Features include weatherproof NEMA 4X & IP65 enclosure, internal protection, and seven digit readout. This device easily mounts to any flat surface. The Lightning Strike Counter LSC-7D is acceptable for outdoor use.

Part Number	Description	Weight
LSC-7D	Lightning Strike Counter	5 oz (141.75 g)

Tower Model



Building Model



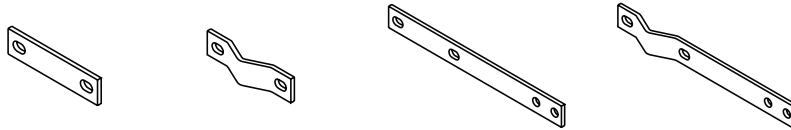


Section 2

Heavy Duty Mounting Brackets

Heavy Duty Mounting Brackets

Made completely of high quality 1/4" thick heavy duty 304 stainless steel for copper systems, with aluminum adaptors for aluminum systems, the modular construction of this mounting hardware system offers incredible strength, flexibility and utility for a wide variety of applications.



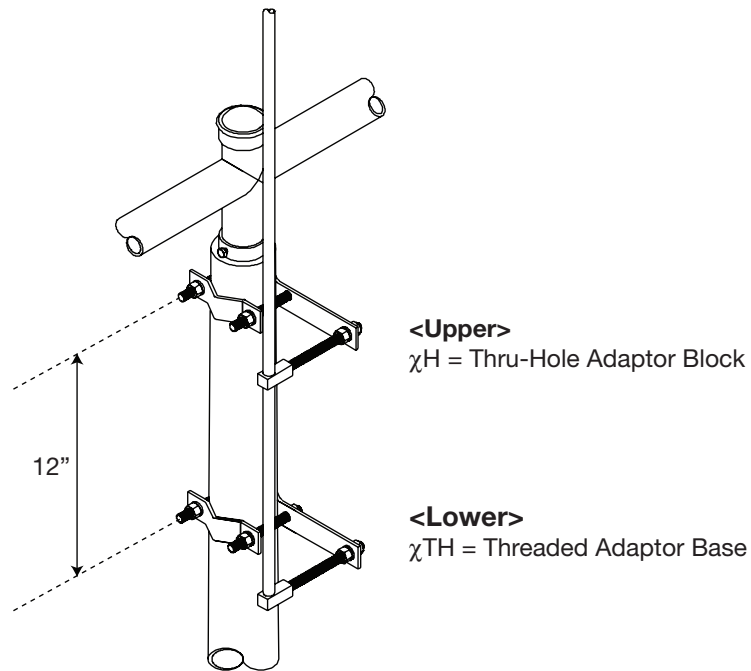
Bracket Assembly

Selecting the appropriate Heavy Duty Mounting Brackets and Hardware for your application is easy!

Remember, two BKT assemblies- typically spaced twelve inches apart, are needed to provide support for TerraStat® air terminals. To accommodate for angled or tapered mounting, order the adjustable BKT-AT series or calculate two extension lengths to create almost any non-parallel mount slant.

< For Typical Mounting of Bracket Sets >

BKT-EX Series



Example of use: 4" Extended Brackets

NOTE

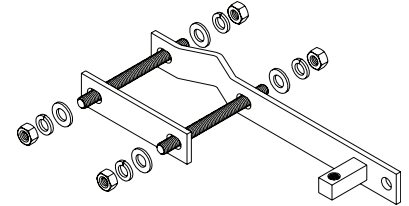
- BKT-AT Series may be easily adjusted for angled or tapered mounting.

Part Numbering System

To create a part number, follow the format as follows: **BKT-T-S-E-L-B** (See chart on next page for details).
 To order, simply follow the steps below to specify the type and size of the brackets.

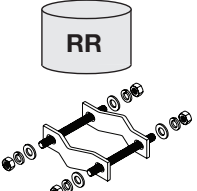
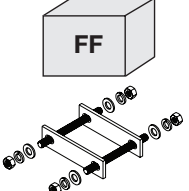
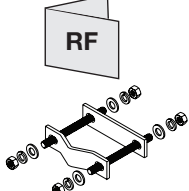
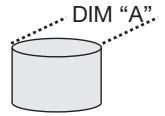
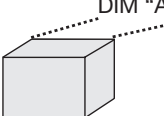
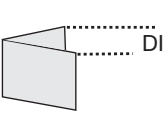
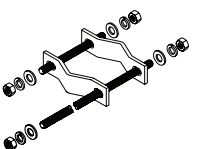
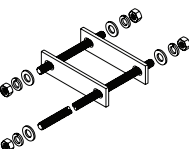
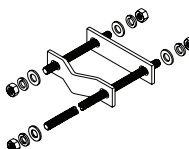
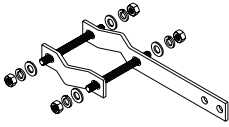
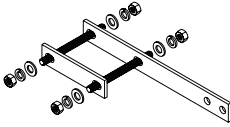
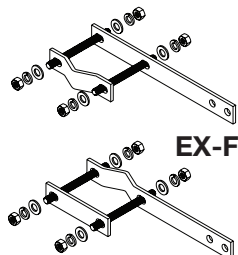
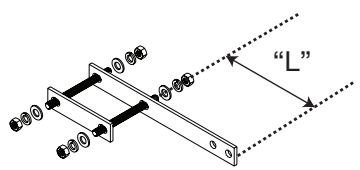
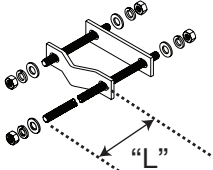
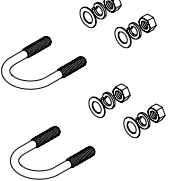
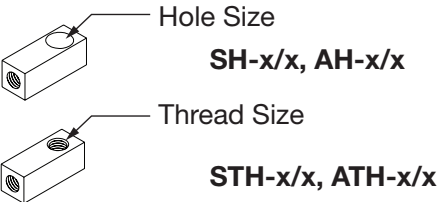
Example: BKT-RF-24-EX-R-4-STH-1/2

BKT - RF - 24 - EX-R - 4 - STH-1/2
 (1) - (2) - (3) - (4) - (5) - (6)



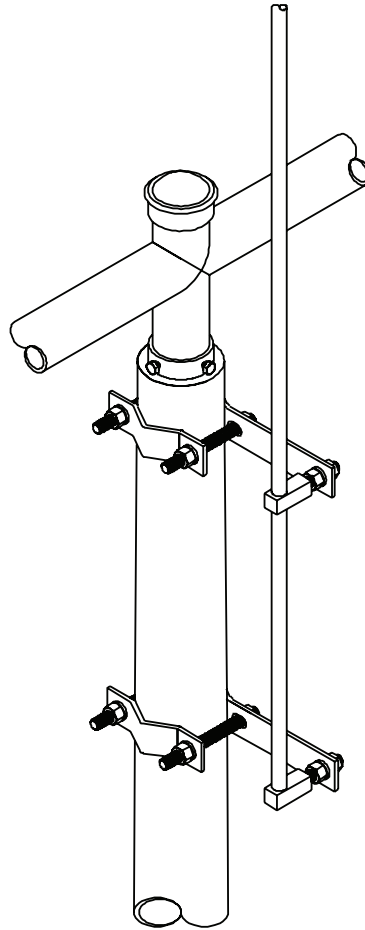
(1) Component	BKT = Bracket
(2) Type:	First, Determine the Type (shape) of the pole, mast or tower leg to which attachment is to be made: RR = Round FF = Square/Rectangular RF = Corner Angle
(3) Size:	Indicate Clamp Size required (Dimension "A"): 24 = 2" - 4" 46 = 4" - 6" 68 = 6" - 8" 810 = 8" - 10" 1012 = 10" - 12" 1214 = 12" - 14"
(4) Extension:	Indicate Bracket/All-Thread Extension - EX-Series or AT-Series EX-R = Round Bracket Extension EX-F = Flat Bracket Extension AT = All-Thread Extension
(5) Length:	Select Extension Length "L" 4 = 4" 6 = 6" 8 = 8" 10 = 10" 12 = 12"
(6) Bracket Attachment:	Select Bracket Attachment Type: Uxx = "U"-Bolt (xx = Overall Diameter of rod, pipe, etc... i.e. U10 = 1", U20 = 2") SH-x/x = Stainless Steel Thru-Hole Adaptor Block AH-x/x = Aluminum Thru-Hole Adaptor Block STH-x/x = Stainless Steel Threaded Adaptor Base ATH-x/x = Aluminum Threaded Adaptor Base (x/x = Based upon air terminal/shaft diameter & Specifications: 1/2 = 1/2" Diameter, 5/8 = 5/8" Diameter, 3/4 = 3/4" Diameter)

How to Create Your Bracket Set

BKT-T-S-E-L-B			
<p>-T Type</p>	<p>RR Series</p> 	<p>FF Series</p> 	<p>RF Series</p> 
<p>-S Size</p>	<p>DIM "A"</p> 	<p>DIM "A"</p> 	<p>DIM "A"</p> 
<p>-E Extension</p>	<p>AT Series</p> 		
	<p>EX Series</p>  <p>EX-R</p>	 <p>EX-F</p>	 <p>EX-F EX-R</p>
<p>-L Extension Length</p>			
<p>-B Bracket Attachment</p>	 <p>Uxx Uxx</p>		 <p>Hole Size SH-x/x, AH-x/x</p> <p>Thread Size STH-x/x, ATH-x/x</p>

Bracket Set

Qty 1- **BKT-RR-24-EX-R-4-SH** plus Qty 1- **BKT-RR-24-EX-R-4-STH**, creates a Heavy Duty Mounting Bracket set for use on a 2"-4" round pole, with a 4" offset extension for a TerraStat® Charge Dissipation Air Terminal.



Weight Chart

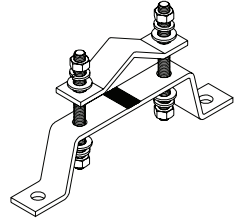
This chart shows the weight of the bracket set including the bolts, nuts, and washers.

Clamp Diameter "A"	Type	Extension Length "L"											
		0"		4"		6"		8"		10"		12"	
		lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg
2" - 4"	EX	1.13	0.51	1.41	0.64	1.55	0.70	1.69	0.77	1.83	0.83	1.98	0.90
	AT	1.13	0.51	1.25	0.57	1.31	0.59	1.38	0.63	1.44	0.65	1.50	0.68
4" - 6"	EX	1.41	0.64	1.69	0.77	1.84	0.83	1.98	0.90	2.12	0.96	2.26	1.03
	AT	1.41	0.64	1.54	0.77	1.60	0.73	1.66	0.75	1.72	0.78	1.82	0.83
6" - 8"	EX	1.69	0.77	1.97	0.89	2.12	0.96	2.26	1.03	2.40	1.09	2.54	1.15
	AT	1.69	0.77	1.82	0.83	1.88	0.85	1.94	0.88	2.00	0.91	2.06	0.93
8" - 10"	EX	1.98	0.90	2.26	1.03	2.40	1.11	2.55	1.16	2.69	1.22	2.83	1.28
	AT	1.98	0.90	2.11	0.96	2.17	0.98	2.23	1.01	2.29	1.04	2.36	1.03

Mounting Brackets

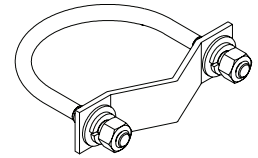
Heavy Duty Universal Wall Mount Bracket

Part Number	Description	Weight
BKT-WM-24	Bracket, Stainless Steel, Wall-Mount, Universal, 2" to 4" clamp size	3.0 lbs (1.4 kg)



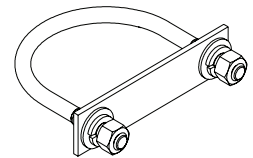
Round Member Mounting Brackets

Part Number	Description	Weight
BKT-RU-12	Bracket, Stainless Steel, Round Member, 1" to 2" I.D.	1.6 lbs (0.7 kg)
BKT-RU-24	Bracket, Stainless Steel, Round Member, 2" to 4" I.D.	2.7 lbs (1.2 kg)
BKT-RU-46	Bracket, Stainless Steel, Round Member, 4" to 6" I.D.	4.8 lbs (2.2 kg)



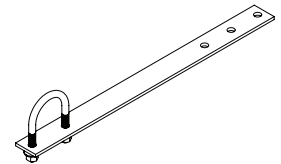
Flat Member Mounting Brackets

Part Number	Description	Weight
BKT-FU-12	Bracket, Stainless Steel, Flat Member, 1" to 2" I.D.	1.6 lbs (0.7 kg)
BKT-FU-24	Bracket, Stainless Steel, Flat Member, 2" to 4" I.D.	2.7 lbs (1.2 kg)
BKT-FU-46	Bracket, Stainless Steel, Flat Member, 4" to 6" I.D.	4.8 lbs (2.2 kg)



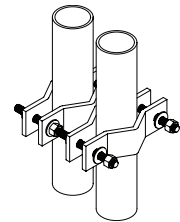
Flat Wall Corner Brackets

Part Number	Description	Weight
BKT-FU-1	Bracket, Stainless Steel, Flat Wall, Corner, 1" I.D., U-Bolt, 18"	4.5 lbs (2.0 kg)
BKT-FU-2	Bracket, Stainless Steel, Flat Wall, Corner, 2" I.D., U-Bolt, 18"	5.0 lbs (2.3 kg)



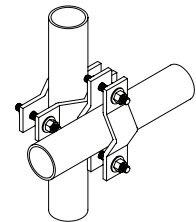
Pipe Mount Bracket - Vertical

Part Number	Description	Weight
BKT-RR-24-DV	Bracket, Stainless Steel, Pipe Mount, 2" to 4" O.D., Vertical	3.4 lbs (1.5 kg)



Pipe Mount Bracket - Horizontal

Part Number	Description	Weight
BKT-RR-24-DVH	Bracket, Stainless Steel, Pipe Mount, 2" to 4" O.D., Horizontal	3.4 lbs (1.5 kg)





Section 3

Traditional Lightning Protection

Lightning Protection Conductors

Class I & II Conductors

* UL-96A & NFPA-780



32S

Part Number	Description	Weight	Diameter
32S	Conductor, Copper, 32 Strand, 17 GA, Class I	Approximate weight per 1,000 feet 215 pounds (97.5 kg/304.8 m)	Diameter 15/32"; No. 2 size; 65,600 circular mils.

32T (Tinned copper conductor cable used on chimneys & other locations where resistance to corrosion is necessary.)

Part Number	Description	Weight	Diameter
32T	Conductor, Copper, 32 Strand, 17 GA, Class I, Tinned	Approximate weight per 1,000 feet 250 pounds (113.4 kg/304.8 m)	Diameter 15/32; No. 2 size; 65,600 circular mils.

22

Part Number	Description	Weight	Diameter
22	Conductor, Copper, 14 Strand, 17 GA, Miniature	Approximate weight per 1,000 feet 90 pounds (40.8 kg/304.8 m)	Diameter 1/4"; No.6 size; 28,500 circular mils.

40

Part Number	Description	Weight	Diameter
40	Conductor, Copper, 28 Strand, .066 Dia., Class II	Approximate weight per 1,000 feet 375 pounds (170.1 kg/304.8 m)	Diameter 1/2"; No. 1/0 size; 122,000 circular mils.

40L (Lead coated copper conductor cable used on chimneys & other locations where resistance to corrosion is necessary.)

Part Number	Description	Weight	Diameter
40L	Conductor, Copper, 28 Strand, .066 Dia., Class II, Lead Coated	Approximate weight per 1,000 feet 405 pounds (183.7 kg/304.8 m)	Diameter 1/2"; No. 1/0 size; 122,000 circular mils.

A28

Part Number	Description	Weight	Diameter
A28	Conductor, Aluminum, 28 Strand, 14 GA, Class I	Approximate weight per 1,000 feet 130 pounds (58.9 kg/304.8 m)	Diameter 1/2"; No. 1/0 size; 115,080 circular mils.

A30

Part Number	Description	Weight	Diameter
A30	Conductor, Aluminum, 37 Strand, .0756 Dia., Class II	Approximate weight per 1,000 feet 200 pounds (90.7 kg/304.8 m)	Diameter 9/16"; No. 4/0 size; 211,600 circular mils.

AG4

Part Number	Description	Weight	Diameter
AG4	Conductor, Aluminum, 10 Strand, 14 GA, Miniature	Approximate weight per 1,000 feet 39 pounds (17.7 kg/304.8 m)	Diameter 5/16"; Size No. 4; 43,000 circular mils.

Air Terminals & Air Terminal Bases

Class I & II Air Terminals

All Air Terminals in this section meet or exceed the material specifications and requirements of Underwriters Laboratories, Inc., (UL®) and the Lightning Protection Institute (LPI). All 5/8" Air Terminals are machined to 5/8" - 11 UNC Threads – Standard. All 1/2" Air Terminals are machined to 1/2" - 13 UNC and 3/8" Air Terminals are machined to 3/8" - 16 UNC threads standards.

Part Number	Description	Weight
1012	Air Terminal, Solid Copper, 3/8" Dia., 12"	6.8 oz (0.19 kg)
1016	Air Terminal, Solid Copper, 3/8" Dia., 16"	9.2 oz (0.26 kg)
1018	Air Terminal, Solid Copper, 3/8" Dia., 18"	10.3 oz (0.29 kg)
1024	Air Terminal, Solid Copper, 3/8" Dia., 24"	13.8 oz (0.39 kg)
1036	Air Terminal, Solid Copper, 3/8" Dia., 36"	1.31 lbs (0.59 kg)
1048	Air Terminal, Solid Copper, 3/8" Dia., 48"	1.71 lbs (0.77 kg)

Part Number	Description	Weight
1112	Air Terminal, Solid Copper, 1/2" Dia., 12"	12.1 oz (0.34 kg)
1116	Air Terminal, Solid Copper, 1/2" Dia., 16"	1.02 lbs (0.46 kg)
1118	Air Terminal, Solid Copper, 1/2" Dia., 18"	1.08 lbs (0.48 kg)
1124	Air Terminal, Solid Copper, 1/2" Dia., 24"	1.54 lbs (0.69 kg)
1136	Air Terminal, Solid Copper, 1/2" Dia., 36"	2.31 lbs (1.04 kg)
1148	Air Terminal, Solid Copper, 1/2" Dia., 48"	3.06 lbs (1.38 kg)

Part Number	Description	Weight
1212	Air Terminal, Solid Copper, 5/8" Dia., 12"	1.18 lbs (0.53 kg)
1216	Air Terminal, Solid Copper, 5/8" Dia., 16"	1.58 lbs (0.71 kg)
1218	Air Terminal, Solid Copper, 5/8" Dia., 18"	1.78 lbs (0.80 kg)
1224	Air Terminal, Solid Copper, 5/8" Dia., 24"	2.37 lbs (1.07 kg)
1236	Air Terminal, Solid Copper, 5/8" Dia., 36"	3.56 lbs (1.61 kg)
1248	Air Terminal, Solid Copper, 5/8" Dia., 48"	4.75 lbs (2.15 kg)

Part Number	Description	Weight
1112A	Air Terminal, Aluminum, 1/2" Dia., 12"	3.6 oz (0.10 kg)
1116A	Air Terminal, Aluminum, 1/2" Dia., 16"	4.9 oz (0.14 kg)
1118A	Air Terminal, Aluminum, 1/2" Dia., 18"	5.6 oz (0.16 kg)
1124A	Air Terminal, Aluminum, 1/2" Dia., 24"	7.1 oz (0.20 kg)
1136A	Air Terminal, Aluminum, 1/2" Dia., 36"	10.8 oz (0.30 kg)

NOTE

- Please add suffix letter; ‘B’ to part number for Blunt Tips, ‘T’ to part number for Tin Plating, ‘and L’ to part number for Lead coating.
- All threads .75" standard length, otherwise add suffix THDX, where X is the non-standard length in decimal inches.



Part Number	Description	Weight
1148A	Air Terminal, Aluminum, 1/2" Dia., 48"	14.2 oz (0.40 kg)

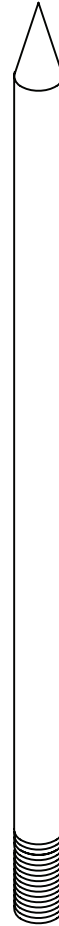
Class I & II Air Terminals (Continued)

Part Number	Description	Weight
1212A	Air Terminal, Aluminum, 5/8" Dia., 12"	5.6 oz (0.16 kg)
1216A	Air Terminal, Aluminum, 5/8" Dia., 16"	7.1 oz (0.20 kg)
1218A	Air Terminal, Aluminum, 5/8" Dia., 18"	8.6 oz (0.24 kg)
1224A	Air Terminal, Aluminum, 5/8" Dia., 24"	11.0 oz (0.31 kg)
1236A	Air Terminal, Aluminum, 5/8" Dia., 36"	1.03 lbs (0.46 kg)
1248A	Air Terminal, Aluminum, 5/8" Dia., 48"	1.37 lbs (0.63 kg)

Part Number	Description	Weight
1218S	Air Terminal, Stainless Steel, 5/8" Dia., 18"	1.5 lbs (0.68 kg)
1224S	Air Terminal, Stainless Steel, 5/8" Dia., 24"	2.0 lbs (0.90 kg)
1236S	Air Terminal, Stainless Steel, 5/8" Dia., 36"	3.0 lbs (1.36 kg)
1248S	Air Terminal, Stainless Steel, 5/8" Dia., 48"	4.0 lbs (1.81 kg)

NOTE

- Please add suffix letter; 'B' to part number for Blunt Tips, 'T' to part number for Tin Plating, 'and L' to part number for Lead coating.
- All threads .75" standard length, otherwise add suffix THDX, where X is the non- standard length in decimal inches.

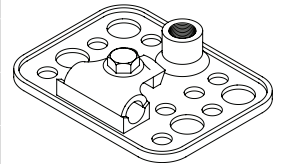


Air Terminal Bases

Adhesive Air Terminal Bases

Used for mounting on membrane or built-up roofs. Mounted with adhesive or plastic roofing cement. The cast base has a mechanical conductor connector.

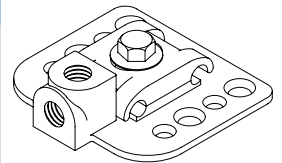
Part Number	Description	Weight
2003	Base, Bronze, 3/8"-16 Threaded I.D., Adhesive type, for Air Terminal	13.9 oz (394.1 g)
2005	Base, Copper Alloy, 1/2"-13 Threaded I.D., Adhesive type, for Air Terminal	14.8 oz (419.6 g)
2005A	Base, Aluminum, 1/2"-13 Threaded I.D., Adhesive type, for Air Terminal	4.7 oz (133.2 g)
2007	Base, Bronze, 5/8"-11 Threaded O.D., Adhesive type, for Air Terminal	15.8 oz (447.9 g)
2007A	Base, Aluminum, 5/8"-11 Threaded O.D., Adhesive type, for Air Terminal	4.8 oz (136.1 g)



Universal Surface Bases

Used for mounting on a flat surface or against the inside of vertical walls. Can be mounted with adhesive or fasteners.

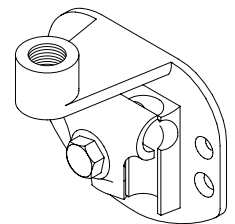
Part Number	Description	Weight
2013	Base, Bronze, 3/8"-16 Threaded I.D., Flat Surface, for Air Terminal	13.1 oz (371.4 g)
2015	Base, Copper Alloy, 1/2"-13 Threaded I.D., Flat Surface, for Air Terminal	10.9 oz (309.0 g)
2015A	Base, Aluminum, 1/2"-13 Threaded I.D., Flat Surface, for Air Terminal	4.2 oz (119.1 g)



Offset Parapet Air Terminal Bases

Used for vertical mounting against the inside parapet wall. Base has a 1-1/2" offset to clear coping on parapet wall.

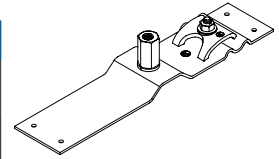
Part Number	Description	Weight
2033	Base, Bronze, 3/8"-16 Threaded I.D., Offset for Parapet, for Air Terminal	13 oz (36.85 g)
2035	Base, Copper Alloy, 1/2"-13 Threaded I.D., Offset for Parapet, for Air Terminal	12.8 oz (362.9 g)
2035A	Base, Aluminum, 1/2"-13 Threaded I.D., Offset for Parapet, for Air Terminal	4.3 oz (121.9 g)
2037	Base, Bronze, 5/8"-11 Threaded I.D., Offset for Parapet, for Air Terminal	13.1 oz (371.4 g)
2037A	Base, Aluminum, 5/8"-11 Threaded I.D., Offset for Parapet, for Air Terminal	4.1 oz (116.2 g)



Standard Ridge Bases

Allows for easy fitting along a roof ridge. The standard base has a 5/8" O.D. thread for air terminal fastening and mechanical conductor connector.

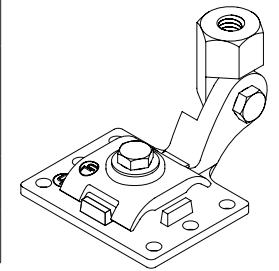
Part Number	Description	Weight
2100	Base, Copper, 5/8"-11 Threaded O.D., 12", Ridge Type, for Air Terminal	11.7 oz (331.7 g)
2100A	Base, Aluminum, 5/8"-11 Threaded O.D., 12", Ridge Type, for Air Terminal	5.9 oz (167.39 g)



Adjustable Bases

A swivel neck allows mounting on any roof pitch while keeping the air terminal level. The base has a mechanical conductor connector.

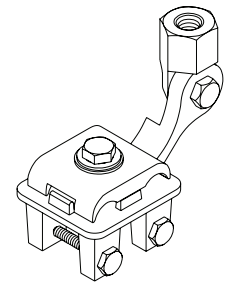
Part Number	Description	Weight
2127-38	Base, Bronze, Adjustable, 3/8"-16 Threaded I.D., for Air Terminal	15.5 oz (436 g)
2127-12	Base, Copper Alloy, Adjustable, 1/2"-13 Threaded I.D., for Air Terminal	15.5 oz (436 g)
2127A-12	Base, Aluminum, Adjustable, 1/2"-13 Threaded I.D., for Air Terminal	5.1 oz (144.6 g)
2127-58	Base, Bronze, Adjustable, 5/8"-11 Threaded I.D., for Air Terminal	15.5 oz (436 g)
2127A-58	Base, Aluminum, Adjustable, 5/8"-11 Threaded I.D., for Air Terminal	5.1 oz (144.6 g)



Standing Seam Bases

This cast base for a standing seam roof has a 3/4" groove to fit over most seams. Provided with a swivel adaptor for leveling points. Cable holder is adjustable so cables can run parallel or perpendicular. Two set screws secure base to seam.

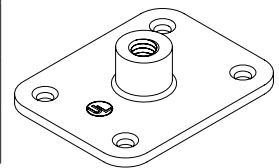
Part Number	Description	Weight
2128	Base, Bronze, 3/8"-16 Threaded I.D., Standing Seam, for Air Terminal	1 lbs (453.6 g)
2129	Base, Copper Alloy, 1/2"-13 Threaded I.D., Standing Seam, for Air Terminal	1.1 lbs (498.9 g)
2129A	Base, Aluminum, 1/2"-13 Threaded I.D., Standing Seam, for Air Terminal	9 oz (255.1 g)



Horizontal Air Terminal Bases

Applicable where placing air terminals on grounded or pre-bonded horizontal metal surfaces. The base has an 8 sq. in. contact surface and four holes for fastening.

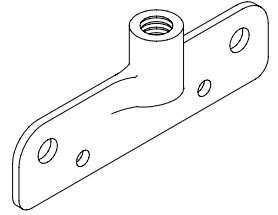
Part Number	Description	Weight
2205	Base, Bronze, 1/2"-13 Threaded I.D., Horizontal, for Air Terminal	7.3 oz (206.9 g)
2205A	Base, Aluminum, 1/2"-13 Threaded I.D., Horizontal, for Air Terminal	2.3 oz (65.2 g)
2206	Base, Bronze, 5/8"-11 Threaded O.D., Horizontal, for Air Terminal	8.1 oz (229.6 g)
2206A	Base, Aluminum, 5/8"-11 Threaded O.D., Horizontal, for Air Terminal	2.3 oz (65.2 g)



Vertical Air Terminal Bases

Applicable when placing air terminals on grounded or pre-bonded vertical metal surfaces. The base has a 4 sq. in. contact surface and four holes for fastening.

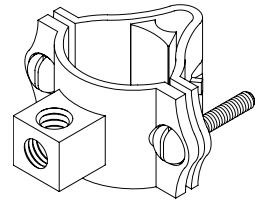
Part Number	Description	Weight
2215	Base, Bronze, 1/2"-13 Threaded I.D., Vertical, for Air Terminal	5.1 oz (144.6 g)
2215A	Base, Aluminum, 1/2"-13 Threaded I.D., Vertical, for Air Terminal	1.4 oz (39.7 g)
2215L	Base, Bronze/Lead-Coated 1/2"-13 Threaded I.D., Vertical, for Air Terminal	5.1 oz (144.6 g)



Universal Pipe Air Terminal Bases

May be used with or without conductor run.

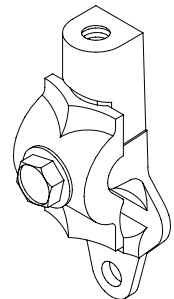
Part Number	Description	Weight
2229U	Base, Bronze, 3/8"-16 Threaded I.D., Min. 1.314" to Max.1.900", Universal, Pipe, for Air Terminal	16.6 oz (470 g)
2231U	Base, Bronze, 1/2"-13 Threaded I.D., Min. 1.314" to Max.1.900", Universal, Pipe, for Air Terminal	16.6 oz (470 g)
2231UA	Base, Aluminum, 1/2"-13 Threaded I.D., Min. 1.314" to Max.1.900", Universal, Pipe, for Air Terminal	6 oz (170 g)
2233U	Base, Bronze, 5/8"-11 Threaded I.D., Min. 1.314" to Max.1.900", Universal, Pipe, for Air Terminal	16.6 oz (470 g)
2233UA	Base, Aluminum, 5/8"-11 Threaded I.D., Min. 1.314" to Max.1.900", Universal, Pipe, for Air Terminal	6 oz (170 g)
2235U	Base, Bronze, 3/8"-16 Threaded I.D., Min. 1.750" to Max. 2.500", Universal, Pipe, for Air Terminal	17.6 oz (498.9 g)
2237U	Base, Bronze, 1/2"-13 Threaded I.D., Min. 1.750" to Max. 2.500", Universal, Pipe, for Air Terminal	17.6 oz (498.9 g)
2237UA	Base, Aluminum, 1/2"-13 Threaded I.D., Min. 1.750" to Max. 2.500", Universal, Pipe, for Air Terminal	6.2 oz (175.8 g)
2239U	Base, Bronze, 5/8"-11 Threaded I.D., Min. 1.750" to Max. 2.500", Universal, Pipe, for Air Terminal	17.6 oz (498.9 g)
2239UA	Base, Aluminum, 5/8"-11 Threaded I.D., Min. 1.750" to Max. 2.500", Universal, Pipe, for Air Terminal	6.2 oz (175.8 g)



Vertical Air Terminal Bases

Base has a mechanical conductor connector that allows both vertical and horizontal cable runs.

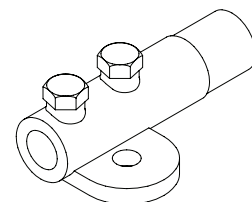
Part Number	Description	Weight
2303	Base, Bronze, 3/8"-16 Threaded I.D., Vertical, for Air Terminal, Chimney Mount	7.8 oz (221.1 g)
2305	Base, Bronze, 1/2"-13 Threaded I.D., Vertical, for Air Terminal, Chimney Mount	7.2 oz (204.1 g)
2305A	Base, Aluminum, 1/2"-13 Threaded I.D., Vertical, for Air Terminal, Chimney Mount	2.6 oz (73.7 g)



Heavy Duty Terminal Bases

A heavy duty base for vertical mounting with multiple applications. The straight base has two stainless steel set screws for clamping conductor concentric to the air terminal.

Former P/N	Description	Weight
2313	Base, Bronze, 3/8"-16 Threaded I.D., Straight, Heavy Duty, for Air Terminal	10.2 oz (289.2 g)
2315	Base, Bronze, 1/2"-13 Threaded I.D., Straight, Heavy Duty, for Air Terminal	9.1 oz (257.9 g)
2315A	Base, Aluminum, 1/2"-13 Threaded I.D., Straight, Heavy Duty, for Air Terminal	3.2 oz (90.7 g)

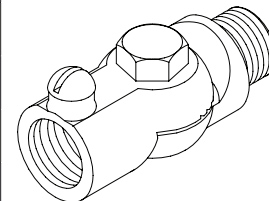


Air Terminal Adaptors

Adjustable Air Terminal Adaptors

The adjustable air terminal adaptor adjusts in a 180 degree range. Also available in tin plated.

Former P/N	Description	Weight
2401	Adaptor, Bronze, 3/8"-16 I.D., 3/8"-16 Threaded I.D., Swivel, Adjustable, for Air Terminal	5.1 oz (144.6 g)
2402	Adaptor, Copper Alloy, 1/2"-13 I.D., 1/2"-13 Threaded O.D., Swivel, Adjustable, for Air Terminal	5.8 oz (164.0 g)
2403	Adaptor, Bronze, 1/2"-13 I.D., 1/2"-13 Threaded I.D., Swivel, Adjustable, for Air Terminal	5.6 oz (158.8 g)
2404	Adaptor, Copper Alloy, 3/8"-16 I.D., 5/8"-11 Threaded O.D., Swivel, Adjustable, for Air Terminal	5.2 oz (147.4 g)
2405	Adaptor, Bronze, 1/2"-13 I.D., 5/8"-11 Threaded O.D., Swivel, Adjustable, for Air Terminal	5.3 oz (150.3 g)
2406	Adaptor, Copper, 5/8"-11 I.D., 5/8"-11 Threaded O.D., Swivel, Adjustable, for Air Terminal	5.3 oz (150.3 g)
2407	Adaptor, Bronze, 1/2"-13 I.D., 5/8"-11 Threaded I.D., Swivel, Adjustable, for Air Terminal	5.3 oz (150.3 g)
2408	Adaptor, Copper Alloy, 1/2"-13 I.D., 5/8"-11 Threaded I.D., Swivel, Adjustable, for Air Terminal	5.2 oz (147.4 g)
2402A	Adaptor, Aluminum, 1/2"-13 I.D., 1/2"-13 Threaded O.D., Swivel, Adjustable, for Air Terminal	2.4 oz (68.0 g)
2403A	Adaptor, Aluminum, 1/2"-13 I.D., 1/2"-13 Threaded I.D., Swivel, Adjustable, for Air Terminal	2.6 oz (73.7 g)
2405A	Adaptor, Aluminum, 1/2"-13 I.D., 5/8"-11 Threaded O.D., Swivel, Adjustable, for Air Terminal	3.1 oz (87.9 g)
2406A	Adaptor, Aluminum, 5/8"-11 I.D., 5/8"-11 Threaded O.D., Swivel, Adjustable, for Air Terminal	1.9 oz (53.9 g)
2407A	Adaptor, Aluminum, 1/2"-13 I.D., 5/8"-11 Threaded I.D., Swivel, Adjustable, for Air Terminal	1.9 oz (53.9 g)

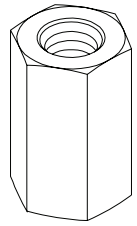


NOTE

- Please contact your representative for orders requiring different configurations and sizes.

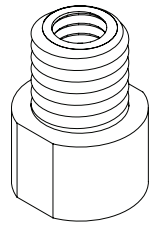
Air Terminal Adaptors

Part Number	Description	Weight
2411	Adaptor, Bronze, 3/8"-16 I.D., 3/8"-16 Threaded I.D.	2.4 oz (68.0 g)
2412	Adaptor, Bronze, 3/8"-16 I.D., 1/2"-13 Threaded I.D.	2.0 oz (56.7 g)
2413	Adaptor, Bronze, 3/8"-16 I.D., 5/8"-11 Threaded I.D.	2.3 oz (65.2 g)
2414	Adaptor, Bronze, 1/2"-13 I.D., 1/2"-13 Threaded I.D.	2.4 oz (68.0 g)
2415	Adaptor, Bronze, 1/2"-13 I.D., 5/8"-11 Threaded I.D.	2.2 oz (62.4 g)
2416	Adaptor, Bronze, 5/8"-11 I.D., 5/8"-11 Threaded I.D.	1.4 oz (39.7 g)
2414A	Adaptor, Aluminum, 1/2"-13 I.D., 1/2"-13 Threaded I.D.	2.2 oz (62.4 g)
2415A	Adaptor, Aluminum, 1/2"-13 I.D., 5/8"-11 Threaded I.D.	1.0 oz (28.3 g)
2416A	Adaptor, Aluminum, 5/8"-11 I.D., 5/8"-11 Threaded I.D.	1.0 oz (28.3 g)



Concealed Air Terminal Adaptors

Part Number	Description	Weight
2423	Adaptor, Bronze, 5/8"-11 O.D., 3/8"-16 Threaded I.D. Top and Bottom	2.5 oz (70.9 g)
2425	Adaptor, Bronze, 5/8"-11 O.D. Top, 1/2"-13 Threaded I.D. Bottom	2.2 oz (62.4 g)
2425A	Adaptor, Aluminum, 5/8"-11 O.D. Top, 1/2"-13 Threaded I.D. Bottom	1.0 oz (28.3 g)
2426	Adaptor, Bronze, 1/2"-13 Threaded I.D. Top and Bottom	2.2 oz (62.4 g)
2426A	Adaptor, Aluminum, 1/2"-13 Threaded I.D. Top and Bottom	1.0 oz (28.3 g)

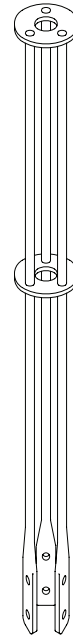


Air Terminal Braces

Tripod Air Terminal Braces

This mechanical fastened brace is used where conditions require additional support for long air terminals. The tripod brace is made of 1/4" galvanized steel.

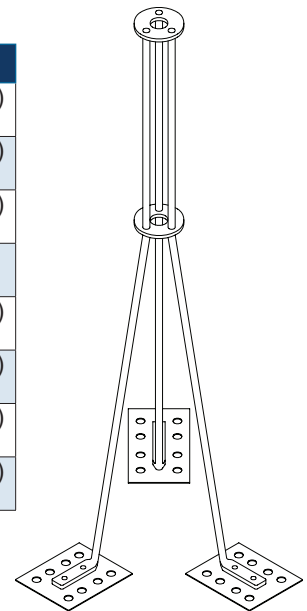
Part Number	Description	Weight
2518	Brace, Galvanized Steel, 1/2, 18", Tripod, Mechanical Type, for Air Terminal	1.00 lbs (0.45 kg)
2524	Brace, Galvanized Steel, 1/2, 24", Tripod, Mechanical Type, for Air Terminal	1.50 lbs (0.68 kg)
2536	Brace, Galvanized Steel, 1/2, 36", Tripod, Mechanical Type, for Air Terminal	2.00 lbs (0.90 kg)
2548	Brace, Galvanized Steel, 1/2, 48", Tripod, Mechanical Type, for Air Terminal	2.50 lbs (1.1 kg)
2618A	Brace, Galvanized Steel, 5/8, 18", Tripod, Mechanical Type, for Air Terminal	1.00 lbs (0.45 kg)
2624A	Brace, Galvanized Steel, 5/8, 24", Tripod, Mechanical Type, for Air Terminal	1.25 lbs (0.56 kg)
2636A	Brace, Galvanized Steel, 5/8, 36", Tripod, Mechanical Type, for Air Terminal	1.50 lbs (0.68 kg)
2648A	Brace, Galvanized Steel, 5/8, 48", Tripod, Mechanical Type, for Air Terminal	1.75 lbs (0.79 kg)



Adhesive Tripod Air Terminal Braces

The adhesive fastened brace is used where conditions require additional support for long air terminals without roof penetration. The tripod brace is made of 1/4" galvanized steel.

Part Number	Description	Weight
2718	Brace, Galvanized Steel, 1/2, 18", Tripod, Adhesive Type, for Air Terminal	1.00 lbs (0.45 kg)
2724	Brace, Galvanized Steel, 1/2, 24", Tripod, Adhesive Type, for Air Terminal	1.50 lbs (0.68 kg)
2736	Brace, Galvanized Steel, 1/2, 36", Tripod, Adhesive Type, for Air Terminal	2.00 lbs (0.90 kg)
2748	Brace, Galvanized Steel, 1/2, 48", Tripod, Adhesive Type, for Air Terminal	2.50 lbs (1.1 kg)
2818A	Brace, Galvanized Steel, 5/8, 18", Tripod, Adhesive Type, for Air Terminal	1.00 lbs (0.45 kg)
2824A	Brace, Galvanized Steel, 5/8, 24", Tripod, Adhesive Type, for Air Terminal	1.25 lbs (0.56 kg)
2836A	Brace, Galvanized Steel, 5/8, 36", Tripod, Adhesive Type, for Air Terminal	1.50 lbs (0.68 kg)
2848A	Brace, Galvanized Steel, 5/8, 48", Tripod, Adhesive Type, for Air Terminal	1.75 lbs (0.79 kg)



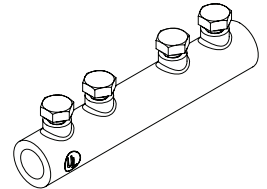
Connectors & Fittings

Splicers, Bonding Plates & Lugs

Mechanical Straight Cable Splicers

Used for splicing straight run class I cable through 2/0 conductor sizes.

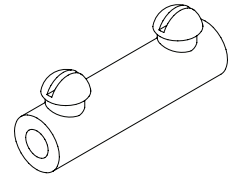
Part Number	Description	Weight
3002	Splicer, Copper Alloy, 2/0, Mechanical, Straight	11.55 oz (320.4 g)
3002A	Splicer, Aluminum, 2/0, Mechanical, Straight	4.5 oz (127.6 g)



Miniature Straight Cable Splicers

Two set screws are used for mechanical clamping of miniature conductor and up to #2 solid wire.

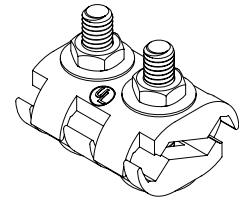
Part Number	Description	Weight
3021	Splicer, Copper Alloy, #2, Miniature Cable, Mechanical, Straight	1.9 oz (53.8 g)
3021A	Splicer, Aluminum, #2, Miniature Cable, Mechanical, Straight	1.0 oz (28.3 g)



Two Bolt Mechanical Conductor Splicers

Two bolt mechanical clamping with 2 inches of contact for any combination of miniature or full size conductor and wire.

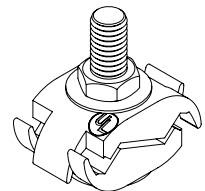
Part Number	Description	Weight
3061	Splicer, Copper Alloy, 2 to 4/0, 2 Bolt, Mechanical, Parallel	8.0 oz (226.8 g)
3061A	Splicer, Aluminum, 2 to 4/0, 2 Bolt, Mechanical, Parallel	4.0 oz (113.4 g)



One Bolt Mechanical Conductor Splicers

Uses a single bolt mechanical clamping with 1 inch of contact for any combination of miniature or full size conductor and wire.

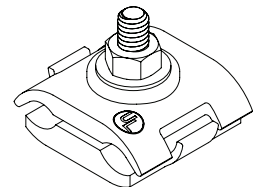
Part Number	Description	Weight
3071	Splicer, Copper Alloy, 2 to 4/0, 1 Bolt, Mechanical, Parallel	4.0 oz (113.4 g)
3071A	Splicer, Aluminum, 2 to 4/0, 1 Bolt, Mechanical, Parallel	2.0 oz (56.7 g)



Flat Parallel Conductor Splicers

Uses a single bolt mechanical clamping with 1-1/2 inches of contact for any combination of standard or full size conductor.

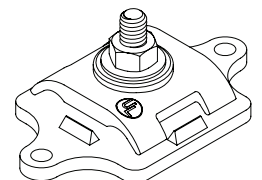
Part Number	Description	Weight
3081	Splicer, Copper Alloy, 1/0 to 4/0, 1 Bolt, Mechanical, Flat, Parallel	7.0 oz (198.4 g)
3081A	Splicer, Aluminum, 1/0 to 4/0, 1 Bolt, Mechanical, Flat, Parallel	3.0 oz (85.0 g)



Secondary Bonding Cast Parallel Splicers

4 sq. in. bond contact area.

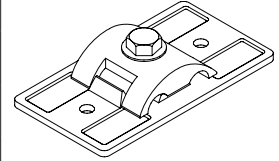
Part Number	Description	Weight
3091	Splicer, Copper Alloy, Secondary, 1 Bolt, Mechanical, Parallel	9.0 oz (225.1 g)
3091A	Splicer, Aluminum, Secondary, 1 Bolt, Mechanical, Parallel	4.0 oz (113.4 g)



Bonding Plates

Has an 8 sq. in. contact area for primary bonding and a mechanical clamp cable connector that can be rotated at 90 degrees.

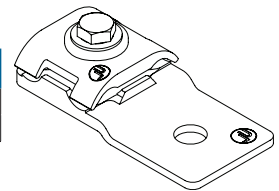
Part Number	Description	Weight
3101	Plate, Bonding, Copper Alloy, Primary, 1 Bolt, Mechanical, Rotatable	12.0 oz (340.2 g)
3101A	Plate, Bonding, Aluminum, Primary, 1 Bolt, Mechanical, Rotatable	4.0 oz (113.4 g)
3101B	Plate, Bonding, Bi-Metal, Aluminium Cap Primary, 1 Bolt, Mechanical, Rotatable	7.5 oz (213 g)
3101AB	Plate, Bonding, Bi-Metal, Copper Alloy Cap Primary, 1 Bolt, Mechanical, Rotatable	9.1 oz (258.5 g)



Terminal Bonding Lugs

Has a 4 sq. in. contact area for secondary bonding and a mechanical conductor connector that can be rotated 90 degrees.

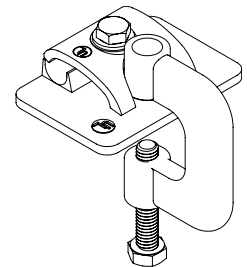
Part Number	Description	Weight
3111	Lug, Copper Alloy, Secondary, 1 Bolt, Mechanical, Rotatable	8.0 oz (226.8 g)
3111A	Lug, Aluminum, Secondary, 1 Bolt, Mechanical, Rotatable	3.0 oz (85.0 g)



Heavy Duty Beam Flange Bonding Connectors

Eight (8) sq. in. of bonding surface makes this bonding connector ideal for bonding to flanges of structural beams, columns and angles and steel purlins up to 5/8" thickness. Clamp type cable fastener fits all standard cables through 2/0. Requires no drilling, clamps directly to edge of steel.

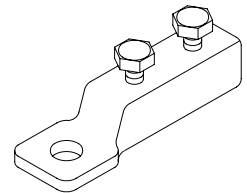
Part Number	Description	Weight
3121	Connector, Copper Alloy, Heavy Duty, Flange, 1 Bolt, Mechanical, Rotatable	1.60 lbs (0.73 kg)
3121A	Connector, Aluminum, Heavy Duty, Flange, 1 Bolt, Mechanical, Rotatable	9.0 oz (255.1 g)



Small Terminal Bonding Lugs

Small bonding lug with 1/4" bolt hole uses two set screws for mechanical clamping of miniature cable and wire.

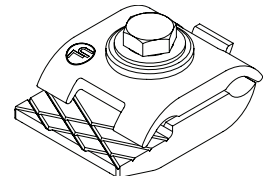
Part Number	Description	Weight
3161	Lug, Copper Alloy, Mini, 1/4" Hole 2 Screw, Mechanical	3.6 oz (102.1 g)
3161A	Lug, Aluminum, Mini, 1/4" Hole 2 Screw, Mechanical	1.5 oz (45.5 g)



Flange Bonding Clamps

Allows bonding to structural steel edges without making penetrations. The flange bonding clamp uses a mechanical clamp for standard conductor to steel members up to 5/8" thick.

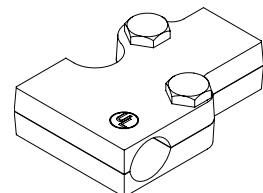
Part Number	Description	Weight
3181	Clamp, Copper Alloy, for 5/8 Flange, Mechanical	9.0 oz (255.1 g)
3181A	Clamp, Aluminum, for 5/8 Flange, Mechanical	4.0 oz (113.4 g)



Mechanical Tee Splicers

The mechanical tee splicer is used for clamping terminating conductor cable run perpendicular to continuing conductor run.

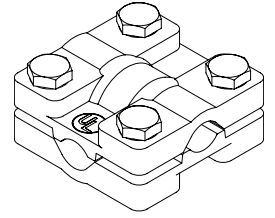
Part Number	Description	Weight
3201	Splicer, Copper Alloy, Tee, Primary, Mechanical, Clamp	9.5 oz (269.0 g)
3201A	Splicer, Aluminum, Tee, Primary, Mechanical, Clamp	3.5 oz (99.0 g)



Cross Run Clamps

The cross run clamp uses mechanical clamping on standard conductor sizes.

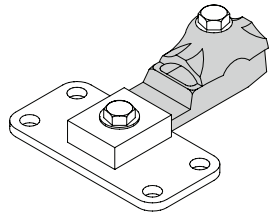
Part Number	Description	Weight
3231	Clamp, Copper Alloy, for Cross Runs, Mechanical	7.0 oz (198.4 g)
3231A	Clamp, Aluminum, for Cross Runs, Mechanical	3.0 oz (85.0 g)



Bimetal Bonding Plates

Plate is made of a cast aluminum and bronze to allow connections of copper conductor cables sizes standard through 2/0 to aluminum beam or other structural aluminum bodies requiring 8 sq. in. of bonding surface. The bimetal bonding plate is also available with a 4-1/2 sq. in. bonding plate for applications that require a minimum of 3 sq. in. of bonding surface. Both bimetal bonding plates use a mechanical clamp for conductors.

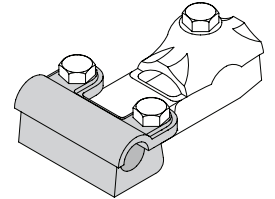
Part Number	Description	Weight
3311	Plate, Bonding, Aluminum with Copper Alloy Cable Clamp, 4 1/2" Sq. Area, Bi-Metal, Mechanical	9.0 oz (255.1 g)
3312	Plate, Bonding, Aluminum with Copper Alloy Cable Clamp, 8" Sq. Area, Bi-Metal, Mechanical	10.0 oz (283.5 g)



Bimetal Mechanical Tee Splicers

Made of cast aluminum and bronze. Uses a mechanical clamping for standard through 2/0 conductor sizes.

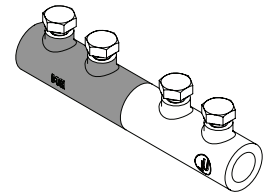
Part Number	Description	Weight
3321	Splicer, Copper Alloy/Aluminum, Bi-Metal, Tee, Mechanical, Terminating to Aluminum	10.0 oz (283.5 g)
3322	Splicer, Aluminum/Copper Alloy, Bi-Metal, Tee, Mechanical, Terminating to Copper Alloy	10.0 oz (283.5 g)



Cast Bimetal Straight Cable Splicer

For making connections between aluminum and copper cables in a straight line. Two-bolt tension on each cable for making a strong connection. Use with all main size conductors.

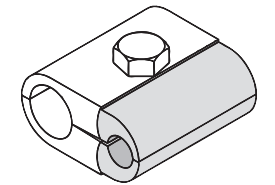
Part Number	Description	Weight
3352	Splicer, Copper Alloy/Aluminum, Bi-Metal, Straight, 2 Bolt, Mechanical	8.0 oz (226.8 g)



Cast Bimetal Parallel Cable Splicer

Uses a mechanical clamp to bond aluminum and copper conductors from standard to 2/0 size.

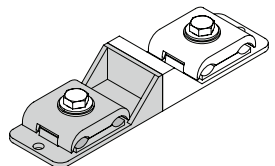
Part Number	Description	Weight
3371	Splicer, Copper Alloy/Aluminum, Bi-Metal, Parallel, Mechanical	5.0 oz (141 g)



Cast Bimetal Cable Splicer

For making connections between aluminum and copper cables. Single bolt tension caps allow the cable to come from a variety of directions (straight, parallel, perpendicular). Use with all main size conductors. Eliminates the use of an additional splicer.

Part Number	Description	Weight
3372	Splicer, Copper Alloy/Aluminum, Bi-Metal, Mechanical	1.0 lbs (453.6 g)

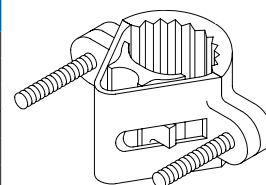


Clamps & Straps & Connectors

Pipe Grounding Clamps

Used for bonding to water pipe, gas lines and pipe railing. For use with all standard conductor and bonding wire.

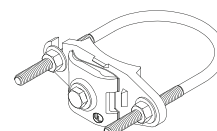
Part Number	Description	Weight
3501	Clamp, Copper Alloy, for up to 1 1/4" Pipe Grounding	10.0 oz (283.5 g)
3511	Clamp, Copper Alloy, for up to 2 1/4" Pipe Grounding	1.37 lbs (621.4 g)
3521	Clamp, Copper Alloy, for up to 4 1/2" Pipe Grounding	1.93 lbs (875.4 g)
3501A	Clamp, Aluminum, for up to 1 1/4" Pipe Grounding	4.0 oz (113.4 g)
3511A	Clamp, Aluminum, for up to 2 1/4" Pipe Grounding	9.0 oz (255.1 g)
3521A	Clamp, Aluminum, for up to 4 1/2" Pipe Grounding	12.0 oz (340.2 g)



1" U-Bolt Bonding Clamps

Used with pipe or round bar from .4" to 1.315". For use with cable and wire sizes from #6 to 250 MCM

Part Number	Description	Weight
3523	Clamp, Copper Alloy, fits .4" to 1.315" O.D Pipes	7.36 oz (208.6 g)



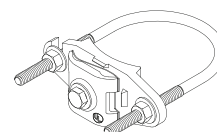
NOTE

- For bimetal clamps, add suffix: ABM (Aluminum Primary, Bi-Metal) or BM (Copper Alloy Primary, Bi-Metal)

2" - 8" U-Bolt Bonding Clamps

Used with all full size conductors. Fits pipes sizes 1.315" to 8.625".

Part Number	Description	Weight
3524	Clamp, Copper Alloy, fits 1.315" to 2" O.D Pipes	12.81 oz (362.9 g)
3524A	Clamp, Aluminum, fits 1.315" to 2" O.D Pipes	6.24 oz (176.9 g)
3525	Clamp, Copper Alloy, fits 1.9" to 3" O.D Pipes	14.72 oz (417.3 g)
3525A	Clamp, Aluminum, fits 1.9" to 3" O.D Pipes	7.36 oz (208.6 g)
3526	Clamp, Copper Alloy, fits 2.75" to 4.5" O.D Pipes	22.08 oz (625.9 g)
3526A	Clamp, Aluminum, fits 2.75" to 4.5" O.D Pipes	10.24 oz (290.3 g)
3527	Clamp, Copper Alloy, fits 4.5" to 6.75" O.D Pipes	40.00 oz (1.13 Kg)
3527A	Clamp, Aluminum, fits 4.5" to 6.75" O.D Pipes	16.48 oz (467.2 g)
3528	Clamp, Copper Alloy, fits 6" to 8.625" O.D Pipes	41.62 oz (1.17 Kg)
3528A	Clamp, Aluminum, fits 6" to 8.625" O.D Pipes	21.12 oz (598.7 g)



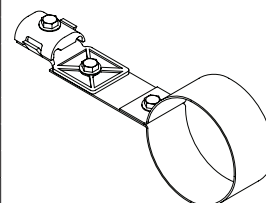
NOTE

- For bimetal clamps, add suffix: ABM (Aluminum Primary, Bi-Metal) or BM (Copper Alloy Primary, Bi-Metal)

Large Pipe Bonding Straps

Has a terminal bonding lug for standard conductor 1-1/4" wide.

Part Number	Description	Weight
3531	Lug, Copper Alloy, with 2" Pipe Strap for Bonding	14.0 oz (396.9 g)
3541	Lug, Copper Alloy, with 4" Pipe Strap for Bonding	1.12 lbs (508.1 g)
3551	Lug, Copper Alloy, with 6" Pipe Strap for Bonding	1.62 lbs (734.8 g)
3561	Lug, Copper Alloy, with 8" Pipe Strap for Bonding	2.50 lbs (1.13 kg)
3531A	Lug, Aluminum, with 2" Pipe Strap for Bonding	6.0 oz (170.1 g)
3541A	Lug, Aluminum, with 4" Pipe Strap for Bonding	8.0 oz (226.8 g)
3551A	Lug, Aluminum, with 6" Pipe Strap for Bonding	12.0 oz (340.2 g)
3561A	Lug, Aluminum, with 8" Pipe Strap for Bonding	1.12 lbs (0.51 kg)



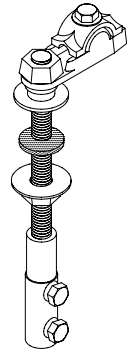
NOTE

- For other Pipe Diameters = Part number: 3561-XX, where XX equals Pipe Diameter

Right Angle Thru-Roof Connectors

Consists of a mechanical conductor connector, a lead seal flashing washer, 1/2" X 8" threaded stem and bronze bottom connector. Fits up to 6" roof thickness.

Part Number	Description	Weight
3601	Connector, Copper Alloy, Right Angle, Through the Roof	1.43 lbs (648.6 g)
3601A	Connector, Aluminum, Right Angle, Through the Roof	1.0 lbs (453.6 g)
3601B	Connector, Copper Alloy/Aluminum, Right Angle, Through the Roof, Bi-Metal	1.26 lbs (571.5 g)



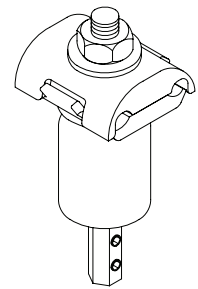
NOTE

- Please contact your representative for additional sizes.

PVC Thru-Roof Conduit Connectors

The PVC thru-roof conduit connector consists of a cast mechanical roof conductor connector, a polymer seal washer, a PVC end cap for 1" schedule 40 PVC, and a stainless steel mechanical straight down conductor connector with a 3" threaded stem.

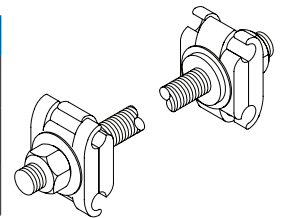
Part Number	Description	Weight
3621	Connector, PVC, Through the Roof, for Copper Cable	15.0 oz (425.2 g)
3621A	Connector, PVC, Through the Roof, for Aluminum Cable	9.0 oz (255.1 g)



Thru-Wall Connectors

The Thru-Wall Conductor has an 18" threaded stem and two adjustable, mechanical conductor connectors.

Part Number	Description	Weight
3651	Connector, Copper Alloy, Through Wall, with 1/2" Dia., Stem	1.50 lbs (680.4 g)
3651A	Connector, Aluminum, Through Wall, with 1/2" Dia., Stem	10.0 oz (283.5 g)
3651B	Connector, Copper Alloy/Aluminum, Through Wall, Bi-Metal with 1/2" Dia., Stem	1.50 lbs (680.4 g)



NOTE

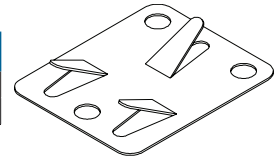
- Please contact your representative for additional sizes.

Fasteners & Clips

Adhesive Flat Cable Fasteners

Uses a crimp over cable fastener. The cable fastener is fastened with a roofing adhesive or cement to eliminate any penetrations to the membrane.

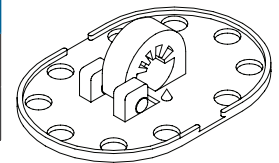
Part Number	Description	Weight
6101	Cable Fastener, Copper Alloy, Flat, Adhesive Mount	1.0 oz (28.3 g)
6101A	Cable Fastener, Aluminum, Flat, Adhesive Mount	0.5 oz (14.2 g)



Adhesive Polymer Cable Fasteners

Fastened with a roofing adhesive or cement to eliminate any roof penetrations. The polymer cable fastener uses pressure snap to lock the hoop firmly around the conductor.

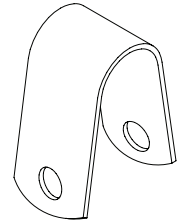
Former P/N	Description	Weight
6111	Cable Fastener, Polymer, Adhesive Mount, for Copper Alloy	0.5 oz (14.2 g)
6111A	Cable Fastener, Polymer, Adhesive Mount, for Aluminum	0.5 oz (14.2 g)



Standard Cable Clips

Size is 1/2" wide and is used with a single nail or screw to fasten conductor sizes standard through 2/0.

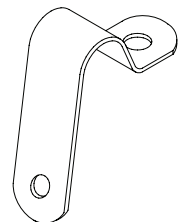
Former P/N	Description	Weight
6121	Cable Fastener, Copper Alloy, Clip	110 pc/lb (245 pc/kg)
6121A	Cable Fastener, Aluminum, Clip	220 pc/lb (490 pc/kg)



Loop Cable Fasteners

Size is 5/8" width and supports up to a 1/4" bolt or screw. The loop cable fastener fits standard through 2/0 conductor.

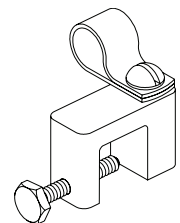
Former P/N	Description	Weight
6131	Cable Fastener, Copper Alloy, Loop	32 pc/lb (71 pc/kg)
6131A	Cable Fastener, Aluminum, Loop	110 pc/lb (245 pc/kg)



Standing Seam Cable Clips

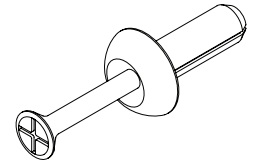
3/4" groove cable holder and 1/4" bolt

Former P/N	Description	Weight
6180	Cable Fastener, Copper Alloy, Standing Seam	0.18 lbs (81.6 g)
6180A	Cable Fastener, Aluminum, Standing Seam	0.14 lbs (63.5 g)



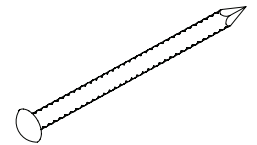
Hammer Drive Screw Anchors

Part Number	Description	Weight
6207	Anchor, Stainless Steel, 1/4" x 1", Screw	20.63 lbs/M (0.79 kg/M)
6208	Anchor, Stainless Steel, 1/4" x 1 1/4", Screw	2.25 lbs/C (1.02 kg/M)



Nails

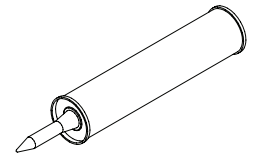
Part Number	Description	Weight
6221S	Anchor, Stainless Steel, 4 Penny, Nail	209 pc/lb (461 pc/kg)



Self-leveling, Multi Purpose Adhesive

UV-6800 is a self-leveling, multi purpose adhesive. It adheres to aluminum, steel, glass, fiberglass, concrete, PVC, and neoprene. UV-6800 has a tensile strength of 2,900 p.s.i. and a shear adhesion range from 400 to 600 p.s.i. Clear adhesive.

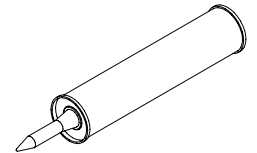
Part Number	Description	Weight
6231	Adhesive, UV-6800	14.3 oz (405.4 g)



Polyurethane Sealant Adhesive

NP1™ is a ready to use polyurethane sealant. It adheres to most metal, wood, poly-membrane, and concrete surfaces. NP1™ has a 350 p.s.i. tensile strength. Black adhesive.

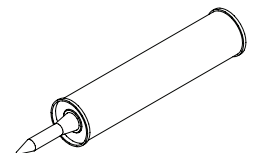
Part Number	Description	Weight
6233	Adhesive, NP1™	14.6 oz (413.9 g)



Polyether Sealant Adhesive

M1™ is a ready moisture curing, Polyether adhesive sealant. It is designed for applications in damp, dry, or cold climates.

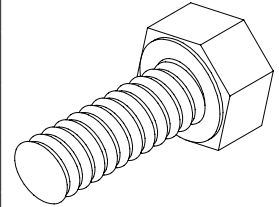
Part Number	Description	Weight
6235	Adhesive, M1™	10.1 oz (300 ml)



Bolts, Screws & Nuts

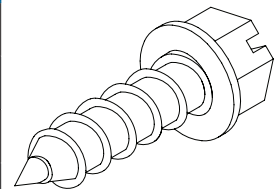
Hex Head Machine Bolts

Part Number	Description	Weight
6301	Bolt, Stainless Steel, 1/4-20, 1/2", Hex Head	12.46 lbs/M (5.65 kg/M)
6303	Bolt, Stainless Steel, 1/4-20, 3/4", Hex Head	14.80 lbs/M (6.71 kg/M)
6305	Bolt, Stainless Steel, 1/4-20, 1", Hex Head	17.77 lbs/M (8.03 kg/M)
6307	Bolt, Stainless Steel, 1/4-20, 1 1/4", Hex Head	19.51 lbs/M (8.84 kg/M)
6309	Bolt, Stainless Steel, 1/4-20, 1 1/2", Hex Head	22.23 lbs/M (10.08 kg/M)
6311	Bolt, Stainless Steel, 5/16-18, 3/4", Hex Head	24.00 lbs/M (10.88 kg/M)
6313	Bolt, Stainless Steel, 5/16-18, 1", Hex Head	28.20 lbs/M (12.79 kg/M)
6315	Bolt, Stainless Steel, 5/16-18, 1 1/4", Hex Head	36.50 lbs/M (16.56 kg/M)
6317	Bolt, Stainless Steel, 5/16-18, 1 1/2", Hex Head	43.90 lbs/M (19.73 kg/M)
6319	Bolt, Stainless Steel, 5/16-18, 2", Hex Head	44.80 lbs/M (20.32 kg/M)
6320	Bolt, Stainless Steel, 3/8-16, 1/2", Hex Head	37.00 lbs/M (16.78 kg/M)
6321	Bolt, Stainless Steel, 3/8-16, 3/4", Hex Head	42.00 lbs/M (19.05 kg/M)
6323	Bolt, Stainless Steel, 3/8-16, 1", Hex Head	47.70 lbs/M (21.63 kg/M)
6325	Bolt, Stainless Steel, 3/8-16, 1 1/2", Hex Head	55.80 lbs/M (25.31 kg/M)
6327	Bolt, Stainless Steel, 3/8-16, 2", Hex Head	67.60 lbs/M (30.66 kg/M)
6329	Bolt, Stainless Steel, 1/2-13, 3/4", Hex Head	7.28 lbs/C (3.30 kg/C)
6331	Bolt, Stainless Steel, 1/2-13, 1", Hex Head	8.36 lbs/C (3.80 kg/C)
6333	Bolt, Stainless Steel, 1/2-13, 1 1/2", Hex Head	10.63 lbs/C (4.82 kg/C)
6335	Bolt, Stainless Steel, 1/2-13, 2", Hex Head	13.33 lbs/C (6.05 kg/C)



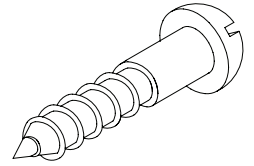
Self Forming Sheet Metal Screws

Part Number	Description	Weight
6351	Screw, Stainless Steel, #12, 5/8", Self-Tapping	7.30 lbs/M (3.31 kg/M)
6353	Screw, Stainless Steel, #12, 1", Self-Tapping	9.35 lbs/M (4.24 kg/M)
6355	Screw, Stainless Steel, 1/4", 5/8", Self-Tapping	14.5 lbs/M (6.47 kg/M)
6357	Screw, Stainless Steel, 1/4", 1", Self-Tapping	17.5 lbs/M (7.94 kg/M)



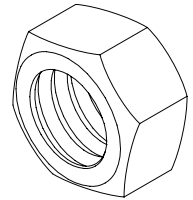
Round-Slotted Wood Screws

Part Number	Description	Weight
6361	Screw, Stainless Steel, #10, 1", Round, Slotted, Wood	8.00 lbs/M (3.63 kg/M)
6363	Screw, Stainless Steel, #10, 1 1/2", Round, Slotted, Wood	10.65 lbs/M (4.83 kg/M)
6365	Screw, Stainless Steel, #12, 1", Round, Slotted, Wood	9.92 lbs/M (4.50 kg/M)
6367	Screw, Stainless Steel, #12, 1 1/2", Round, Slotted, Wood	14.43 lbs/M (6.54 kg/M)



Hexagon Nuts

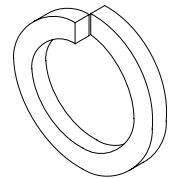
Part Number	Description	Weight
6371	Nut, Stainless Steel, 1/4-20, Hex Head	0.70 lbs/C (0.32 kg/C)
6373	Nut, Stainless Steel, 5/16-18, Hex Head	1.03 lbs/C (0.47 kg/C)
6375	Nut, Stainless Steel, 3/8-16, Hex Head	1.50 lbs/C (0.68 kg/C)
6377	Nut, Stainless Steel, 1/2-13, Hex Head	3.65 lbs/C (1.65 kg/C)



Washers, Screws & Threaded Rods

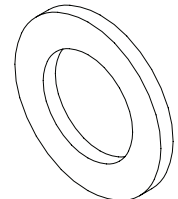
Split Lock Washers

Part Number	Description	Weight
6401	Washer, Stainless Steel, 1/4", Split	0.24 lbs/C (0.11 kg/C)
6403	Washer, Stainless Steel, 5/16", Split	0.40 lbs/C (0.18 kg/C)
6405	Washer, Stainless Steel, 3/8", Split	0.62 lbs/C (0.28 kg/C)
6407	Washer, Stainless Steel, 1/2", Split	1.27 lbs/C (0.58 kg/C)



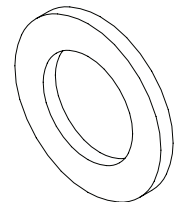
Flat Washers

Part Number	Description	Weight
6411	Washer, Stainless Steel, 1/4", Flat	0.28 lbs/C (0.13 kg/C)
6413	Washer, Stainless Steel, 5/16", Flat	0.44 lbs/C (0.19 kg/C)
6415	Washer, Stainless Steel, 3/8", Flat	0.59 lbs/C (0.27 kg/C)
6417	Washer, Stainless Steel, 1/2", Flat	1.55 lbs/C (0.70 kg/C)



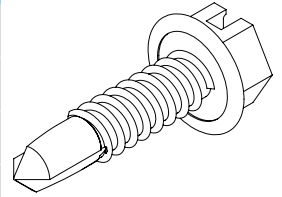
Neoprene Sealing Washers

Part Number	Description	Weight
6421	Washer, Neoprene, #10, Sealing	0.1 oz (2.8 g)
6423	Washer, Neoprene, #12, Sealing	0.1 oz (2.8 g)
6425	Washer, Neoprene, 1/4", Sealing	0.1 oz (2.8 g)
6427	Washer, Neoprene, 5/16", Sealing	0.2 oz (5.6 g)
6429	Washer, Neoprene, 3/8", Sealing	0.2 oz (5.6 g)
6431	Washer, Neoprene, 1/2", Sealing	0.2 oz (5.6 g)



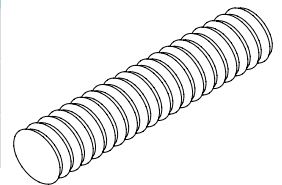
Self Drilling Screws

Part Number	Description	Weight
6451	Screw, Stainless Steel, #8, 1", Self-Tapping, Hex Head	8.00 lbs/M (3.62 kg/M)
6453	Screw, Stainless Steel, #8, 1 1/2", Self-Tapping, Hex Head	10.00 lbs/M (4.53 kg/M)
6455	Screw, Stainless Steel, #12, 1", Self-Tapping, Hex Head	14.00 lbs/M (6.35 kg/M)
6457	Screw, Stainless Steel, #12, 1 1/2", Self-Tapping, Hex Head	12.34 lbs/M (7.93 kg/M)



Threaded Rods

Part Number	Description	Weight
6513	Rod, Stainless Steel, 3/8", 1", Threaded	4.5 oz per ft (418.5 g/m)
6515	Rod, Stainless Steel, 1/2", 1", Threaded	9.0 oz per ft (837.1 g/m)
6517	Rod, Stainless Steel, 5/8", 1", Threaded	1.00 lbs per ft (1.49 kg/m)



NOTE

- Additional lengths may be ordered by specifying 65XX-Y, where Y equals lengths in inches.