



Grounding / Bonding Solutions • Surge Protection • Lightning Protection

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Introduction

About ALLTEC

ALLTEC is a global leader in the design, manufacture and development of products and services for grounding & bonding solutions, surge protection, and lightning protection.

Grounding (Earthing) / Bonding Solutions

As equipment becomes more sophisticated and electrically susceptible, the need for an exceptionally low-resistance/low-impedance grounding system becomes more crucial. When implemented effectively, harmful electrical currents are safely redirected to earth and away from important equipment and facilities.

Surge Protection

While lightning is the most notorious surge generator, approximately 80% of all transient surge activity originates from internally generated sources. Properly installed surge protection devices on all circuit conductors maximizes total site protection.

Lightning Protection

Lightning is an awesome and unpredictable act of nature that causes more deaths and property damage than any other weather related event. A properly installed lightning protection system is over 98% effective in preventing catastrophic lightning damage.

Consulting, Engineering & Design, Project Management and Inspection/ Preventative Maintenance Services

ALLTEC's greatest strength is our complete Systems Engineering and Products Solutions Program. Our experienced and accredited Engineering and Project Management teams apply the three-tiered ALLTEC Protection Pyramid[™] approach while working with leading international client companies to develop the best solutions for each and every situation. While ALLTEC offers a full multi-phase solution for clients in need of all of our services, we can also provide a selection of individualized services which best fit a client's unique protection needs.

Assessing the Problems, Providing Answers, Project Oversight & Continued Protection

- Consulting (Phase I) TerraEval Advanced Solution Assessment
- Engineering & Design (Phase II) Customized Solution Development
- Project Management (Phase III) Strong and Cost Effective Project Management Support
- Inspection/Preventative Maintenance (Phase IV)
 System Performance and Condition Evaluation

You can learn more about our services and capabilities at <u>www.alltecglobal.com/services</u>

The ALLTEC Protection Pyramid™

The ALLTEC Protection Pyramid[™] provides a three-tier comprehensive facility approach for grounding/ earthing & bonding, surge suppression, and lightning protection solutions. The Pyramid comes as close as humanly possible to protect both man and machine from lightning and non-lightning induced transient voltage damage.

Why the Pyramid?

Each level of the ALLTEC Protection Pyramid[™] represents a method utilized to protect facilities from damages caused by harmful electrical events. Rather than treating these tiers as independent, ALLTEC regards each layer as an interlocking component. When all three tiers are designed, installed, and maintained as a total system, comprehensive facility protection can be achieved.

Safeguard valuable assets, defend critical electronics, and protect businesses using the ALLTEC Protection Pyramid[™]. The ALLTEC Protection Pyramid[™] uses ALLTEC's proven products and services for grounding, surge suppression, and lightning protection to provide full infrastructure protection.

You can learn more at <u>alltecglobal.com/about-us/alltec-protection-pyramid</u>



General Information

Ability to Serve

ALLTEC has the capability to design, manufacture, and install any lightning protection or grounding system you may require. Our complete engineering facilities are prepared to assist you with any special or unusual requirements.

Claims & Shortages

Please be aware that ALLTEC assumes no liability for any damage to goods in shipment. All materials must be inspected upon receipt BEFORE signing for acceptance of shipment. Once you have signed the bill of lading accepting shipment, you are acknowledging that you have received the shipment in full and with no damage. Any damages or shortages need to be noted on the bill of lading before signing and immediately file a claim with the delivering transportation company. It is our policy that any claims for shortages or errors must be made within 24 hours after receipt of goods. Any error on our part will be taken care of promptly and at no cost to you, the customer. Any shortages found and reported more than 24 hours after shipment acceptance will not be replaced free of charge.

International Customers

Our exporting policy is available upon request. This policy may vary slightly, depending upon the receiving country and its Customs procedures. ALLTEC offers all of our engineering and design services worldwide.

Documentation & Wire Transfer Fees

ALLTEC charges standard customary fees for obtaining and processing documents for overseas shipments. Any wire transfer or bank fees are the responsibility of the customer and will be included in the price quotation supplied before the shipment leaves our warehouse.

Standards & Code Specification Compliance

ALLTEC is accredited and certified by numerous standards authorities. As an expert in the latest approved standards and code specifications for grounding and lightning protection systems, ALLTEC is an active sought-after member for standards committees.

You can learn more about ALLTEC Products at alltecglobal.com/products

Terms and Conditions

"Goods & Services"

1. Definitions

The term "Seller" means ALLTEC, the term "Buyer" means the company, person or other entity who is the purchaser of the Goods, the term "Goods" means any goods or materials ordered and sold pursuant to the terms and conditions set forth herein.

2. Price

Unless otherwise stated, price of the Goods shall be the price in effect at the date and time of shipment. Seller reserves the right to adjust price based on volume purchases; any discounds allowed for volume purchases will be in the Seller's sole discretion. Price does not include any sales, use, excise or similar taxes which shall be added to the price of the Goods and shall be the responsibility of Buyer. Unless otherwise stated, domestic minimum order is \$50.00 (excluding freight) on any single order and \$1,000.00 on any single international order. Each shipment will be separately invoiced.

3. Payments Terms

Terms of payment are determined on a case by case basis. Service charge on late payments shall be applicable at the rate of one and one-half percent (1.5%) per month or an annual percentage rate of eighteen (18%) per annum. In addition, Buyer shall be obligated for Seller's reasonable collection agency or attorneys' fees that may be incurred by Seller to collect any sums due Seller hereunder or service charge. Seller reserves the right to apply any payments received from Buyer to any outstanding invoice of Seller at Seller's sole discretion.

4. Freight

The purchase price of the Goods shall be EXWORKS, Canton, NC or other named shipping point. In situations of "prepay and add", ALLTEC is unable to provide a copy of the actual freight bill due to agreements with our carriers regarding rate disclosure confidentiality.

5. Delivery

- (a) Seller's place and point of delivery shall be deemed to be delivery to a carrier at Seller's plant in Canton, NC, USA or such other designated shipping point designated by Seller. If Buyer fails to furnish complete shipping directions to Seller within a reasonable time of placing the order, Seller, at Seller's discretion, may make necessary shipping arrangements with a carrier selected by Seller, the cost of which shall be paid by Buyer.
- (b) If and to the extent a delivery date is stated, it is the estimated delivery date only. All accepted orders, whether or not delivery dates are specified thereon, shall be subject to delays or failures in manufacture or delivery due to causes beyond the control of Seller or carrier. Buyer's obligations shall continue notwithstanding any delay in delivery, provided if performance by Seller is prevented in whole or in part for a period of three (3) consecutive months, then in such event Seller or Buyer (provided Buyer is not responsible for the delay) may cancel any order that has not been shipped as of such date.
- (c) If for any reason, the Buyer is unable to accept the delivery of Goods according to the mutually established schedule; the Seller, at its option and after three (3) days written notice to the Buyer, may place the Goods in storage. In such event, the Buyer shall pay any and all storage or other related costs. If the Buyer fails to accept any delivery or part thereof, the Seller, at its option, may treat such failure as a breach of this Agreement and exercise any and all remedies available to it pursuant to the terms and conditions set forth herein or available to it as a matter of law.

6. Credit

The Seller's obligations are at all times subject to the Seller's approval of the Buyer's credit standing. Upon request, the Buyer shall furnish the Seller such credit information as may be customary and reasonably requested by the Seller. At its discretion, the Seller reserves the right to require payment in advance, C.O.D., and/ or otherwise modify credit terms. If at any time the Buyer is past due with respects to amounts due, the Seller at its option (without liability or prejudice to any other remedies), may decline to ship or stop any Goods in transit until such time the Seller (1) receives payment in full of all amounts owing to it by the Buyer or (2) otherwise receives assurances satisfactory to the Seller of such payment.

7. Risk of Loss

Risk of loss or damage to the Goods shall be solely that of Buyer upon delivery to a carrier for shipment; any loss or damage subsequent to such delivery shall not be the responsibility of Seller, provided further any such loss shall not release Buyer from Buyer's obligation to pay for the Goods. Any claim for damage or loss in transit must be asserted by Buyer against the carrier.

8. Warranty

Seller warrants that the Goods will conform to the description stated herein subject to tolerances and variations consistent with current trade practices, testing and inspections methods. Seller makes no other warranties hereunder, expressed or implied. Seller specifically disclaims any implied warranties of merchantability or fitness for a particular purpose. Some products have special warranties and periods of duration.

9. Claims

- (a) Buyer shall inspect the Goods immediately upon receipt. Any claim that the Goods have been damaged or otherwise do not conform must be made to Seller in writing within ten (10) days of receipt of such Goods by Buyer. All claims for defective, damaged, or non-conforming Goods must be submitted in writing to ALLTEC, LLC at 64 Catalyst Drive, Canton, NC 28716, USA accompanied with a copy of the signed bill-of-lading noting the damage/ shortages, and any other information (photos, etc) supporting Buyer's claim. In the absence of such notice, the Goods shall be deemed to be accepted by Buyer.
- (b) With respect to any valid claims properly submitted hereunder, Buyer's exclusive remedy and Seller's sole liability shall be limited to Seller repairing or replacing Goods that do not conform to specifications, or at Seller's sole option refunding the purchase price of the Goods. In no event shall Seller have any liability to damages in connection with the sale of the Goods in an amount exceeding the purchase price of the Goods sold. Seller shall have no liability for any consequential, special, or indirect damages.
- (c) Claims for quantity deviations or unit pricing errors are deemed waived unless submitted in writing within thirty (30) days of notice of invoice.

10. Quotations

Quotations, based on plans and specifications, are Seller's interpretation of the requirements and include only the material described and listed on the quotation unless otherwise stated. Quotations will be in writing and unless otherwise specified will remain in effect for a period of thirty (30) days from issue date. Formal written purchase orders for work covered by any quotation submitted must be received within forty-five (45) days from the date of quotation. Prices and inventory classifications are subject to changes without notice, and are those in effect at the time of shipment.

11. Errors

ALLTEC reserves the right to correct, at any time, any errors and omissions relating to any component or item upon which a purchase order may be based, including, but not limited to, clerical or stenographic errors or omissions as may relate to quotations, price, catalog and other materials supplied by ALLTEC, or other terms and conditions as reasonably determined by Seller.

12. Returns

Goods may be returned for credit upon written request and upon Seller's written approval and issuance to Buyer of a customer return materials authorization form with RMA number. Any returned items are subject to reasonable restocking charges which unless otherwise agreed to by Seller, shall be deemed to be twenty-five percent (25%) of the price of the Goods returned. Any returned items must be in saleable condition, in the original standard packages, and conform to current catalog descriptions. All returned material is to be shipped to seller freight prepaid. Unless otherwise stated, these terms and conditions govern the purchase and sale of the Goods. All terms and conditions, including price, are subject to change without notice as to any Goods not shipped as of the effective date of such change.

13. Cancellation

Orders received and accepted by Seller may not be cancelled or changed subsequent to delivery, prior to that date such orders may be received and accepted by Seller with the written permission of Seller. Any cancellation or change shall be subject to applicable charges for labor, material, and other costs actually incurred by Seller.

14. Seller's Remedies

If Buyer cancels or abrogates this Agreement in whole or in part prior to shipment for any reason, without Seller's consent, Buyer shall pay Seller for all costs and expenses incurred by Seller, including the cost of all work executed or performed; any special engineering costs and commitments made by Seller prior to the time of cancellation; and all other incidental and storage costs incurred prior to resale.

15. Binding Nature

These terms and conditions shall be binding upon the parties hereto, their successors and assignees.

16. Authority

Any person, employee or agent otherwise acting on behalf of Buyer hereunder shall be deemed to have full authority to act on behalf of Buyer which Seller may rely on exclusively without further inquiry.

17. Governing Law

This Agreement shall be construed in accordance with and governed by laws of the state of North Carolina, USA.

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Reference Material



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

- 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 microprocessorcontrolled 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.





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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 (1)	-	C (2)	-	12 (3)	-	12 (4)						
	(1) Type of Component				TS100 =	= Ter	raStat® T	S100					
	(2) Material			C = Cop	oper,	, SS = Sta	inless	Steel,	A = A	lumir	num		
	(3) Diameter			12 =1/2" or 58 =5/8"									
Jus	US (4) Length			12 = 12 ³	", 18	8 = 18", 2 4	= 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 nonstandard 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)

- 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) TerraSt	lodel	TS10	0 = Ter	rraSt	Stat [®] TS100 or TS400 = TerraStat [®] TS400	
(2) Diamet		58 =	5/8"			
(3) Length		48 = NOTE	48", <mark>60</mark> Ξ: Othe	= 60 r lenç	0", 72 = 72", etc ngths available upon request.	
(4) Type	SRO ARO	= Stain = Alum	nless ninum	s Steel Round Offset m 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)

- 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 - (1) -	58 (2)	-	48 (3)	-	SRO (4)	-	HMP (5)		
(1) TerraStat [®] Mo	del	TS10	0 = Ter	raSt	tat® TS100	or TS400) = TerraS	Stat [®] TS400	
(2) Diameter		58 =	5/8"						
(3) Length		48 = NOTI	48", 60 E: Othe	= 60 r leng)", 72 = 72" gths availab	, etc le upon r	equest.		
(4) Type		SRO	= Stain	less	Steel Roun	d Offset			
(5) Hardware		HMP	= Horiz	zonta	al 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	5.32 lbs (2.4 kg)
	Offset, Including (2) Horizontal Mounting Plates	
TS100-58-60-SRO-HMP	TerraStat [®] 100, Stainless Steel, 5/8" Dia., 60" Long, Solid Rod, with Round	6.92 lbs (3.1 kg)
	Offset, Including (2) Horizontal Mounting Plates	
TS100-58-72-SRO-HMP	TerraStat [®] 100, Stainless Steel, 5/8" Dia., 72" Long, Solid Rod, with Round	7.42 lbs (3.4 kg)
	Offset, Including (2) Horizontal Mounting Plates	· •

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

- 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) TerraS	tat® M	odel	TS10	0 = Ter	raSt	at® TS100 c	or TS40) = TerraSta	at® TS400)
(2) Diame	ter		58 =	5/8"						
(3) Length	١		48 = NOTI	48", 60 Ξ: Othe	= 60 r leng)", 72 = 72", gths available	etc e upon i	request.		
(4) Type			SRO	= Stain	less	Steel Round	Offset			
(5) Hardw	are		VMP	= Verti	cal N	lounting Plat	es			

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

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

- 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)
5" Diamete Brush with	er Spiral Wound Dissipation	
Dissipation	Wire	
	10" Stand Off Brace	
	36" X 1.5" X .25" Mounting Frame	

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

<u> </u>		
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
- •



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	TSP20	TSP30	TSP40	TSP50	TSP60
	(m)	(Rp)	(Rp)	(Rp)	(Rp)	(Rp)
	2	16	20	25	30	32
	3	24	30	37	44	48
1	4	31	40	50	59	63
Levei	5	39	50	62	73	79
'	6	40	50	62	74	79
	8	40	51	63	74	79
	10	41	51	63	74	80
	2	18	23	28	32	35
	3	27	35	42	48	52
1	4	36	47	55	64	70
Level	5	45	58	69	80	87
	6	47	58	69	80	87
	8	47	59	70	81	88
	10	48	60	71	81	88
	2	22	27	32	37	39
	3	33	40	48	56	59
1	4	43	53	64	74	78
Level	5	54	66	80	92	97
	6	54	66	80	92	98
	8	56	68	81	93	99
	10	57	69	82	94	99
	2	25	30	36	41	43
	3	37	45	53	61	64
	4	49	59	71	81	86
Level	5	61	74	88	101	107
IV	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/ μ s): the average speed of the downward tracer (1 m/ μ s).

 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®,	12.5 lbs (5.7 kg)
	Terrastat [®] , or Air Terminal, Heavy Duty	
MAST-SS-2-10-HD	Mast, Stainless Steel, 2 Inch, 10 Foot, For Terrastreamer®,	25.0 lbs (11.3 kg)
	Terrastat [®] , or Air Terminal, Heavy Duty	
MAST-SS-2-15-HD	Mast, Stainless Steel, 2 Inch, 15 Foot, For Terrastreamer®,	37.5 lbs (17.0 kg)
	Terrastat [®] , or Air Terminal, Heavy Duty	
MAST-SS-2-20-HD	Mast, Stainless Steel, 2 Inch, 20 Foot, For Terrastreamer®,	50.0 lbs (22.7 kg)
	Terrastat [®] , or Air Terminal, Heavy Duty	

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



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)	4.25 lbs (1.93 kg)
	1/2" Mounting Bolts, For Use With Guy Wires ONLY	

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)



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

Turnbuckle Cl	amp		and the second s
Part Number	Description	Weight	
GUY-SS-CL-TB	Clamp, Stainless Steel, 4" Turn Buckle, for FRP Masts	3.5 oz (100 g)	
			CC 1

"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)



EPOXY
<u> </u>

Weight

17.6 oz (500 g)

Description Adhesive, 2 Part, for use on FRP Masts

NOTE

Adhesive

Part Number

ADH-FRP

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 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.



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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.



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



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		Extension Length "L"											
Diameter	Туре	0)"	4	"	6	"	8	"	1(0"	12	2"
" A "		lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg
0" 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
2 - 4	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
1 " 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
4 - 0	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" 0"	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
0-0	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
0" 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
0 - 10	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,	3.0 lbs
2" to 4" clamp size	(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

32S

Part Number	Description	Weight	Diameter
32S	Conductor, Copper, 32 Strand, 17	Approximate weight per 1,000 feet	Diameter 15/32"; No. 2 size; 65,600
	GA, Class I	215 pounds (97.5 kg/304.8 m)	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	Approximate weight per 1,000 feet	Diameter 15/32; No. 2 size; 65,600
	GA, Class I, Tinned	250 pounds (113.4 kg/304.8 m)	circular mils.

22

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

40

Part Number	Description	Weight	Diameter
40	Conductor, Copper, 28 Strand, .066	Approximate weight per 1,000 feet	Diameter 1/2"; No. 1/0 size; 122,000
	Dia., Class II	375 pounds (170.1 kg/304.8 m)	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	Approximate weight per 1,000 feet	Diameter 1/2"; No. 1/0 size; 122,000
	Dia., Class II, Lead Coated	405 pounds (183.7 kg/304.8 m)	circular mils.

A28

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

A30

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

AG4

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

- 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 nonstandard length in decimal inches.

LIGHTNING PROTECTION PRODUCTS

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)

- 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	13.1 oz (371.4 g)
	Terminal	
2015	Base, Copper Alloy, 1/2"-13 Threaded I.D., Flat Surface, for Air	10.9 oz (309.0 g)
	Terminal	
2015A	Base, Aluminum, 1/2"-13 Threaded I.D., Flat Surface, for Air	4.2 oz (119.1 g)
	Terminal	



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	1 lbs (453.6 g)
	Terminal	
2129	Base, Copper Alloy, 1/2"-13 Threaded I.D., Standing Seam, for	1.1 lbs (498.9 g)
	Air Terminal	
2129A	Base, Aluminum, 1/2"-13 Threaded I.D., Standing Seam, for Air	9 oz (255.1 g)
	Terminal	

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



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



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	16.6 oz (470 g)
	Max.1.900", Universal, Pipe, for Air Terminal	
2231U	Base, Bronze, 1/2"-13 Threaded I.D., Min. 1.314" to	16.6 oz (470 g)
	Max.1.900", Universal, Pipe, for Air Terminal	
2231UA	Base, Aluminum, 1/2"-13 Threaded I.D., Min. 1.314" to	6 oz (170 g)
	Max.1.900", Universal, Pipe, for Air Terminal	
2233U	Base, Bronze, 5/8"-11 Threaded I.D., Min. 1.314" to	16.6 oz (470 g)
	Max.1.900", Universal, Pipe, for Air Terminal	
2233UA	Base, Aluminum, 5/8"-11 Threaded I.D., Min. 1.314" to	6 oz (170 g)
	Max.1.900", Universal, Pipe, for Air Terminal	
2235U	Base, Bronze, 3/8"-16 Threaded I.D., Min. 1.750" to	17.6 oz (498.9 g)
	Max. 2.500", Universal, Pipe, for Air Terminal	
2237U	Base, Bronze, 1/2"-13 Threaded I.D., Min. 1.750" to	17.6 oz (498.9 g)
	Max. 2.500", Universal, Pipe, for Air Terminal	
2237UA	Base, Aluminum, 1/2"-13 Threaded I.D., Min. 1.750" to	6.2 oz (175.8 g)
	Max. 2.500", Universal, Pipe, for Air Terminal	
2239U	Base, Bronze, 5/8"-11 Threaded I.D., Min. 1.750" to	17.6 oz (498.9 g)
	Max. 2.500", Universal, Pipe, for Air Terminal	
2239UA	Base, Aluminum, 5/8"-11 Threaded I.D., Min. 1.750" to	6.2 oz (175.8 g)
	Max, 2,500", Universal, Pipe, for Air Terminal	



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,	7.8 oz (221.1 g)
2305	Base, Bronze, 1/2"-13 Threaded I.D., Vertical, for Air Terminal,	/.2 oz (204.1 g)
	Chimney Mount	
2305A	Base, Aluminum, 1/2"-13 Threaded I.D., Vertical, for Air	2.6 oz (73.7 g)
	Terminal, Chimney Mount	



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	1.00 lbs (0.45 kg)
	Ierminai	
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,	7.0 oz (198.4 g)
	Parallel	
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)
000171		110 02 (11011 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,	1.60 lbs (0.73 kg)
3121A	Connector, Aluminum, Heavy Duty, Flange, 1 Bolt, Mechanical,	9.0 oz (255.1 g)
	Rotatable	(20011 9)

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

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,	8.0 oz (226.8 g)	
	Mechanical		

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	<u>A</u>
3523	Clamp, Copper Alloy, fits .4" to 1.315" O.D Pipes	7.36 oz (208.6 g)	
NOTE			, and the second s

• 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)
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)	\sim
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	1.26 lbs (571.5 g)
	Roof, Bi-Metal	

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

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)







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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
00/5		(12.79 kg/M)
6315	Bolt, Stainless Steel, 5/16-18, 1 1/4", Hex Head	36.50 lbs/M
0047		(16.56 Kg/M)
6317	Bolt, Stainless Steel, 5/16-18, 1 1/2", Hex Head	43.90 Ibs/M
0100	Delt Otsislass Otsel 5/10 10 0" Hey Head	(19.73 Kg/IVI)
0319	Boit, Stainless Steel, 5/16-18, 2, Hex Head	44.80 IDS/IVI
6220	Polt Stainloss Steel 2/9 16 1/0" Hey Head	(20.32 Kg/IVI)
0320	Bolt, Stallliess Steel, 3/6-10, 1/2, Hex Head	(16.79 kg/M)
6321	Bolt Stainloss Stool 3/8-16 3/4" Hox Hoad	(10.70 kg/lvl)
0521	Doit, Stairliess Steel, 5/6-10, 5/4, Tiex Tiead	(19.05 kg/M)
6323	Bolt Stainless Steel 3/8-16 1" Hex Head	47 70 lbs/M
0020		(21.63 kg/M)
6325	Bolt Stainless Steel 3/8-16 1 1/2" Hex Head	55.80 lbs/M
0020		(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)



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 specifyng 65XX-Y, where Y equals lengths in inches.



Section 4

Surge Protection Devices

Surge Protection Devices

Introduction

To ensure 99.999% of service availability and to prolong the service life of mission-critical equipment, facilities must be equipped to effectively dissipate damaging levels of transient surge energy. A complete lightning protection system includes strike termination devices, surge protection devices, grounding electrodes and the required interconnecting conductors, connectors and fittings. UL 96A recommends installing UL Listed surge protection devices on each electric service entrance in accordance with NEC Article 285, ANSI/NFPA 70. ALLTEC DynaShield[®] surge protection devices (SPDs) reduce the magnitude of random, high energy, short-duration electrical power anomalies to keep your site operating reliably.

ALLTEC's Protection Pyramid[™] depends on DynaShield[®] products to support it's comprehensive facility protection methodology. The second tier of protection diminishes the significance of random, high-energy, short-duration electrical power transients through properly installed surge protection devices. Atmospheric phenomena (such as lightning strikes), utility switching, inductive loads, and internally generated over voltages typically cause these occurrences. The ultimate goal of our approach is to keep sites and systems operating safely and reliably.

ALLTEC DynaShield[®] SPDs are available for installation at main service entrance, distribution panels, and critical equipment locations. Multiple enclosure options, mounting styles, and connection methods are available. Additionally, we offer SPDs to protect DC power and data signal lines. We also design & develop custom surge protection devices for unique customer applications. Our products are designed to IEEE and IEC standards and carry industry recognized certifications including UL, ETL, and CE.

Industries utilizing ALLTEC SPDs include cellular, radio and television broadcasting sites, data centers, power substations, communication centers, hospitals, research labs, industrial plants, petrochemical processing, and gas pipelines.

ALLTEC's Surge Protection Device Application Map (pg. 55) illustrates where surge protection should be installed to safeguard your equipment and facility.

What is a Surge Protection Device

For all practical purposes, a surge protection device (SPD) acts as an ultrafast switch that activates upon encountering a voltage at some defined amplitude. Upon activating, the SPD's suppression components transition from a high impendence (open) state to a low (closed) state. The purpose of the SPD is to redirect intense levels of surge current away from electronic equipment load. Surge current is diverted safely to the ground while the SPD maintains a relatively constant voltage drop across its suppression components throughout the full duration of the surge event. In other words, they protect sensitive electronic devices from momentary bursts of energy that are generated during lightning activity, utility grid switching actions, power factor correction procedures, and other internal and external transient events.

Туре	Response time (say≈)	Range of discharge current (say≈)	Waveform
Semiconductor	1 ns	1 kA	8/20 μs
Variable resistor	25 ns	20 kA	8/20 μs
Spark gap	100 ns	100 kA	10/350 μs

Parts used in SPD:

Depending on the intended application, SPD's can be designed using semiconductors, metal oxide varistors (MOVs), gas discharge tubes (GDTs), spark gaps or a combination of technologies. For example; SPDs used to protect a data signal line typically use semiconductors to take advantage of the fast acting operational characteristic of these components. But for AC main service entrance panels requiring high energy handling capabilities, an SPD using MOV or spark gap technology is a better choice. Semiconductors are fast acting but cannot withstand much surge energy. Spark gaps can endure enormous amounts of energy but are slow to respond and activate to a "bolted short." Hybrid suppression circuits employing spark gap components and MOVs are often used for SPD applications where fast-acting, high-energy dissipation is required.

10/350 µs Versus 8/20 µs Surge Current Test Waveforms

Two waveform tests generated in a laboratory simulate the amount of current associated with lightning activity. The 8 by 20 microsecond (8 x 20 μ s) impulse current is intended to replicate the effects of an indirect lightning strike. Whereas, the 10 x 350 μ s current waveform simulates a direct strike. Both waveforms are used to report an SPD's surge current handling abilities. The first value for each waveform defines how many microseconds for the current level to reach 90% of its maximum load. The second value indicates the time it takes for the current impulse to decay to 50% of its peak amplitude. Due to its longer duration, the 10 x 350 μ s waveform is a far more stressful impulse as it contains 20 times more energy than its 8 x 20 μ s counterpart.

Comparison of Lightning Test Currents

	1	2
Waveform µs	10/350	8/20
i max. (kA)	100	20
Q (As)	50	0.4



Data and Signal Line Shield Grounding Considerations

Generally speaking, when a shielded cable is routed between two buildings or distribution systems that reference separate grounding systems, then the shield at only one end of the cable run should be grounded to preclude the possibility creating an undesirable ground loop between the two earth ground references. To adequately protect data and communications interfaces, one end of the cable shield should directly reference the earth ground, and the other end of the cable run should reference the earth ground via a gas discharge tube, as shown here.



SPD Terms and Definitions

Nominal voltage UN	The nominal voltage of the system to be protected, for AC voltages it is indicated as RMS value.
MCOV	The maximum continuous supply voltage that can be applied to the SPD during its normal operation.
Nominal current IL	The highest value that the SPD can conduct continuously.
Nominal discharge current In	The maximum peak value $8/20\mu s$ surge current that can be conducted repeatedly by the SPD.
Max. discharge current Imax	The maximum peak value of 8/20µs that the SPD can safely discharge.
Lightning impulse current limp	A 10/350µs laboratory generated simulated test waveform intended to simulate the surge current associated with a direct lightning strike.
Voltage protection level Up	The level to which the SPD limits voltage as it is called upon to conduct a specified level of surge current.
Follow current extinguishing capability If	The maximum rms "follow current" (brought on by the surge current discharge) that the SPD can extinguish at UC.
Short-circuit withstand capability	The maximum short-circuit current the SPD can withstand.
Combined impulse Uoc	A laboratory generated (Open Circuit 1.2/50µs, Close Circuit 8/20µs) test impulse used to test SPDs to IEC 61643-1 Class III parameters.
Operating temperature range Tu (Nominal temperature range)	The temperature range where the SPD normally operates.
Response time tA	The time it takes a SPD to begin conducting surge current upon being subjected to its activating voltage level.
Bandwidth fG	The amount of data that can be passed along a communications channel during a given time period.
Data transmission speed VS	Data transfer rate indicating the number of bytes transmitted per second.
Return loss aR	The ratio of the power reflected back from the line to the power transmitted into the line.
Insertion loss aE	The ratio of the power received vs to the power transmitted in the line.

SURGE PROTECTION CATALOG



Lightning Protection of an Electronic System

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Section 5

AC/DC Power Products

DynaShield® ADSi Series



FEATURES

- Listed to UL 1449 4th Edition, Type 1 and Type 2
- 200 kAIC rated fuse disconnect
- Modular components easily serviceable
- Best filter options on the market advanced filtering targets most common transient surges and damaging medium frequency noise
- Copper bus connected surge modules
- 10 modes of protection
- Dual surge counter options (continuous and resettable)
- Smart monitoring option
- Dual NO/NC form C dry contacts (for remote monitoring & control)
- Individually fused and protected MOV technology
- NEMA 4 & NEMA 12 painted steel enclosure
- 10-year standard warranty

Product Description

With the DynaShield[®] ADSi series surge protection devices, companies can trust their mission-critical and expensive electronic equipment is protected. Since downtime can result in safety hazards and monetary loss, the ADSi has become a vital component upon which many companies rely.

This full-featured SPD protects all phases and modes against transient surges. With the filter option, it decreases noise by over 50 dB. No other surge protection device offers as much power quality protection.

The ADSi series has easy-to-service, replaceable modules. The unit also has many options including advanced EMI/ Noise filtering, resettable surge counter, and a wide selection of power quality meters making it the most versatile SPD on the market.







Specifications

Model	ADSi-080	ADSi-240			
Connection Type		Parallel Connected			
Agency Listings	Listed to I	JL 1449 4th Edition, Noise Filtering	g UL 1283		
Protection Modes	Line to Neutra	, Line to Ground, Line to Line, New	utral to Ground		
Operating Frequency Range		50 - 60 Hertz			
Maximum Surge Current Rating	160 kA per phase	480 kA per phase			
50 ohm EMI/RFI Attenuation	3 kHz / 1 MHz UL 1283-50 dB				
Response Time		< 1 nanosecond			
Status Indication	Green LEI	D (Working), Red LED (Alarm), Aud	lible Alarm		
Enclosure Protection Level		NEMA 12/4, Painted Steel			
Dimensions (H x W x D)	24" x 16" x 8"				
Weight (Maximum)	Up to 65 lbs				
Wire Connections	Lugs up to 2 AWG				
Operating Temperature	-40°C to +65°C (-40°F to +149°F)				
Operating Humidity		5% to 95%			

Selection Chart



Model Selection Guide

Comico Voltorio	MCOV	VPR L-N	VPR L-G	VPR N-G	VPR L-L
Service voltage	MCOV	080, 160 & 240	080, 160 & 240	080, 160 & 240	080, 160 & 240
120 V Single Phase	150 Vac	700 V	700 V	700 V	
120/240 V Split Phase	150 Vac	700 V	700 V	700 V	1000 V
120/208 V 3 Phase Wye	150 Vac	700 V	700 V	700 V	1000 V
127/220 V 3 Phase Wye	150 Vac	700 V	700 V	700 V	1000 V
240 V Single Phase	320 Vac	1000 V	1000 V	1000 V	
220/380 V 3 Phase Wye	320 Vac	1000 V	1000 V	1000 V	1800 V
240 V 3 Phase Delta	320 Vac		1000 V		1800 V
240/415 V 3 Phase Wye	320 Vac	1000 V	1000 V	1000 V	1800 V
240 V High Leg 3 Phase	150/320 Vac	700/1000 V	700/100 V	1000 V	1000/1800 V
277/480 V 3 Phase Wye	320 Vac	1000 V	1000 V	1000 V	1800 V
480 V 3 Phase Delta	600 Vac		1800 V		3000 V
347/600 V 3 Phase Wye	600 Vac	1800 V	1800 V	1800 V	3000 V
600 V 3 Phase Delta	680 Vac		2100 V		3400 V

*Contact your local rep for assistance in surge device selection

DynaShield® ADSc Series





Product Description

The DynaShield® ADSc Series SPD is a high performance surge protection device designed to protect critical panels such as main service entrance, distribution equipment, branch panels and motor control centers. The ADSc incorporates high-energy MOVs with the best performing EMI filter on the market to provide protection against transients originating from induced lightning strikes, utility switching and facility power noise.

The ADSc has real-time diagnostics including LED fault indicators for each phase of protection as well as an optional audible alarm. This SPD is available for all voltages and configuration up to 600V and is housed in a rugged NEMA 12 enclosure, most suitable for indoor applications.

DynaShield® ADSc products are listed to UL1449 4th edition and are backed by a 10 year standard warranty.



FEATURES

- Listed to UL 1449 4th edition, Type 2
- 10 modes of protection
- 200 kAIC fault current rating
- Advanced EMI/RFI noise filtering (-45 dB) 3 kHz - 1 MHz
- Optional 30 amp fuse allows direct connect to power bus
- Resettable surge counter option
- 10 year standard warranty



Specifications

Model	ADSc-080 ADSc-100 ADSc-200				
Connection Type		Parallel Connected			
Agency Listings	Liste	d to UL 1449 4th edition and UL	1283		
Protection Modes	Line to Neutral,	Line to Ground, Line to Line, Ne	eutral to Ground		
Operating Frequency Range		50 - 60 Hertz			
Maximum Surge Current Rating	160 kA per phase 200 kA per phase 400 kA per p				
Response Time		< 1 nanosecond			
Status Indication		Green LED			
Enclosure Protection Level		NEMA 12, Painted Steel			
Dimensions (H x W x D)	10.00" x 8.0	0" x 6.00" (Optional 15.50" x 12	.00" x 6.20")		
Weight (Maximum)		25 lbs			
Wire Connections	Stranded #10 AWG				
Wire Lead Length	36 inch				
Operating Temperature	-40°C to +65°C (-40°F to +149°F)				
Operating Humidity		5% to 95% non condensing			

Selection Chart



Model Selection Guide

	MCOV	VPR L-N	VPR L-G	VPR N-G	VPR L-L
Service voltage	MCOV	080, 100 & 200	080, 100 & 200	080, 100 & 200	080, 100 & 200
120 V Single Phase	150 Vac	700 V	700 V	700 V	
120/240 V Split Phase	150 Vac	700 V	700 V	700 V	1000 V
120/208 V 3 Phase Wye	150 Vac	700 V	700 V	700 V	1000 V
127/220 V 3 Phase Wye	150 Vac	700 V	700 V	700 V	1000 V
240 V Single Phase	320 Vac	1000 V	1000 V	1000 V	
220/380 V 3 Phase Wye	320 Vac	1000 V	1000 V	1000 V	1800 V
240 V 3 Phase Delta	320 Vac		1000 V		1800 V
240/415 V 3 Phase Wye	320 Vac	1000 V	1000 V	1000 V	1800 V
240 V High Leg 3 Phase	150/320 Vac	700/1000 V	700/1000 V	1000 V	1000/1800 V
277/480 V 3 Phase Wye	320 Vac	1000 V	1000 V	1000 V	1800 V
480 V 3 Phase Delta	600 Vac		1800 V		3000 V
347/600 V 3 Phase Wye	600 Vac	1800 V	1800 V	1800 V	3000 V
600 V 3 Phase Delta	680 Vac		2100 V		3400 V

*Contact your local rep for assistance in surge device selection

Surge Protection Device ADSx(2F) Series





FEATURES

- UL 1449 4th Edition, Type 1 and Type 2
- Thermally protected MOV technology
- Surge current rating up to 300 kA
- 200 kAIC fault current rating
- UL 1283 Listed EMI/RFI filtering available

Dimensions

ADSx(2F)-050 & ADSx(2F)-100





Product Description

DvnaShield[®] ADSx(2F) Series hardwired AC surge protection devices (SPDs) are fast responding devices designed to offer superior voltage protection levels at high surge currents.

The SPDs are listed to UL / cUL 1449 4th Edition Type 1 and Type 2 and are offered with surge current ratings of 50 kA, 100 kA, 200 kA and 300 kA to meet the most demanding protection requirements. The SPDs meet UL96A lightning Protection Master Label requirements (@20 kA In).

Diagnostics include easy to see status LEDs and dry contacts for remote annunciation. The ADSx(2F) models are Type 2 cUL Listed and provide complimentary UL 1283 listed frequency reactive circuitry (FRC) to attenuate EMI/RFI noise up to -50 dB @ 100 kHz.

Standard polycarbonate NEMA 4X enclosure allows for outdoor or indoor installation. Inquire about additional available configurations.

Specifications

Model	ADSx(2F)-050 ADSx(2F)-100 ADSx(2F)-200 ADSx(2F)-3				
UL 1449 Location Type	Type 1 and Type 2				
Connection Type		Parallel C	onnected		
Agency Listings		UL 1449 4th Editi	on, UL 1283, cUL		
Protection Modes	Line-to-N	leutral, Line-to-Ground,	Line-to-Line, Neutral-to	o-Ground	
Operating Frequency Range		47 - 63	3 Hertz		
Maximum Continuous Operating Voltage (MCOV)		115	5%		
Maximum Surge Current Rating	50 kA per phase	100 kA per phase	200 kA per phase	300 kA per phase	
Short Circuit Current Rating (SCCR)	200 kAIC				
UL 1449 Nominal Discharge Current (I _N)	20 kA				
50 ohm EMI/RFI Attenuation		63 dB max from 1	0 kHz to 100 MHz		
Response Time		< 1 nano	osecond		
Status Indication		Status LEDs, Ala	rm relay contacts		
Enclosure Protection Level		Polycarbona	te NEMA 4X		
Dimensions (H x W x D)	6.4" x 4.	8" x 3.5"	9.9" x 6.	4" x 4.7"	
Weight (Maximum)	51	bs	10	lbs	
Wire Connections		Stranded	#10 AWG		
Wire Lead Length	36 inch				
Operating Temperature	-40 °C to +65 °C (-40°F to 149°F)				
Operating Humidity		≤ 95% non	condensing		
Altitude		Up to 18	,000 feet		

Selection Chart



*Delta configurations do not come with a filter so the 2F is left off

Model Selection Guide

Service Voltage MCOV		VPR L-N	VPR L-G	VPR N-G	VPR L-L
Service voltage	NCOV	50 & 100 200 & 300	50 & 100 200 & 300	50 & 100 200 & 300	50 & 100 200 & 300
120 V Single Phase	180 Vac	900 V 800 V	800 V 800 V	700 V 700 V	
120/240 V Split Phase	180 Vac	900 V 800 V	800 V 800 V	700 V 700 V	1500 V 1200 V
120/208 V 3 Phase Wye	180 Vac	900 V 800 V	800 V 800 V	700 V 700 V	1500 V 1200 V
127/220 V 3 Phase Wye	180 Vac	900 V 800 V	800 V 800 V	700 V 700 V	1500 V 1200 V
240 V Single Phase	320 Vac	1500 V 1200 V	1200 V 1200 V	1200 V 1200 V	
220/380 V 3 Phase Wye	320 Vac	1500 V 1200 V	1200 V 1200 V	1200 V 1200 V	2500 V 2000 V
240 V 3 Phase Delta	320 Vac		800 V 800 V		1200 V 1200 V
240/415 V 3 Phase Wye	320 Vac	1500 V 1200 V	1200 V 1200 V	1200 V 1200 V	2500 V 2000 V
277/480 V 3 Phase Wye	320 Vac	1500 V 1200 V	1200 V 1200 V	1200 V 1200 V	2500 V 2000 V
480 V 3 Phase Delta	550 Vac		1200 V 1200 V		2500 V 2500 V
347/600 V 3 Phase Wye	420 Vac	1500 V 1500 V	1500 V 1500 V	1500 V 1500 V	2500 V 2500 V
600 V 3 Phase Delta	690 Vac		1500 V 1500 V		2500 V 2500 V

NOTE

• Alternate enclosure & voltage configurations available

DynaShield® ADSrm Series



Product Description

DynaShield® ADSrm SPDs are designed to protect valuable commercial equipment. Power quality is more important today then ever before and that means not just any surge protector can be relied on to protect your sensitive electrical and electronic equipment.

DynaShield® products are a cost effective solution for any critical location in your facility, from high risk sites such as telecom & petroleum to point-of-use equipment such as laboratory devices, manufacturing equipment, and computers.

With DynaShield® ADSrm Surge Protection Devices installed you can count on complete facility protection.



FEATURES

- All modes protection
- Weather resistant perfect for outdoor applications
- Listed to UL 1449 4th Edition, Type 2
- 4 modes of discrete protection
- Green status indicating lights per phase
- Individually fused MOV technology
- 5-year standard warranty



Specifications

Model	ADSrm-040
Connection Type	Parallel Connected
Agency Listings	Listed to UL 1449 4th Edition
Protection Modes	Line-to-Neutral, Line-to-Ground, Line-to-Line, Neutral-to-Ground
Operating Frequency Range	50 - 60 Hertz
Maximum Surge Current Rating	40 kA per phase
Response Time	< 1 nanosecond
Status Indication	Green LED
Enclosure Protection Level	NEMA 4X, Plastic UL 94 V-0
Dimensions (H x W x D)	3.230" x 5.515" x 2.005"
Weight (Maximum)	1.7 lbs
Wire Connections	Stranded #10 AWG
Wire Lead Length	24 inch
Operating Temperature	-40°C to + 65°C (-40°F to +149°F)
Operating Humidity	5% to 95% non condensing

Selection Chart



Model Selection Guide

Davit Number	Corrigo Valtara	MCOV	· ·	Voltage Protecti	on Rating (VPR)	
Part Number	Service Voltage	IVICOV	L-N	L-G	N-G	L-L
ADSrm-XXX-120S	120 V Single Phase	150 Vac	700 V	1200 V	-	1200 V
ADSrm-XXX-120T	120/240 V Split Phase	150 Vac	700 V	1200 V	-	1200 V
ADSrm-XXX-120W	120/208 V 3 Phase Wye	150 Vac	700 V	1200 V	700 V	1200 V
ADSrm-XXX-127W	127/220 V 3 Phase Wye	150 Vac	700 V	1200 V	-	1200 V
ADSrm-XXX-240S	240 V Single Phase	320 Vac	1000 V	1800 V	-	1800 V
ADSrm-XXX-220W	220/380 V 3 Phase Wye	320 Vac	1000 V	1800 V	1000 V	1800 V
ADSrm-XXX-240D	240 V 3 Phase Delta	320 Vac	-	700 V	-	1200 V
ADSrm-XXX-240W	240/415 V 3 Phase Wye	320 Vac	1000 V	1800 V	1000 V	1800 V
ADSrm-XXX-240H	240 V High Leg 3 Phase	150/320 Vac	700/1000 V	700/1000 V	1000 V	1000/1800 V
ADSrm-XXX-480W	277/480 V 3 Phase Wye	320 Vac	1000 V	1800 V	1000 V	1800 V
ADSrm-XXX-480D	480 V 3 Phase Delta	550 Vac	-	1800 V	-	3000 V

*Contact your local rep for assistance in surge device selection

DynaShield® ADSrs Series



Product Description

With many of the largest expenses in the household being electronic devices, Alltec's DynaShield® ADSrs goes above and beyond to protect those investments. In today's modern home, a power strip surge protector alone is not enough to protect the appliances and electronics used. Surge strips can only provide limited protection and low-level suppression for the items plugged into the unit. The ADSrs provides power protection for all electronic devices including appliances such as dryers, ranges, home entertainment and HVAC systems.

With our growing reliance on expensive electronics and the inevitable move towards smart homes; this residential SPD is the perfect product to protect a home and extend the life of electrical equipment from electrical and lightning induced surges.

LLTEC



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Dimensions

(4 PLCS.)

FEATURES

- Weather resistant perfect for outdoor applications
- Compact design
- Affordable solution
- 4 Modes of discrete protection
- Green status indicating lights per phase
- Individually fused MOV technology
- Easy installation
- Listed to UL 1449 4th edition
- 5-year standard warranty



Specifications

Model	ADSrs-040-120T
Connection Type	Parallel Connected
Agency Listings	Listed to UL 1449 4th Edition
Protection Modes	Line to Neutral, Line to Line, Neutral to Ground, Line to Ground
Operating Frequency Range	50 - 60 Hertz
Maximum Surge Current Rating	40 kA per phase
Response Time	< 1 nanosecond
Status Indication	Green LED
Enclosure Protection Level	NEMA 4X, Plastic UL 94 V-0
Dimensions (H x W x D)	3.230" x 5.515" x 2.005"
Weight (Maximum)	1.7 lbs
Wire Connections	Stranded #10 AWG
Wire Lead Length	24 inch
Operating Temperature	-40°C to + 65°C (-40°F to +149°F)
Operating Humidity	5% to 95% non condensing

Split Phase 3W



DynaShield® ADSIp Series



Product Description

The DynaShield® ADSIp thoroughly protects important electronic equipment including commercial and industrial lighting panels, HVAC, traffic signals, well pumps, and security systems. Power quality is an important consideration with so much of the electrical load being these sensitive electronics. DynaShield® ADSIp SPDs are the result of 25+ years of power quality experience tied into one of the smallest packages on the market.

The small size of this SPD and powerful protection make it a perfect product for those common locations where larger SPDs cannot be used. The ADSIp easily installs on any standard lighting panel through a "knock-out" and any free breaker sized from 20-40 amps. While the size is diminutive, the ADSIp still has industrial strength protection, with surge levels up to 36,000 amps (8 x 20 μ s).

Dimensions

Ø0.188 (2 PLCS.) UIT 0.125 (2 PLCS.) 0.070 (2 PLCS.) 0.070 (2 PLCS.) (2

FEATURES

- Provides 36 kA per phase of protection
- Discrete protection on both line-to-ground and line-to-line
- Includes prewired pigtails to facilitate quick installations



Specifications

Model	ADSIp-030
Connection Type	Parallel Connected
Agency Listings	Listed to UL 1449 4th edition
Protection Modes	Line to Neutral, Line to Ground, Line to Line
Operating Frequency Range	50 - 60 Hertz
Maximum Surge Current Rating	36 kA per phase
Response Time	< 1 nanosecond
Status Indication	Green LED
Enclosure Protection Level	NEMA 4X, Plastic UL 94 V-0
Dimensions (H x W x D)	3.875" x 2.082" x 1.500"
Weight (Maximum)	10 oz
Wire Connections	Stranded #14 AWG
Wire Lead Length	18 inch
Operating Temperature	-40°C to + 60°C (-40°F to +140°F)

Selection Chart



Model Selection Example

Deut Number	Number Service Voltage	MCOV	Voltage Protection Rating (VPR)			
Part Number		IVICOV	L-N	L-G	L-L	
ADSIp-030-120S	120 V Single Phase	150 Vac	700 V	1200 V	700 V	
ADSIp-030-240S	240 V Single Phase	320 Vac	1000 V	1800 V	1000 V	
ADSIp-030-480S	480 V Single Phase	550 Vac	2500 V	3200 V	2500 V	

*Contact your local rep for assistance in surge device selection

Surge Protection Device PT-RD AC Series



FEATURES:

- Listed to UL 1449 4th Edition Type 4 for use in Type 2 applications
- SCCR 100 kAIC
- Series or parallel Installation
- LED status
- Screw or DIN mount

Product Description

The RD Series is designed to protect single phase low voltage AC power supply system against transient surges at LPZ1 and higher. The SPDs are ANSI/UL 1449 4th Edition Type 4 recognized components for use in Type 2 applications. Ideal for use in SCADA Systems, PLCs and most other sensitive electronic equipment.

Specifications

Model	PT-RD-20- 120V-30A	PT-RD-20- 250V-30A	PT-RD-40- 120V-30A	PT-RD-40- 250V-30A	
Tested To		UL 1449 4	th Edition		
SPD Category	Туре	4 for use in T	ype 2 applicat	ions	
Number Of Ports		Two Por	t Device		
Technology		Metal Oxide V	/aristor (MOV)		
Nominal Operating Voltage Un	120 Vac	240 Vac	120 Vac	240 Vac	
Maximum Current		30	A		
Maximum Continuous Operating Voltage Uc	140 V	260 V	140 V	260 V	
Nominal Discharge Current I _N (8 x 20 µs)	3 kA	3 kA	3 kA	3 kA	
Maximum Discharge Current I_{max} (8 x 20 μ s)	20 kA	20 kA	40 kA	40 kA	
$Voltage\ Protection\ Rating\ Vpr\ @\ I_N \qquad (L-N)$	600 V	800 V	500 V	800 V	
(L-PE)	600 V	800 V	500 V	800 V	
(N-PE)	600 V	800 V	600 V	800 V	
Response Time	< 1 nanosecond				
Visual Status Indication	LED: Green = Normal, Dark = Replace				
Location Category	Indoor Only				
Method of Mounting	Wall mount or Fixed 35 mm DIN rail				
Dimension ($H \times W \times D$)	100 mm x 35.6 mm x 57.9 100 mm x 71.1 mm			.1 mm x 57.9	
	mm (3.94" x 1.4" x 2.3")		mm (3.94" x 2.8" x 2.3")		
Weight (Max)	0.25 kg (0.5 lb) 0.45 kg (0.9 lb)			(0.9 lb)	
Maximum Wire Size	Ν	/lultistrand 13	mm ² (#6 AWG	i)	
Operating Temperature	-40°C to +80°C (-40 °F to 176 °F)				
Relative Humidity	≤ 95% non condensing				
Altitude	≤ 3000 m				
Enclosure Protection Level	IP 20				
Housing Inflammability Rating		Thermoplast	ic, UL 94 V-0		





Surge Protection Device PT-RD DC Series



FEATURES:

- Peak surge current up to 20 kA
- Continuous current up to 30 A
- Series or parallel installation
- LED status
- Screw or DIN mount



Product Description

The RD Series is designed to protect DC power supply system against transient surges at LPZ1 and higher. Ideal for use in SCADA Systems, PLCs and most other sensitive electronic equipment.

Specifications

Model	PT-RD- 05-05V- 05A	PT-RD- 20-12V- 15A	PT-RD- 10-24V- 15A	PT-RD-20- 24V-30A	PT-RD-20- 48V-30A
Tested To	IEC 61643-11, IEEE C62.45				
IEC Arrester Category	Class II				
Number Of Ports	Two Port Device				
Technology	Metal Oxide Varistor (MOV)				
Nominal Voltage U _N	5 V	12 V	24 V	24 V	48 V
Maximum Current	5 A	15 A	15 A	30 A	30 A
Maximum Continuous Operating Voltage Uc	10 Vdc	16 Vdc	30 Vdc	30 Vdc	70 Vdc
Nominal Discharge Current I _N (8x20µs)	3 kA	3 kA	3 kA	3 kA	3 kA
Maximum Discharge Current I _{max} (8x20µs)	5 kA	20 kA	10 kA	20 kA	20 kA
Voltage Protection Level U _P @ I _N (8x20µs)	142 V	165 V	188 V	180 V	204 V
Response Time	< 1 nanosecond				
Visual Status Indication	LED: Green = Normal, dark = Replace				
Location Category	Indoor Only				
Method of Mounting	Wall mount or Fixed 35 mm DIN rail				
Dimension (H x W x D)	100 mm x 35.6 mm x 57.9 mm (3.94" x 1.4" x 2.3")			100 mm x 71.1 mm x 57.9 mm (3.94" x 2.8" x 2.3")	
Weight (Max)	0.25 kg (0.5 lb)			0.45 kg (0.9 lb)	
Maximum Wire Size	Multistrand 2.08 mm ²			Multistrand 13 mm ²	
	#14 AWG #6 AWG				WG
Operating Temperature	-40°C to +80°C (-40 °F to 176 °F)				
Relative Humidity	≤ 95% non condensing				
Altitude	≤ 3000 m				
Enclosure Protection Level	IP 20				
Housing Inflammability Rating	Thermoplastic, UL 94 V-0				



Surge Protection Device
ADPV Series



FEATURES:

- High surge current capacity
- Designed for maximum reliability
- Easy installation
- Thermally protected MOV technology
- Replaceable Suppression Modules
- 5 year warranty

Product Description

Alltec's ADPV Series are designed to protect DC photovoltaic and wind power systems against lightning and transient surges.

They offer convenient DIN rail base with replaceable suppression modules, status window and remote alarm contacts.

Available in 2 pole (600VDC) or 3 pole (1000 and 1500VDC) to protect all common Solar DC applications.

The ADPV-DC Series employ fast acting, high energy, thermally protected metal oxide varistors (MOV) in their suppression circuits. ADPV products are equipped with a visual status window to monitor their operation.

Specifications

Model	ADPV600/2P	ADPV1000/3P	ADPV1500/3P		
Designed and Tested To	IEC61643- 31:2018; UL 1449 4th Edition				
IEC Arrester Category	Class II				
Technology	Thermally Protected MOV				
Voltage Protection Level (Vpl)	1.5 kV	2.5 kV	4 kV		
Maximum Continuous Operating Voltage Uc	600 V	1000 V	1500 V		
Nominal Discharge Current I _N (8 x 20 µs)	20 kA				
Maximum Discharge Current Imax (8 x 20 µs)	40 kA				
Short Circuit Current Rating (SCCR)	35 kV	50 kV	65 kV		
Dry Relay Contacts (for remote annunciation)	Form C, Normally Closed and Normally Open Contacts				
Response Time	< 25 nanoseconds				
Visual Status Indication	Window: Green = Normal, Red = Replace				
Location Category	Indoor/Enclosed Only				
Method of Mounting	Fixed 35 mm DIN rail, Ref: EN 50022/DIN46277-3				
Dimension (H x W x D) (2 pole)	90 mm x 36 mm x 67 mm (3.6" x 1.4" x 2.64") DIN 43880				
Dimension (H x W x D) (3 pole)	90 mm x 54 mm x 67 mm (3.6" x 2.1" x 2.64") DIN 43880				
Weight (Max)	2 Pole = 0.3 kg (0.66 lb) 3 Pole = 0.55 kg (1.21 lb)				
Maximum Wire Size (DC Terminals)	Single strand 35 mm ² (#2 AWG), Multi-strand 25 mm ² (#4 AWG)				
Operating Temperature	-40°C to +70°C (-40 °F to 158 °F)				
Relative Humidity	\leq 95% non condensing				

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Surge Protection Device AD-AC Series:



Standard Configuration



Product Description

ALLTEC's **AD-AC** surge protection devices are heavy duty UL recognized type 1ca (UL 1449 4th Edition) AC SPDs. They offer convenient DIN rail mounted base with replaceable suppression protection modules.

The AD-AC Series provides protection against lightning and transient surges. They are particularly effective in high-lightning environments where critical equipment is exposed to large surge currents.

The AD-AC devices employ fast acting, high energy dissipating, thermally protected metal oxide varistors (TPMOV) in their suppression circuits and employ arc quenching technology for maximum safety. They are equipped with a visual status window to monitor their operation.

FEATURES:

- UL 1449 4th Edition
- · Very high surge current capacity
- High reliability
- Easy installation
- Environmentally friendly

Versatile application enhances electrical/ electronic equipment load reliability by:

- Lowering equipment maintenance costs
- Reducing operational downtime
- Preventing lightning induced hardware failures

Increases return on investment (ROI) by:

- Extending equipment life expectancy
- Lowering the number of insurance claims
- Extending Equipment Mean Time Between Failure (MTBF)
- · Eliminating costs associated with service calls

Dimensions





Section 6

Data Signal Products

DynaShield[®] Surge Protection Device KSB LJ8 Series

FEATURES:

- 1000 Mbps transmission rate
- DIN rail or In-Line mounting
- Hybrid silicon + GDT design
- Shielded RJ45 jacks
- Fast response

Product Description

The KSB LJ8 Series is a Surge Protection Device family designed to protect single RJ-45 connector for 10 BT/100 BT/1000 BT data signals with transmission rates up to 1000 Mbps.

Specifications

Model	KSB LJ8-5	KSB LJ8-12	KSB LJ8-24	KSB LJ8-48
Certification	Ť.	IEC61643	3:21-2005	
Number Of Ports		Two Por	t Device	
Technology	Hybrid S	ilicon Diode a	nd Gas Discha	arge Tube
Nominal Voltage U _N	5 V	12 V	24 V	48 V
Maximum Continuous Operating Voltage Uc	6 V (5 V~)	15 V (12 V~)	28 V (24 V~)	60 V (48 V~)
C2 Nominal Discharge Current IN (8 x 20 µs) per line		100 A (L-L),	2.5 kA (L-G)	
C2 Total Nominal Discharge Current Imax (8 x 20 µs)	400 A (L-L),	20 kA (L-G)	
Nominal Current		. 1	Α	
Voltage Protection Level U _P @C2 (8 x 20 µs) (L-I) ≤ 30	≤ 45	≤ 55	≤ 190
(L-PI) ≤ 600	≤ 600	≤ 600	≤ 600
Voltage Protection Level U _P @C3 (1 kV/µs) (L-I	.) ≤ 24	≤ 38	≤ 48	≤ 145
(L-PI) ≤ 800	≤ 800	≤ 800	≤ 800
Protected Pins		Pins 1/2, 3	/6, 4/5, 7/8	
Maximum Transmission Rate		1000	Mbps	
Insertion Loss (80 MHz)		≤ 3.0	0 dB	
Response Time		< 1 nano	osecond	
Location Category		Indoo	r Only	
Method of Mounting	3	5 mm DIN rail	or In line serie	es
Connection	Shielded RJ-45; Female / Female			
Grounding	Wire; 2.5 n	Wire; 2.5 mm ² (#14 AWG), Length 275 mm (10.8")		
Dimension (H x W x D)	85 mm x 25 mm x 40 mm (3.4" x 1" x 1.6")			
Weight (Max)		0.08 kg (0.2 lb)		
Operating Temperature		-25°C to +70°C		
Relative Humidity		≤ 95% non condensing		
Altitude		≤ 3000 m		
Enclosure Protection Level		IP 20		
Enclosure Material		Aluminum		

Schematic



Dimensions



Surge Protection Device KSB LC Series



FEATURES

- Hybrid design for LPZ 0_A-2
- Slim 12 mm wide DIN rail mount
- Common mode protection
- Fast response
- Excellent voltage protection level

Product Description

The KSB LC series designed for use at LPZ 0_A -2 or higher to protect 2 wire unbalanced analog circuits, such as 4-20 mA loops, 110 V telephone, ADSL or ISDN applications. The SPDs offer convenient DIN rail mounted base with replaceable suppression protection modules.

Specifications

Model	KSB 24V LC	KSB 48V LC	KSB 110V LC	
Tested To	IEC61643-21:2000; YD/T 1542-2006; GB 18802 21-2004			
Number Of Ports		Two Port Device	-	
Technology	Diode + GDT	Diode + GDT	MOV + GDT	
Protection Modes		Common Mode		
Nominal Voltage U _N	24 V	48 V	110 V	
Nominal Current IL	0.5 A	0.5 A	1 A	
Maximum Continuous Operating Voltage Uc	26 V (19 V~)	55 V (39 V~)	170 V (120 V~)	
Lightning Impulse Current I _{imp} (10 x 350 µs) (L-L	2.5 kA	2.5 kA	2.5 kA	
L-PE) 5 kA	5 kA	5 kA	
Nominal Discharge Current I _N (8 x 20 µs) Tota	20 kA	20 kA	20 kA	
Voltage Protection Level at I _{imp} (L-L	≤ 90 V	≤ 150 V	$\leq 600 \text{ V}$	
(L-PE) ≤ 45 V	≤ 75 V	\leq 300 V	
Bandwidth	5.1 MHz	8.5 MHz	24 MHz	
Capacitance (L-L)	0.7 nF	0.3 nF	0.2 nF	
(L-PE	1.3 nF	0.6 nF	0.4 nF	
Series Impedance	2.2 Ω	2.2 Ω	4 Ω	
Response Time		< 1 nanosecond		
Location Category		Indoor Only		
Method of Mounting	Fixed 35 mm DIN rail, Reference EN 50022/ DIN46277-3			
Dimension (H x W x D)	92 mm x 12 m	m x 64.5 mm (3.6	6" x 0.5" x 2.5")	
Weight (Max)	0.33 kg (0.74 lb)			
Maximum Wire Size	Multi strand 2.5 mm ² (#12 AWG)			
Operating Temperature	-40°C to +80°C			
Relative Humidity	ative Humidity ≤ 95% non condensing			
Altitude	≤ 3000 m			
Enclosure Protection Level		IP 20		

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KSB 110V LC

Surge Protection Device KSBT SC Series



FEATURES

- Hybrid silicon + GDT design
- Slim 6 mm wide DIN rail mount
- Common mode protection
- Fast response
- Excellent voltage protection level

Product Description

The KSBT SC Series is designed for use at LPZ 0_B -2 or higher to protect 2 wire unbalanced analog signals typically used in measurement and control circuits such as thermocouples. The SPDs offer convenient DIN rail mounting in a slim 6 mm wide package.

Specifications

Model		KSBT 12V SC	KSBT 24V SC	KSBT 48V SC	KSBT 110V SC
Tested To		IECe	GB 18802	; YD/T 1542-2 21-2004	006;
Number Of Ports			Two Por	t Device	
Technology		Hybrid S	Silicon Diode a	nd Gas Discha	rae Tube
Protection Modes		Comm	on mode: 2 wi	re signal with o	around
Nominal Voltage U _N		12 V	24 V	48 V	110 V
Nominal Current IL		0.5 A	0.5 A	0.5 A	0.5 A
		14 V (9.5	33 V (23	55 V	170 V
Maximum Continuous Operating Voltage Uc		V~)	V~)	(38.5 V~)	(120 V~)
Nominal Discharge Current IN (8 x 20 us) Per Li	ne		51	kA	(-==
Nominal Discharge Current I _N (8 x 20 µs) Total			10	kA	
Voltage Protection Level at I _N (L	-L)	≤ 55 V	≤ 100 V	≤ 175 V	≤ 500 V
(L-I	PE)	≤ 40 V	≤ 65 V	≤ 100 V	≤ 270 V
Voltage Protection Level at 1 kV/µs (L	-L)	≤ 36 V	≤ 90 V	≤ 160 V	≤ 460 V
(L-I	PÉ)	≤ 19 V	≤ 45 V	≤ 80 V	≤ 230 V
Bandwidth		2.5 MHz	6 MHz	10 MHz	16 MHz
Capacitance (L	-L)	1.2 nF	0.5 nF	0.3 nF	0.2 nF
(L-	PE)	2.4 nF	1 nF	0.6 nF	0.4 nF
Series Impedance		1.8 Ω	1.8 Ω	1.8 Ω	1.8 Ω
Response Time			< 1 nano	osecond	
Location Category			Indoo	r Only	
Method of Mounting		Fixed 35 mm	DIN rail, Refer	ence EN 50022	2/DIN46277-3
Dimension (H x W x D)		90 mm	x 6 mm x 63 n	nm (3.6" x 0.2"	x 2.5")
Weight (Max)			0.05 kg	(0.1 lb)	
Maximum Wire Size	Multi strand 2.5 mm ² (#12 AWG)				
Operating Temperature	erating Temperature -40°C to +80°C				
Relative Humidity	\leq 95% non condensing				
Altitude	≤ 3000 m				
Enclosure Protection Level			IP	20	
Housing Inflammability Rating	Housing Inflammability Rating Thermoplastic, UL 94 V-0				
Certifications CE (LVD, EMC)					

Schematic



Dimensions

6



Surge Protection Device KSBT C Series



FEATURES

- Slim profile 6 mm DIN rail module
- Bi-directional silicon diode design
- Common mode protection
- 10 A nominal current
- Fast response

Product Description

The KSBT C series is designed for use at LPZ 1-2 or higher to protect 2 wire single pair unbalanced analog circuits, such as 4-20 mA loops.

Specifications

Model	KSBT 12V C	KSBT 24V C	KSBT 48V C	KSBT 60V C
Tested To	IEC61643-11:2011			
Number Of Ports		Two Por	t Device	
Protection Mode		Commo	n Mode	
Technology		Silicon	Diode	
Nominal Voltage U _N	12 V	24 V	48 V	60 V
Nominal Current IN		10	A	
Maximum Continuous Operating Voltage Uc	13 V (9 V~)	48 V (19.5 V~)	58 V (41 V~)	70 V (49.5 V~)
Lightning Impulse Current I _{imp} (10x350µs) Per Line	0.5 kA	0.5 kA	0.5 kA	0.5 kA
Nominal Discharge Current I _N (8x20µs) Per Line	0.4 kA	0.3 kA	0.15 kA	0.12 kA
Nominal Discharge Current I _N (8x20µs) Total	0.8 kA	0.6 kA	0.3 kA	0.24 kA
Voltage Protection Level at I _N	≤ 25 V	≤ 48 V	≤ 90 V	≤ 110 V
Voltage Protection Level at 1 kV / µs	≤ 18 V	≤ 38 V	≤ 78 V	≤ 95 V
Bandwidth	2.5 MHz	5.5 MHz	11 MHz	14 MHz
Capacitance (L - L)	1.2 nF	0.6 nF	0.3 nF	0.25 nF
Response Time		< 1 nano	osecond	
Location Category		Indoo	r Only	
Method of Mounting	Fixed 35 mm DIN rail, Reference EN 50022/DIN46277-3			
Dimension (H x W x D)	90 mm x 6 mm x 63 mm (3.6" x 0.24" x 2.5")			
Weight (Max)	0.33 kg (0.74 lb)			
Maximum Wire Size	Multi strand 2.5 mm ² (#12 AWG)			
Operating Temperature	Derating Temperature -40°C to +80°C			
Relative Humidity		≤ 95% non	condensing	
Altitude	≤ 3000 m			
Enclosure Protection Level	IP 20			
Housing Inflammability Rating	Thermoplastic, UL 94 V-0			

Schematic

Dimensions





DynaShield Options

ADSi Option Code	Option Description		
AL	Aluminum Enclosure		
S	Stainless Steel Enclosure		
SF	EMI / Noise Filter (-45dB)		
AF	Advanced EMI / Noise Filter (-55dB)		
D	600V 40 amp Fuse Disconnect		
SC	1 Resetable Surge Counter		
SC2	2 Resetable Surge Counters		
X2	Power Quality Meter, Multifunctional Meter, All Measurements, DNP 3.0, 2 Meg. Datalogging		
X3	Power Quality Meter, Harmonics 40th order - Waveform Scope		
X4	Power Quality Meter, Limits & Control		
X5	Power Quality Meter, 3 Meg Logging / 64 Samples per waveform		
X6	Power Quality Meter, 4 Meg Logging / 512 Samples per cycle waveform		
ADSc Option Code	Option Description		
A	Red LED, Audible and Remote Alarm Relay Contact		
SC	1 Resetable Surge Counter		
SC2	2 Surge Counters (1 Resetable)		
SF	EMI / Noise Filter (-45dB)		
AF	Advanced EMI / Noise Filter (-55dB)		
IF	Internal 30 Amp fuse - 600 kAIC - allows bus connect		
ADSrm Option Code	Option Description		
R	NC / NO Form C Contacts		
F	EMI/Noise Filter (-40 dB @1MHz)		
ADSrs Option Code	Option Description		
R	NC / NO Form C Contacts		
F	EMI/Noise Filter (-40 dB @1MHz)		
ADSIp Option Code	Option Description		
RL	Remote Light		

Option code can be added to the end of the part number, see examples below:

ADSi-080-120T-SF - ADSi 120/240V Split Phase 160kA/Phase - with EMI Filter

ADSc-100-240H-**SC** - ADSc 240V 3 Phase High Leg Delta 200kA/Phase with resettable surge counter ADSrm-040-120W-**R** - ADSrm 120/208V 3 Phase Wye 40kA/Phase-Relay Contact



Advanced Technologies

TerraDyne®

Electrolytic Grounding System

Introduction

One of the most important investments a company makes is in its selection of sensitive electronic equipment. As this equipment becomes more sophisticated and electrically susceptible, the need for an exceptionally low-resistance grounding system becomes more crucial. It is in response to this requirement that ALLTEC developed the TerraDyne[®] Electrolytic Grounding System.

TerraDyne® Electrolytic Grounding System (EGS)

The TerraDyne[®] EGS is a multipurpose grounding system. It has been designed to provide long term protection from lightning, electrical transients, static discharges, electromagnetic interference and other electrical hazards. The system may be used for virtually any application where the protection of machinery, electronics, and personnel is important.

The TerraDyne[®] EGS was designed for use in any type of soil condition. Some of the many applications where it is commonly used include: cellular, radio and television broadcasting sites, computer facilities, power substations, communication centers, medical facilities and industrial plants.

Protecting your expensive equipment is essential. The TerraDyne[®] EGS enhances the performance of your electronics, stabilizes signal references and reduces the risk of injuries. The end result is a stable grounding system that provides undisturbed long-term performance while maintaining cost efficiency.



Principles of Operation

The TerraDyne[®] EGS effectively utilizes a hygroscopic process to acquire moisture from the atmosphere. The moisture and the nontoxic chemicals inside the electrode react and create an electrolytic solution. This electrolytic solution leaches into the surrounding soil through ports that have been positioned in the electrode. This process improves the soil conductivity and dramatically reduces electrical resistance between the electrode and the earth.

The TerraDyne[®] also takes advantage of another benefit. The hole bored for the installation is back-filled with TerraFill[®], which also assists in substantially lowering the earth's resistance by creating a direct, low resistance, electrical connection between the electrode and the earth. The use of TerraFill[®] will reduce impedance by increasing the effective contact area of the electrode to the soil. TerraFill[®] is an easily applied product manufactured from environmentally safe and stable products. Each kit includes TerraFill[®] as the backfill material.

TerraDyne® Innovations

Through extensive research and development of the electrolytic grounding concept, our engineers have designed the TerraDyne[®] to enhance the overall performance of any grounding application. The TerraDyne[®] EGS may be utilized on any project with complete confidence that it will meet or exceed any existing grounding specification.

The TerraDyne[®] Electrolytic Grounding Systems are guaranteed for 30 years, with an expected life of at least 50 years. The systems are available in vertical or horizontal models. Vertical electrodes are usually installed using an augur or other drilling equipment. Horizontal electrodes are installed in trenches and utilized where the soil is rocky or excavation conditions are poor. The electrodes vary in length from 8 to 300 feet. Custom lengths, accessories and design options are available.





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TerraDyne® Electrolytic Grounding System

TerraDyne® Models

There are three models to choose from.



TerraFill® Ground Enhancing Backfill

There are four types to choose from. For more information see pages: 87-88.



Inspection/Test Wells

There are four models to choose from. For more information see pages: 89-90.



TerraDyne[®] Part Numbering System

To order, simply follow the steps below to specify the type and size of the unit.

Example: TG-8S-2T-36-2F-FL (Vertical Model)

TerraDyne® Vertical Model 8' Shaft with 36" of 2T Conductor, 2 bags of TerraFill®, and Fiberlyte Test Well

TG -	8S -	2T -	36 -	2F -	FL
(1)	(2)	(4)	(5)	(6)	(7)

Example: TG-20L-H36-4/019T-36-4F-P (Horizontal Model)

TerraDyne[®] Horizontal Model 20' Shaft with 36" Riser, 36" of 4/0-19T Conductor, 6 bags of TerraFill[®], and Poly Plastic Test Well

TG -	20L -	H36 -	4/019T -	36 -	6F -	Ρ
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Туре	TG = TerraDyne®
(2) Length	 8 = 8', 10 = 10', 20 = 20', 40 = 40' For Deep Series Model: 100 = 100', 200 = 200', or 300 = 300' *Additional Lengths are available upon request. (Note: TG-xxL = Horizontal; TG-xxS = Straight/Vertical)
(3) Riser Height**	 H = Horizontal Model **For Horizontal Model only, please choose the riser height. 24 = 24", 36 = 36", etc (Additional heights are available upon request.)
(4) Conductor Size***	2T = No. 2 AWG Solid Tinned, 2/019 = 2/0 AWG 19 Strand, 4/019 = 4/0 AWG 19 Strand, 2/019T = 2/0 AWG 19 Strand Tinned, 4/019T = 4/0 AWG 19 Strand Tinned, etc ***Additional conductor sizes are available upon request.
(5) Conductor Length (inch)	24 = 24", 36 = 36", etc (Additional lengths are available upon request.)
(6) Backfill Qty. and Type	<pre>xF = # of bags of TerraFill® Backfill (TF-50) xxD = # of bags of TerraFill® Deep Series Backfill (TF-50DS)</pre>
(7) Test Well Type	P = WELL-P (Poly Plastic Test Well) FL = WELL-FL (Fiberlyte Test Well) C = WELL-C (Concrete Test Well)

NOTE:

- All TerraDynes are constructed using Type "K" Copper 2" I.D. Tube
- Refer to page 25 for conductors.

Typical TerraFill® Quantity Requirements

Vertical	Models	Horizontal Models		Deep Series Models	
Length	TF-50 (Qty.)	Length and Riser Length	TF-50 (Qty.)	Length	TF-50DS (Qty.)
8' TerraDyne®	2	10' TerraDyne® and 24" Riser	3	100' TerraDyne®	25
10' TerraDyne®	2	10' TerraDyne [®] and 36" Riser	3	200' TerraDyne®	50
20' TerraDyne®	4	20' TerraDyne [®] and 24" Riser	6	300' TerraDyne®	75
40' TerraDyne®	8	20' TerraDyne [®] and 36" Riser	6		

NOTE

- Backfill quantities are based upon 6" diameter hole.
- TerraDyne[®] Vertical Model: Two (2) bags of TerraFill[®] Backfill are included with each 10' unit.
- TerraDyne[®] Horizontal Model: Three (3) bags of TerraFill[®] Backfill are included with each 10' unit.
- TerraDyne® Deep Series Model: Six (6) bags of TerraFill® Deep Series Backfill are included with each 20' length.

TerraDyne® Vertical Models

Part Number	Description	Approximate Weight
TG-8S-4/019-36-2F-P	TerraDyne [®] , Copper, 2" Type K, 8', Vertical, 4/019 w/36" Pigtail, 2 bags TerraFill [®] , Poly Test Well w/Cover	127 lb. (57.61 kg)
TG-10S-4/019-36-2F-P	TerraDyne [®] , Copper, 2" Type K, 10', Vertical, 4/019 w/36" Pigtail,	133 lb. (60.33 kg)
	2 bags TerraFill [®] , Poly Test Well w/Cover	
TG-20S-4/019-36-4F-P	TerraDyne [®] , Copper, 2" Type K, 20', Vertical, 4/019 w/36" Pigtail,	261 lb. (118.39 kg)
	4 bags TerraFill [®] , Poly Test Well w/Cover	
TG-40S-4/019-36-8F-P	TerraDyne [®] , Copper, 2" Type K, 40', Vertical, 4/019 w/36" Pigtail, 8 bags TerraFill [®] , Poly Test Well w/Cover	519 lb. (235.41 kg)



NOTE

- All Shafts are made of type "K" Copper 2" I.D. Tube.
- Custom conductor sizes and configurations are available upon request.
- All TerraDyne[®] models are available in a modular construction for easy export shipping.

Part Number	Description	Approximate Weight			
TG-10L-H24-4/019-24-3F-P	TerraDyne [®] , Copper, 2" Type K, 10', Horizontal/24",	188 lb. (85.28 kg)			
	4/019 w/24" Pigtail, 3 bags TerraFill [®] , Poly Test Well w/Cover				
TG-20L-H24-4/019-24-6F-P	TerraDyne [®] , Copper, 2" Type K, 20', Horizontal/24",	367 lb. (166.47 kg)			
	4/019 w/24" Pigtail, 6 bags TerraFill®, Poly Test Well w/Cover				
TG-10L-H36-4/019-36-3F-P	TerraDyne [®] , Copper, 2" Type K, 10', Horizontal/36",	191 lb. (86.64 kg)			
	4/019 w/36" Pigtail, 3 bags TerraFill®, Poly Test Well w/Cover				
TG-20L-H36-4/019-36-6F-P	TerraDyne [®] , Copper, 2" Type K, 20', Horizontal/36",	369 lb. (167.38 kg)			
	4/019 w/36" Pigtail, 6 bags TerraFill [®] , Poly Test Well w/Cover				





• All TerraDyne[®] models are available in a modular construction for easy export shipping.

TerraDyne® Deep Series Models



The TerraDyne[®] Deep Series Electrolytic Grounding System is a cost effective alternative to water well grounds and other expensive grounding systems used where real estate is limited. TerraFill[®] "Deep Series" (TF-50DS) is used to backfill around the TerraDyne[®] Deep Series electrodes during installation. TF-50DS is a natural volcanic clay that has been engineered to maintain electrical and ionic conductivity, which enhances the performance of the grounding system. 14 gal (53 L) of water is mixed with each 50 lb. (22.7 kg) bag and then pumped or poured around the electrode during installation.

TerraDyne[®] Deep Series Benefits:

- Designed Specifically for Deep Grounding Applications
- Enhanced and Stable Grounding Performance

NOTE

• All TerraDyne[®] models are available in a modular construction for easy transportation.

TerraFill®

Ground Enhancing Backfill

Low Resistivity Grounding Backfill

TerraFill[®] (Low Resistivity Grounding Backfill) provides a simple method of substantially lowering the earth resistance of grounding systems. When used with copper grounding equipment, contact resistance to earth is lowered by up to 63%. TerraFill[®] produces lower steady state and stable grounding impedance, resulting in a reliable, low resistance, electrical connection between the arounding system and the earth.



Features & Benefits

- Easily applied
- Produces lower stable grounding impedance, and lower surge impedance resulting in faster transient dissipation
- Excellent shelf life with long-term performance
- Manufactured to be compatible with copper grounding systems and standard field application methods
- Can be used in connection with grounding grids to minimize step and touch potentials
- Produces acceptable grounding impedance in highresistivity soils, within a reasonably sized area
- Versatile Applying TerraFill[®] to lower the ground resistance of grounding equipment allows for a variety of earthing designs which might otherwise be impractical
- Self-compacting comes in easily transportable 50 lb. (22.68 kg) bags, easily installed by one person
- Complies to MOTOROLA R56 Standard

Permanent

- Will not dissolve or decay with time
- Requires no maintenance
- Maintains constant resistance for the life of the system

Environmentally Friendly

- Does not affect soil or ground water
- Meets all EPA requirements for landfill
- Material Safety Data Sheet (MSDS) available on request
- Restriction of Hazardous Substances (RoHS) compliant
- Motorola R56 compliant

Use TerraFill[®] Backfill with TerraDyne[®] Electrolytic Grounding Systems for 30 years of ultra-stable, maintenance free grounding.

TerraFill®

Part Number	Description	Weight
TF-50	TerraFill [®] Grounding Backfill, 50 LB. Bag	50 lb. (22.68 kg)

TerraFill® Horizontal and Vertical Installations

Horizontal Installation (Trench)

Estimated length of ground connector covered with each bag of TerraFill®				
Tropob Width	TerraFill® Thickness			
mench width	1" (2.5cm)	2" (5.1cm)	3" (7.6cm)	4" (10. 2cm)
4" (10.2cm)	28' (8.5m)	14' (4.2m)	9' (2.7m)	7' (2.1m)
6" (15.2cm)	18' (5.4m)	9' (2.7m)	6' (1.8m)	4' (1.2m)
8" (20.3cm)	14' (4.2m)	7' (2.1m)	4' (1.2m)	3' (0.9m)
10" (25.4cm)	11' (3.3m)	5' (1.5m)	3' (0.9m)	2' (0.6m)
12" (30.5cm)	9' (2.7m)	4' (1.2m)	3' (0.9m)	2' (0.6m)
Refer to installation instructions and local electrical codes				
for proper trench size in your area.				

Try our online tool to see how much TerraFill your project requires: <u>alltecglobal.com/terrafill-calculator/</u>

Vertical Installation (Hole)

Estimated bags of TerraFill [®] backfill around ground rods 1/2" to 3/4"						
			Depth	of Hole		
Diamatan	6'	8'	10'	12'	17'	20'
Diameter	(1.8m)	(2.4m)	(3.0m)	(3.6m)	(5.2m)	(6.1m)
3" (7.5cm)	1	1	1	2	2	2
4" (10.0cm)	1	2	2	2	3	3
5" (12.5cm)	2	2	3	4	5	5
6" (15.0cm)	2	3	4	4	7	8
7" (17.5cm)	3	4	5	6	9	10
8" (20.0cm)	4	6	7	8	11	13
9" (22.5cm)	5	7	8	10	14	16
10" (25.0cm)	6	8	9	12	17	20
Refer to installation instructions and local electrical codes						
for proper hole size in your area.						

Enhanced Composite Backfill

ALLTEC's TerraFill[®] XT is a superior conductive material that improves grounding effectiveness, especially in abnormal soil conditions, such as acidic or extremely wet environments. When mixed with 2 1/2 gallons (9.5 liter) of water, one 50 lb. (22.68 kg) bag of TerraFill[®] XT yields approximately 1,040 cubic inches of cement type backfill material. TerraFill[®] XT mixed as above yields a 7 1/4" slump when tested per ASTM C143.

Features

- Effective: results in a typical resistivity of less than 160 Ohm-cm
- Dependable: maintains stable resistance for the life of the ground system
- Performance: does not dissolve, decompose or leak away
- Flexible: can be installed using Trench (Horizontal) or Ground Rod (Vertical) Backfill methods
- Secure: excellent solution for prevention of copper theft
- Simple: easily installed in a slurry form
- Environmentally Friendly: meets EPA requirements for landfill
- · Functional: performs in all soil conditions, even during dry periods
- Handy: provided in convenient 50 lb. (22.68 kg) Bags
- Useful: aids in small footprint grounding system implementations and other special applications

TerraFill® XT

Part Number	Description	Weight
TF-50XT	TerraFill [®] Grounding Backfill, 50 LB. Bag "XT"	50 lb. (22.68 kg)

"Deep Series" Grounding Backfill

TerraFill[®] "Deep Series" (TF-50DS) is used to backfill around the TerraDyne[®] Deep Series electrodes during installation. TF-50DS is a natural volcanic clay that has been engineered to maintain electrical and ionic conductivity, which enhances the performance of the grounding system. 14 gal (53 L) of water is mixed with each 50 lb. (22.7 kg) bag and then pumped or poured around the electrode during installation.

TerraFill[®] DS

Part Number	Description	Weight
TF-50DS	TerraFill [®] Grounding Backfill, 50 LB. Bag "Deep Series"	50 lb. (22.68 kg)

Low Dust TerraFill

TerraFill[®] LD is a superior conductive material similar to the traditional TF-50, but the flake is larger, reducing the amount of dust produced upon application.

Part Number	Description	Weight
TF-25LD	TerraFill® Grounding Backfill, 25 LB. Bag "Low Dust"	25 lb. (11.34 kg)

Inspection/Test Wells

Poly Plastic Test Well

Part Number	Description	Weight
WELL-P	Test Well, Poly-Plastic, with Cover	4.5 lb. (2.0 kg)

Static Vertical Load Rating

Body with HDPE Cover = 350 PSI

NOTE

• For use in non-vehicular traffic installations ONLY.

PROPERTIES OF UNFOAMED RESIN	ASTM TEST METHOD	HDPE
Tensile Strength	D-638	3,100 - 5,500 PSI
Flexural Modulus	D-790	160,000 - 210,000 PSI
Notched Izod Impact Strength	D-256	5-15 ft. lb./in.
Deflection Temperature	D-648	165° to 180°F (74°C to 82 °C)
Density	D-792	Minimum .955
Chemical Resistance		Excellent
Water Absorption		Nil



Fibrelyte® Test Well

Fibrelyte is a proven polyester pre-mix with calcium carbonate and polyester resins interlaced with fiberglass and ultra violet inhibitors. Fibrelyte is a durable, state and utility approved, noncombustible material.

Part Number	Description	Weight
WELL-FL	Test Well, Fibrelyte, with Fibrelyte-Cover	9 lb. (4.1 kg)

- Super lightweight means easier installation and servicing.
- Stronger than precast concrete. Exceeds WUC 3.6 recommendations for 10,000 lb. (4.5 t) wheel loading.
- Durable and inert: resistant to heat, cold, and chemicals.
- Won't crack or break during handling, which eliminates loss due to breakage.

Specifications

- Flexural Strength: 6,000 PSI
- Tensile Strength: 6,000 PSI
- Compressive Strength: 20,000 PSI



Concrete Test Well with Cast Iron Cover

Precast concrete body that is reinforced with non-settling shoulders to maintain grade and facilitate back filling with a cast iron receptacle for cover. Concrete Compressive Strength = 4500 PSI.

Part Number	Description	Weight
WELL-C	Test Well, Concrete, with Cast Iron-Cover	66 lb. (22.9 kg)



PVC Inspection Wells with Galvanized Steel Cover

Schedule 40 PVC sleeve with galvanized steel cover. Used for permanent ground inspection locations.

Part Number	Description	Weight
WELL-PVC-10-12	Well, Inspection, PVC Schedule 40,	29.2 lb. (13.24 kg)
	10" Dia. x 12" w/Galvanized Steel Cover	
WELL-PVC-10-18	Well, Inspection, PVC Schedule 40,	33.4 lb. (15.15 kg)
	10" Dia. x 18" w/ Galvanized Steel Cover	
WELL-PVC-10-24	Well, Inspection, PVC Schedule 40,	37.2 lb. (16.87 kg)
	10" Dia. x 24" w/ Galvanized Steel Cover	
WELL-PVC-10-36	Well, Inspection, PVC Schedule 40,	44.8 lb. (20.32 kg)
	10" Dia. x 36" w/ Galvanized Steel Cover	
WELL-PVC-12-12	Well, Inspection, PVC Schedule 40,	38.83 lb. (17.61 kg)
	12" Dia. x 12" w/ Galvanized Steel Cover	
WELL-PVC-12-18	Well, Inspection, PVC Schedule 40,	42.2 lb. (19.14 kg)
	12" Dia. x 18" w/ Galvanized Steel Cover	
WELL-PVC-12-24	Well, Inspection, PVC Schedule 40,	47.5 lb. (21.55 kg)
	12" Dia. x 24" w/ Galvanized Steel Cover	
WELL-PVC-12-36	Well, Inspection, PVC Schedule 40,	55 lb. (24.95 kg)
	12" Dia. x 36" w/ Galvanized Steel Cover	





Traditional Grounding / Bonding Products

Ground Rods & Accessories

Copper Clad Steel Ground Rods - 250 micron Cu

Made with Hot Rod (HR) steel core and a copper clad exterior to provide increased conductivity and corrosion resistance. Standard and sectional (threaded)

Part Number	Description	Weight
5000	Ground Rod, Copper Clad Steel, 5/8" x 8 Foot	7.00 lb. (3.16 kg)
5001	Ground Rod, Copper Clad Steel, 5/8" x 10 Foot	9.50 lb. (4.31 kg)
5021	Ground Rod, Copper Clad Steel, 3/4" x 10 Foot	12.00 lb. (5.44 kg)
	numbers for three ded entire	· · · · · · · · · · · · · · · · · · ·

Add 'S' to part numbers for threaded option.

Ground Rod Coupling - Threaded

Used for connecting sectional ground rods.

Part Number	Description	Weight
5231	Coupling, Copper, 5/8, Threaded, for Ground Rod	4.0 oz. (113.4 g)
5241	Coupling, Copper, 3/4, Threaded, for Ground Rod	5.4 oz. (153.1 g)

Ground Rod Coupling - Threadless

Part Number	Description	Weight
5232	Coupling, Copper, 5/8, Compression, for Ground Rod	4.0 oz. (113.4 g)
5242	Coupling, Copper, 3/4, Compression, for Ground Rod	5.4 oz. (153.1 g)

Ground Rod Driving Sleeves

Ground rod driving sleeves are placed over the top of a ground rod while driving it into the ground.

This prevents the top from mushrooming or flaring out. Ground rod driving sleeves come in sizes to fit all standard unthreaded ground rods.

Part Number	Description	Weight
5252	Tool, Sleeve, 5/8, for Ground Rod Sections	1.50 lb. (0.68 kg)
5253	Tool, Sleeve, 3/4, for Ground Rod Sections	2.00 lb. (0.91 kg)

Ground Rod Driving Studs

Made of high carbon steel, used for driving threaded sectional copper clad ground rods.

Part Number	Description	Weight
5271	Tool, Driving Stud, 5/8, for Ground Rod Sections	3.0 oz. (85.0 g)
5281	Tool, Driving Stud, 3/4, for Ground Rod Sections	5.0 oz. (141.7 g)

Ground Rod Cable Clamps

Uses two 5/16" bolts for optimal connection.

Part Number	Description	Weight
5296	Clamp, Copper, 5/8, Ground Rod	4.7 oz. (133.2 g)
5297	Clamp, Copper, 3/4, Ground Rod	7.1 oz. (2013 g)

Aircraft Type Ground Receptacle

Part Number	Description	Weight
5201	Receptacle, Bronze, Grounding, Aircraft Type	2.00 lb. (0.90 kg)

NOTE

• Please specify ground rod size when ordering.

Aircraft Type Ground Receptacle with Spring

Part Number	Description	Weight
5211	Receptacle, Bronze, Grounding, Aircraft Type, w/Spring	2.00 lb. (0.90 kg)
NOTE		

• Please specify ground rod size when ordering.







Copper Ground Plate Assemblies To order, simply follow the steps below to specify the type and size of ground plate. Please contact your

representative for custom sizes, prices and questions.

Example: GP-12-1/8-WM-2T-24-1F

12" X 12" .125" (1/8") Solid Copper Ground Plate with 24" of 2T conductor exothermically welded to the middle of the plate, and 1 bag of TerraFill®.



GP	-	12	-	1/8	-	WM	-	2T	-	24	-	1F
(1)	-	(2)	-	(3)	-	(4)	-	(5)	-	(6)	-	(7)

(1) Type of Component	GP = Ground Plate				
(2) Size (XY)	12 = 12" X 12", 18 = 18" X 18", 24 = 24" X 24", 36 = 36" X 36", etc				
(3) Thickness	20 = 20 gauge, 1/8 = .125", or 1/4 = .250"				
(4) Attachment & Location	Mechanical Clamp Connection MC = Mechanical Clamp at the Corner MM = Mechanical Clamp at the Middle ME = Mechanical Clamp at the Edge (Hardware will be supplied with Mechanical Clamp)		TerraWeld® Exothermic Weld Connection WC = Welded Exothermic Connection at the Corner WM = Welded Exothermic Connection at the Middle WE = Welded Exothermic Connection at the Edge		
	(Example of locations: N	lechanical Clamp Connectio	n Shown)		
	C = Corner M = Middle E = Edge				
(5) Conductor Size	2T = NO.2 AWG Solid T 4/0-19 = 4/0 AWG 19 st For additional conductor	inned, 2/0-19 = 2/0 AWG 19 trand, 4/0-19T = 4/0 AWG 19 r sizes, please contact your	strand,) strand Tinned, etc representative.		
(6) Conductor Length (Inch)	24 = 24", 36 = 36", 48 = 48", 72 = 72", etc (Conductor length equals two times the plate width. Custom length upon request.)				
(7) TerraFill [®] (Qty.)	1F = 1 bag, 2F = 2 bags For more information or	s, 3F = 3 bags, etc n TerraFill®, please see page 8	38.		



.125" (1/8") Copper Ground Plates

Part Number	Description	Weight
5150	Ground Plate, Copper, 12"x12", 1/8"	5.80 lb. (2.63 kg)
5155	Ground Plate, Copper, 18"x18", 1/8"	13.00 lb. (5.89 kg)
5165	Ground Plate, Copper, 36"x36", 1/8"	52.20 lb. (23.67 kg)

.250" (1/4") Copper Ground Plates

Part Number	Description	Weight
5151	Ground Plate, Copper, 12"x12", 1/4"	11.60 lb. (5.26 kg)
5156	Ground Plate, Copper, 18"x18", 1/4"	26.00 lb. (11.79 kg)
5166	Ground Plate, Copper, 36"x36", 1/4"	104.40 lb. (47.35 kg)

Concrete Bonding Plates

High Quality Cast alloy bonding plates provide a convenient method of providing predetermined ground connection points in buildings structure. These plates can be installed in concrete structures (i.e. walls, floors etc.). Machinery and other equipment can be easily attached to these plates after concrete work is completed. Bonding plates are available in 2 hole and 4 hole configurations. Both types can be supplied with 4/0 or 500 kc mil stud ready for connection to wire, rebar or ground rods. All holes are threaded 3/8"-16, 1/2" deep.



Part Number	Description	Weight
5212	Plate, Bronze, 2 Hole, for Concrete	14 oz. (396 g)
5213	Plate, Bronze, 4 Hole, for Concrete, Small	16 oz. (453 g)
5214	Plate, Bronze, 4 Hole, for Concrete, Large	18 oz. (510 g)



4 Holes



Grounding Conductors

Prices for grounding conductors change often. Please call for current prices prior to ordering.

Strand Copper Conductors

7 Strands Concentric





Part Number	Size (AWG)	Strands	CM Area	Standard Reels	Lb./Mft.
2-7	No. 2 AWG	7	66,360	250'	205
1/0-19	1/0 AWG	19	105,600	250'	326
2/0-19	2/0 AWG	19	133,100	250'	411
4/0-19	4/0 AWG	19	211,600	200'	653
250 MCM	250 MCM	37	250,000	-	772

NOTE

- Tinned (add suffix "T") and Green Jacket (add suffix "G") are available upon request.
- Length above or below standard reel size requires a cut charge.

Solid Copper Conductors



Part Number Size (AWG)		Diameter	CM Area	Standard Reels	Lb./Mft.	
2	No. 2 AWG	0.257	66,360	250'	201	
4	No. 4 AWG	0.204	41,470	500'	126	
6	No. 6 AWG	0.162	26,240	500'	80	

NOTE:

- Tinned (add suffix "T") and Green Jacket (add suffix "G") are available upon request.
- Length above or below standard reel size requires a cut charge.

Bonding Strap Copper Conductors



Part Nmuber Width (In.)		Thickness (in.)	Actual Gauge	Strand Coil	Weight/Roll (lb.)
CS132	1"	.032"	20	100'	12.4 (5.6 kg)
CS164	1"	.064"	14	100'	24.8 (11.2 kg)
CS1125	1"	.125"	8	100'	48.3 (21.9 kg)
CS1516	1.5"	.016"	26	100'	9.25 (4.89 kg)
CS1532	1.5"	.032"	20	100'	18.5 (8.18 kg)
CS216	2"	.016"	26	100'	12.4 (5.6 kg)
CS232	2"	.032"	20	100'	24.8 (11.2 kg)
CS264	2"	.064"	14	100'	49.6 (22.5 kg)
CS416	4"	.016"	26	100'	24.8 (11.2 kg)
CS432	4"	.032"	20	100'	49.6 (22.5 kg)
CS616	6"	.016"	26	100'	37.1 (16.8 kg)

NOTE

• All Copper Strap Conductor is sold in 100' rolls. Other custom sizes available by special order.

Grounding Accessories

Fence Fabric Ground Clamp

Whether it is connected to an object that is parallel, perpendicular or any degree in between, the conductor maintains a direct path to the ground without interruption. Exclusive in design, the clamp can form durable connections at almost any angle. Common uses include connection to both barbed wire and fence fabric. Can be used with almost all metallic surfaces, including galvanized metal. Contact ALLTEC for information on other sizes and/or materials.

Part Number	Description	Weight
5180	Clamp, Stainless Steel, Fence Fabric	2.5 oz. (70.9 g)

Cold Galvanizing Compound

Part Number	Description	Weight
GALV-16	Cold Galvanic Compound, 16 oz., Spray	16.0 oz. (453.5 g)

Oxide Inhibitor

For use with all copper conductors

Part Number	Description	Weight
NO-OX-ID	Oxide Inhibitor, 12 oz., Tube	12.0 oz. (226.8 g)







Bonding Straps & Bypass Conductors

Bonding Straps

Allows for bonding to hinged or sliding metal doors. The copper bonding strap has a 3/4" X 10" body made of 480 strand 30 gauge wire. Lugs on each end allows for 3/8" diameter bolt fasteners. Custom lengths upon request.

Part Number	Description	Weight
5175	Strap, Copper, 10"x 3/4", 3/8" Hole in Lugs	3.0 oz. (85.0 g)
5176	Strap, Copper, 10"x 3/4", 2 3/8" Holes in Lugs	3.0 oz. (85.0 g)





Primary Bypass Conductors

Lightning Protection Bonding for External Floating Roof, Internal Floating Roof & Aluminum Dome Tanks

Part Number	Description	Weight
BPS-C/SS-P-02	Primary Bypass Conductor, Copper & Stainless Steel, 2' (0.61 m)	1.1 lb. (0.50 kg)
BPS-C/SS-P-03	Primary Bypass Conductor, Copper & Stainless Steel, 3' (0.91 m)	1.41 lb. (0.64 kg)
BPS-C/SS-P-04	Primary Bypass Conductor, Copper & Stainless Steel, 4' (1.22 m)	1.73 lb. (0.78 kg)
BPS-C/SS-P-20	Primary Bypass Conductor, Copper & Stainless Steel, 20' (6.10 m)	6.8 lb. (3.08 kg)
BPS-C/SS-P-40	Primary Bypass Conductor, Copper & Stainless Steel, 40' (12.19 m)	13.13 lb. (5.96 kg)
BPS-C/SS-P-50	Primary Bypass Conductor, Copper & Stainless Steel, 50' (15.24 m)	16.29 lb. (7.39 kg)
BPS-C/SS-P-60	Primary Bypass Conductor, Copper & Stainless Steel, 60' (18.29 m)	19.46 lb. (8.83 kg)
BPS-C/SS-P-70	Primary Bypass Conductor, Copper & Stainless Steel, 70' (21.34 m)	22.63 lb. (10.26 kg)

Secondary Bypass Conductors

Lightning Protection Bonding for External Floating Roof, Internal Floating Roof & Aluminum Dome Tanks

Part Number	Description	Weight
BPS-C/SS-S-02	Secondary Bypass Conductor, Copper & Stainless Steel, 2' (0.61 m)	1.1 lb. (0.50 kg)
BPS-C/SS-S-03	Secondary Bypass Conductor, Copper & Stainless Steel, 3' (0.91 m)	1.41 lb. (0.64 kg)
BPS-C/SS-S-04	Secondary Bypass Conductor, Copper & Stainless Steel, 4' (1.22 m)	1.73 lb. (0.78 kg)
BPS-C/SS-S-20	Secondary Bypass Conductor, Copper & Stainless Steel, 20' (6.10 m)	6.8 lb. (3.08 kg)
BPS-C/SS-S-40	Secondary Bypass Conductor, Copper & Stainless Steel, 40' (12.19 m)	13.13 lb. (5.96 kg)
BPS-C/SS-S-50	Secondary Bypass Conductor, Copper & Stainless Steel, 50' (15.24 m)	16.29 lb. (7.39 kg)
BPS-C/SS-S-60	Secondary Bypass Conductor, Copper & Stainless Steel, 60' (18.29 m)	19.46 lb. (8.83 kg)
BPS-C/SS-S-70	Secondary Bypass Conductor, Copper & Stainless Steel, 70' (21.34 m)	22.63 lb. (10.26 kg)



Terminal Lugs

For use in conjunction with TerraWeld® P Series welding molds.

Part Number	Description
TLUG-CT-11/8-1-1/4-F	Lug, Tinned Copper, 1 1/8" to 1 1/4"

NOTE

For more information on the P Series welding, refer to the TerraWeld[®] Exothermic Welding Equipment Catalog. **Installation Examples:**



Bonding Jumpers

Flexible Bonding Jumpers

Used where movement and vibration are present, flexible jumpers are an important component of any bonding application. These prefabricated jumpers are made from high quality welding cable to provide both flexibility and cross sectional protection. The ends of the cables are prepared and sleeved to fit standard TerraWeld® molds. The connections are made with TerraWeld® Exothermic connections to the fence posts. Available in standard 12" to 24" lengths.

Part Number	Description	Weight
5300-12	Jumper, Copper, 12", #2	4.4 oz. (124.7 g)
5300-18	Jumper, Copper, 18", #2	6.6 oz. (187.1 g)
5300-24	Jumper, Copper, 24", #2	8.8 oz. (249.4 g)
5320-12	Jumper, Copper, 12", 2/0	8.2 oz. (232.5 g)
5320-18	Jumper, Copper, 18", 2/0	12.3 oz. (348.7 g)
5320-24	Jumper, Copper, 24", 2/0	16.4 oz. (464.9 g)
5340-12	Jumper, Copper, 12", 4/0	13.0 oz. (368.5 g)
5340-18	Jumper, Copper, 18", 4/0	19.5 oz. (555.8 g)
5340-24	Jumper, Copper, 24", 4/0	26.0 oz. (737.1 g)

Installation Examples:



NOTE

Flexible Bonding Jumpers - With Lugs Installed

NOTE • For further information, refer to the TerraWeld® Exothermic Welding Equipment Catalog. Flexible Bonding Jumpers - With Lugs Installed									
Part Number	Description	Weight							
5300-12-L	Jumper, Copper, 12", #2, w/ 2 Hole Bonding Lugs	5.8 oz. (164.4 g)							
5300-18-L	Jumper, Copper, 18", #2, w/ 2 Hole Bonding Lugs	8.0 oz. (226.8 g)							
5300-24-L	Jumper, Copper, 24", #2, w/ 2 Hole Bonding Lugs	10.2 oz. (289.2 g)							
5320-12-L	Jumper, Copper, 12", 2/0, w/ 2 Hole Bonding Lugs	12.2 oz. (345.9 g)							
5320-18-L	Jumper, Copper, 18", 2/0, w/ 2 Hole Bonding Lugs	1.02 lb. (0.46 kg)							
5320-24-L	Jumper, Copper, 24", 2/0, w/ 2 Hole Bonding Lugs	1.27 lb. (0.57 kg)							
5340-12-L	Jumper, Copper, 12", 4/0, w/ 2 Hole Bonding Lugs	1.31 lb. (0.59 kg)							
5340-18-L	Jumper, Copper, 18", 4/0, w/ 2 Hole Bonding Lugs	1.41 lb. (0.64 kg)							
5340-24-L	Jumper, Copper, 24", 4/0, w/ 2 Hole Bonding Lugs	2.12 lb. (0.96 kg)							

NOTE

Please contact your representative for additional sizes. •



Section 9

Grounding Bars & Accessories

TerraBar Grounding Bars

ALLTEC is the originating Engineering firm supporting the telecom majors for proper single-point grounding/ earthing busbar designs.

Models

Ground bar

103

For custom ground bars, see the part numbering system table (1) - (6) on page 103. Anti-theft steel ground bar shown. Custom "Property of" engraving available.

Ground bar with wall mounting brackets and insulators

Anti-theft steel ground bar shown. Custom "Property of" engraving available.

Ground bar with wall mounting brackets, insulators, and a ground conductor For custom ground bars, see the part numbering system table (1) - (8) on page 103. Anti-theft steel ground bar shown. Custom "Property of" engraving available.





TerraBar



Part Numbering System

To order, simply follow the steps below to specify the type and size of the ground bar. The example below shows how to order a ground bar with wall mounting brackets, insulators, and an exothermically welded ground conductor.

The ground bar is 1/4" thick, 4" wide, and 24" in length. It has a "02" hole pattern and a 40" of 4/0 AWG 19T strand tinned copper ground conductor tail.



Example: TB-CT-4-24-02-S-4/019T-40

ΤВ	-	СТ	-	4	-	24	-	02	-	S	-	4/019T	-	40
(1)	-	(2)	-	(3)	-	(4)	-	(5)	-	(6)	-	(7)	-	(8)

(1) Туре	TB = TerraBar Plain ground bar
(2) Material & Finish	C = Copper, CT = Copper Tinned, GS = Galvanized Steel
(3) Width	1 = 1", 2 = 2", 4 = 4", 6 = 6"
(4) Length	6 = 6", 9 = 9", 12 = 12", 18 = 18", 24 = 24"
(5) Hole Pattern	See the following pages for available standard hole patterns.
(6) Insulation & Bracket	Insulator: S = Small, M = Medium, L = Large, X = Extra Large Bracket : P = Small Round (Pipe), R = Large Round, C = Clamp
(7) Conductor Size	2T = No.2 AWG Solid Tinned, 2/019 = 2/0 AWG 19 strand, 4/019 = 4/0 AWG strand, 4/019T = 4/0 AWG 19 strand Tinned, etc For additional conductor sizes, please contact your representative.
(8) Conductor Length & Location	24 = 24", 36 = 36", 40 = 40", 48 = 48", 72 = 72", etc (Custom length upon request.)
(9) Option	Acrylic cover (See page 112)

NOTE

Tin plating available. Other special plating available upon request. Plating, special hole sizes, patterns and ground leads are all available by special request.

Option - Acrylic Cover

A full line of acrylic covers are available. Acrylic cover over the Ground Bar (TerraBar) with Bus Bar Brackets and Insulators is shown.

NOTE

See page 112 for details.



1" and 2" Bars



Standard 4" Bars



Standard 4" Bars



4" X 12"

Pattern 15
Specialty Bars



Specialty Bars



Pattern 20

Specialty Bars

6" X 48"

8" X 48"

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Bus Bar Accessories

Small Round Member Adaptor

Used to attach bus bars to pipe up to 3" diameter.

Part Number	Description	Weight
6601	Adaptor, Stainless Steel, 2" to 3" Small Round Member	4.0 oz. (113.4 g)

Large Round Member Adaptor

Used to attach bus bars to pipe 3" to 6" diameter.

Part Number	Description	Weight
6602	Adaptor, Stainless Steel, 3" to 4" Small Round Member	7.0 oz. (198.4 g)

Stainless Steel Tower Bracket

Bracket used to attach bus bars to angle iron on towers.

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

Fiberglass Composite Insulators

Part Number	Description	Weight
7901	Insulator, Fiberglass, 1/4, Small - Suggested voltage rating - 600V 1.25" high x 1" diameter	1.2 oz. (34.0 g)
7906	Insulator, Fiberglass, 3/8, Medium - Suggested voltage rating - 600V 1.375" high x 1.75" diameter	3.6 oz. (102.1 g)
7911	Insulator, Fiberglass, 1/2, Large - Suggested voltage rating - 2700V 2.25" high x 2" diameter	5.5 oz. (155.5 g)
7916	Insulator, Fiberglass, 5/8, Extra Large - Suggested voltage rat- ing - 3400V 2.625" high x 2.5" diameter	10.2 oz. (289.2 g)

Stainless Steel Bus Bar Brackets

Part Number	Description	Weight
7920	Bracket, Stainless Steel, 1" X 4" Face, for Bus Bar	4.0 oz. (113.4 g)
7922	Bracket, Stainless Steel, 1" X 2" Face, for Bus Bar	5.0 oz. (141.7 g)

NOTE

• Other mounting hardware available on request.











Acrylic Covers

A full line of clear acrylic covers are available to fit any bus bar. The covers come with insulators and hardware to match with the pattern on the bus bar. Call with special requirements. Lettering is available up to 2".

Part Number	Description	Weight
COV-ACR-1/4-1-24	Cover, Acrylic, 1/4" X 4" X 24"	20 oz. (567 g)
COV-ACR-1/4-6-24	Cover, Acrylic, 1/4" X 6" X 24"	2.0 lb. (0.90 kg)

NOTE

• Other acrylic covers available on request. See below for numbering system.

Part Numbering System Example: COV-ACR-1/4-4-24-ENG MAIN GROUND BAR **COV-ACR** 1/4 -4 ENG 24 --(1) (2) -(3) -(4) (5) _ -**COV-ACR** = TerraBar Acrylic Cover (1) Type (2) Thickness **1/4** = 1/4" **1** = 1", **2** = 2", **4** = 4", **6** = 6" (3) Width **4** = 4", **6** = 6", **9** = 9", **12** = 12", **18** = 18", **24** = 24" (4) Length Engraving Letters (include Text & Size in order) (5) Option

NOTE

• Width and length are per TerraBar specification.



Exothermic Welding

Exothermic Welding System

TerraWeld®

The TerraWeld[®] Exothermic Welding System provides the superior solution in permanent molecular bonding. The process of exothermic welding, in which no external source of heat or power is required, is the universally preferred method of making electrical connections of copper-to-copper or copper-to-steel. Lightning protection and grounding systems require connections that maintain current carrying capacity exceeding that of the conductors used in the system. TerraWeld[®] connections provide higher fusing capacity than the conductors to which they are bonded. System resistance, impedance, and ampacity relate directly to functionality, safety, and regulatory compliance. TerraWeld[®] meets these challenges and delivers optimal longevity, especially in below-grade applications.

TerraWeld[®] connections provide performance superior to all existing surface-to-surface mechanical retention connectors. Pressure type connections are susceptible to variation, aging, corrosion, and failure - not TerraWeld[®]. One click of the starter forges a visually inspectable, uniformly conductive, corrosion resistant, continuous solid metal bonding at the molecular level resulting in the only connection which will not loosen or increase in resistance over the lifetime of the installation.

ALLTEC's hermetically sealed metallized pouch design is unique in the industry. Containing pre-measured granular metallic particles with a separate sealed tube of starting powder, the materials are not in contact and may be safely handled, stored, and transported. Users may confidently and comfortably drop a few packages in their pocket before heading to a site, and rely on its capability even after prolonged exposure to the elements. TerraWeld[®] works when others won't.

The TerraWeld[®] Exothermic Welding System uses a light-weight, clamp-on graphite mold to safely position and contain any weld required. The exothermic reaction creates an intense miniature furnace with temperatures exceeding 2,500°F, instantly producing molten metal which flows into the weld cavity, filling any available space. Moments later the mold may be removed in preparation for the next weld.



Requirements of Electrical Connections Poor connections (joints) between conductors are often the cause of electrical failures. An ideal connection should

possess the following qualities:

- 1. Maintains contact integrity and electrical continuity.
- 2. When conducting electrical current, connector temperature should remain lower than that of the conductor.
- 3. Able to withstand overload conditions without melting, burning or failing.
- 4. Long service life. Will not deteriorate, loosen or corrode when subjected to weather.

Of all the varieties of electrical connectors that are available today, only exothermic welded connectors can meet the above criteria. Throughout the world, exothermic welding has been shown to be the best choice where safety, reliability, current carrying capacity and longevity are critical.



Tech Tip - Minimizing Materials and Costs Grid Wire to Ground Rod Connections



Often in grounding grids it is common to see main grounding conductors sized at 250 mcm or larger. When wire sizes are at this level or larger, it may become difficult and expensive to make proper connections to ground rods (GET Mold Type). Since a single 3/4-inch or 5/8-inch ground rod would not be able to withstand several thousand amperes, a fault current must be distributed across an entire ground grid. Therefore an alternative to welding large gauge wires to ground rods would be to use an intermediary wire between the main grounding conductors and the ground rods. Typically 1/0 AWG wire can be used because this size wire has over 5 times the equivalent cross section of a 3/4-inch ground rod. This method not only simplifies the welding procedure, but also offers considerable savings of wire and weld metal.

Left Diagram:		Right Diagram:	
Part Number	Weld Metal	Part Number	Weld Metal
GET-18-250A	#200	GEE-18-250A	#90
		WT-250A-1/0A	#90

Tech Tip - Equivalent Connections to Ground Rods

Several options for achieving a connection as specified in the engineering drawings are available. All the examples below show electrically equivalent connections as those specified in the engineering drawing represented by the cross and circle symbol.



Note: (1) is the most common method



Weld Metal, Molds & Accessories

TerraWeld® Weld Metal

All TerraWeld[®] weld metals are meticulously packaged in individual, stateof-the-art moisture proof foil packs. The starting material is in a separate container within each foil pack. This eliminates weld metal loss due to spoilage and no-start situations. The water proof foil packs increase shelf life and make for easier transportation. Each box of TerraWeld[®] contains either 10 or 20 foil packs depending on the size of the Weld metal. Most connections involving copper wires, bars, pipes and/or grounding rods will use Type T Weld Metal.



Features & Benefits

Use:	Permanent molecular bonding weld for electrical connections, primarily for below-grade and secondarily for non- mechanically stressed above-grade attachment
Application:	Copper, copper clad steel, steel and related metals in stranded and solid wire, bar, pipe and plate form, hori- zontal or vertical attachment
Conformance:	IEEE 837, R56 and related standards and recommended practices referenc- ing permanent electrical grounding, bonding and lightning protection connections
Weld Metal Packaging:	Individual sealed foil pack, approx. 5 3/8" x 4 3/4", moisture resistant, gram weight (size) stamped, notched for easy-tear opening
Starting Powder Packaging:	Individual vial, contained within foil weld metal pack
Outer Packaging:	Corrugated box, multiple foil packs, polybag with metal disks, 10 or 20 per
Storage:	Room ambient, protected, for maxi- mum shelf life averaging 2 years



Type T: Copper to Copper and Copper to Steel Connections

Weld Metal	Approx. Weld Metal Weight per Pack	Weld Metal Packs/Box	Weight/Box
T25	25 grams	20	1.6 lbs. (0.73 kg)
T32	32 grams	20	2.0 lbs. (0.91 kg)
T45	45 grams	20	2.6 lbs. (1.18 kg)
T65	65 grams	20	3.2 lbs. (1.45 kg)
T90	90 grams	10	2.5 lbs. (1.34 kg)
T115	115 grams	10	3.4 lbs. (1.54 kg)
T150	150 grams	10	4.1 lbs. (1.86 kg)
T200	200 grams	10	5.0 lbs. (2.27 kg)
T250	250 grams	10	5.9 lbs. (2.68 kg)

Other weld metal is available including:

Туре В	is formulated for rail bonding connections.
Type Cl	is used for connections with cast iron components.
Type CP	is formulated specifically for cathodic protec- tion applications.

NOTE

 Weld metal types can be distinguished from a colored dot next to the weld metal size on package:

Type T – no dot, Type B – yellow, Type CI – orange, and Type CP – green.

Weld Mold

Precision engineered for optimum results. Each weld mold is designed to give precise and reliable results. Only the finest materials are utilized so that these molds can withstand continuous heat-cooling cycles. All models are categorized into eleven different price codes according to their connection type. These molds have a minimum service life of approximately 65 connections. However, it is not uncommon to achieve 80-100 connections when proper care is taken during usage.

Mold Options

-S Split Crucible Option

WT and WX type mold may be ordered, as an option, with a split crucible. A split crucible allows the user to quickly and easily access the interior of the weld crucible and tap hole for cleaning and slag removal.

To specify the split crucible option, please add the suffix "S" to the end of the mold part number.

-G Wear Option

The mold will become chipped and worn through rough handling or through normal use. The optional wear plate will prolong the service life of a mold by protecting the mold openings with metal plates. Wear plates are available for the following mold types: WE, WT, GEE, GST and SVES. For other types, please call ALLTEC.

To order the wear plate option, please add the suffix "G" after the mold part number.

HD- Heavy Duty Connections

Heavy duty connections are recommended for installing connections onto aged conductors that have been buried or weathered.

To order the Heavy Duty Connection option, add Prefix "HD" to the beginning of the mold part number.

Option Examples				
Part Number:	WT- 2AS-2AS			
	WT- 2AS-2AS-S	Split Crucible Option		
	WT- 2AS-2AS-G	Wear Plate Option		
	HD-WT- 2AS-2AS	Heavy Duty Connection		

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Tools And Accessories

CL-2, CL-3, CL-4, CLR-1, CLR-3 Mold Handle Clamps

CL-2 Small Handle, for #2-1, #2-2, and #2-3 Price Code Molds. CL-3 Regular Handle, for #3, #5, and #7 Price Code Molds. CL-4 Large Handle, for #4, #6, and #8 Price Code Molds. CLR-1 Rail Bonding Handle Clamp, Single Mold. CLR-3 Rail Bonding Handle Clamp, Large Span.

CL-3CV, CL-3CH, CL-4CV, CL-4CH

Chain Handle Clamps Chain handle clamps are available for making connections to vertical standing or horizontal pipes and beams.

CL-3B, CL-4B

"Banana" Handle Clamps

Banana handles are designed specifically for welding operations in narrow trenches. The angled handles allow safe and convenient operation without the need for excavating the corner of the trench for clearance. A tremendous labor and time saver.

CL-2M, CL-3M, CL-4M

Magnetic Handle Clamps Standard handle clamps fitted with powerful, rare earth magnets to allow welding onto vertical flat steel surfaces.

CCLAMP3, CCLAMP4

C-Clamp Attachment

These attachments will fit CL-3 and CL-4 handles to enable them to be attached to the edge of a flat vertical surface (i.e. I-beams, steel doors etc.), allowing the operator to have both hands free during welding. The attachment affixes to the center post of a handle clamp with a cotter pin.

CBLC

Wire Clamp Relieves tension from wires being welded to prevent the wires from pulling out of the mold during welding.









S-2, S-3

Slag Removal Tools

These tools have been designed to assist in the removal of slag from the mold crucible and tap hole. Type S-2 cleaning tools are for use with #1 and #2 Price Code Molds. All other molds use type S-3 cleaning tool.

GNRDC

Ground Rod Splice Clamp

Holds two ground rods in the vertical position required when splicing together with GVE type molds. Ensures proper spacing of required gap between the upper and lower rod.

DX-3

Mold Metal Sealer, Putty

High heat resistant putty allows small leaks and gaps in the mold to be temporarily stopped. Comes in convenient 1 pound (0.45 kg) packs.

DX-4

Mold Metal Sealer, Ceramic Fiber Batting

High heat resistant ceramic fiber batting. Used where larger voids need to be filled to ensure proper and complete weld. Generally used with rebar welds. 1 DX-4 per weld is required.

SLV-WRAP

Wrap Shims

Thin, flexible copper shim strips. Can be wrapped around wires and cables to adapt them to fit a larger mold opening.

BLANKET

Flame Resistant Blanket

Heavy Alumina-Silica fiber-woven flame-resistant blankets. Can be used to protect surrounding areas from sparks and heat. 36" x 36" (91.4 cm x 91.4 cm)

IGNITOR

Flint Ignitor

Compact and Convenient: These are mechanical flint ignitors with long service cycles. They produce a large cascade of sparks for ease of igniting the starting material. Worn flints can be replaced.

IG-EX

Ignitor Extension

30" (76.2 cm) extension arm for flint ignitors. Allows operator to have additional reach.











CUTTER1

Ratcheting Cable Cutter

This compact cable cutter measures only 10" (25.4 cm) long and is able to cut copper or aluminum cable up to 750 mcm. Precision ratcheting mechanism and high carbon steel blades ensure long service life and clean cable cuts every time.

TORCHH

Trigger Start Torch Head

A very convenient flame torch for pre-heating of mold and conductors. This torch uses cartridge type gas canisters. The torch simply screws onto the gas cartridge and the flame can be adjusted via the thumb wheel on the torch head.

MCB-1

Mold Cleaning Brush

This heavy duty brush makes mold cleaning quick and easy. Hefty wooden handles stand up to repeated use. Stiff natural bristles ensure rapid mold cleaning without harming the soft graphite molds.

CCB-1

Card Cloth Brush

Short stiff wire bristles enable efficient cleaning of metal surfaces and wires in preparation for welding. Quality construction on wooden handles ensure long service life.

DISK-S, DISK-M, DISK-L

Metal Disks

Metal Disk designed to contain the exothermic reaction to the upper crucible of a mold until the reaction is complete and ready to weld. Weld metals #65 and smaller use Disk-S, #90 & #115 use Disk-M and #150 and larger use Disk-L. Comes in packs of 10.



Welding Tool Kit

A complete kit for exothermic welding operations. This metal tool kit contains everything required for the safe and efficient operation of exothermic welds. Each kit contains: gloves, safety goggles, torch head, igniter, pliers, gripping pliers, screw driver, hammer, cleaning tool, soft brush, wire brush, and a metal file.









Part Numbering System

AWG





Section 12

Connection Selection

Master Series Index

W Series - Wire To Wire Connections



• Items marked with an astarisk are by special order only. Please inquire for details.

Series - Mini Wire Connections



WES (pg. 131)



WTS (pg. 133)



WXS (pg. 134)

G Series - Ground Rod To Wire Connections



• Items marked with an astarisk are by special order only. Please inquire for details.

G Series - Ground Rod To Ground Rod Connection







S Series - Connections To Steel Sheets and Pipes



SHEA (pg. 146)



SVES (pg. 150)



SVTHA (pg. 154)



SHEB (pg. 147)



SVED (pg. 151)



SVTHB (pg. 155)



SHTA (pg. 148)





SVEU (pg. 152)



SVEH (pg. 156)



SHTB (pg. 149)



SVTV (pg. 153)

R Series - Connections To Rebars



RHEH (pg. 157)





RHXH (pg. 158)

RHT*

RVP*





RVCT (pg. 160)

* Items marked with an astarisk are by special order only. Please inquire for details.

P Series - Connections To Bus Bars And Terminal Lugs



P Series - Steel Plate To Terminal Lug

* Items marked with an astarisk are by special order only. Please inquire for details.

PSVD*

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PSVR*

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B Series - Bus Bar Connections









BE (pg. 164)



BX (pg. 166)



* Items marked with an astarisk are by special order only. Please inquire for details.

B Series - Steel To Strap Connections





* Items marked with an astarisk are by special order only. Please inquire for details.





E Series - Rail Bond Connections





ERW (pg. 168)

ERB (pg. 168)



ERT (pg. 169)

C Series - Cathodic Protection



* Items marked with an astarisk are by special order only. Please inquire for details.

Wire to Wire Connections

WE Mold

A	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
6	6	WE-6A-6A	3	CL-3	25
6 SOL	6 SOL	WE-6AS-6AS	3	CL-3	25
4	4	WE-4A-4A	3	CL-3	25
4 SOL	4 SOL	WE-4AS-4AS	3	CL-3	25
3	3	WE-3A-3A	3	CL-3	32
2	2	WE-2A-2A	3	CL-3	32
2 SOL	2 SOL	WE-2AS-2AS	3	CL-3	32
1	1	WE-1A-1A	3	CL-3	32
1 SOL	1 SOL	WE-1AS-1AS	3	CL-3	32
1/0	1/0	WE-1/0A-1/0A	3	CL-3	45
2/0	2/0	WE-2/0A-2/0A	3	CL-3	65
3/0	3/0	WE-3/0A-3/0A	3	CL-3	90
4/0	4/0	WE-4/0A-4/0A	3	CL-3	90
250	250	WE-250A-250A	3	CL-3	115
300	300	WE-300A-300A	3	CL-3	115
350	350	WE-350A-350A	3	CL-3	150
500	500	WE-500A-500A	3	CL-3	200
750	750	WE-750A-750A	4	CL-4	2 X 150
1000	1000	WE-1000A-1000A	4	CL-4	2 X 200

WES Mini Mold

А	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
6 SOL	6 SOL	WES-6AS-6AS	2-1	CL-2	25
4	4	WES-4A-4A	2-1	CL-2	25
4 SOL	4 SOL	WES-4AS-4AS	2-1	CL-2	25
3	3	WES-3A-3A	2-1	CL-2	32
2	2	WES-2A-2A	2-1	CL-2	32
2 SOL	2 SOL	WES-2AS-2AS	2-1	CL-2	32
1	1	WES-1A-1A	2-1	CL-2	32
1 SOL	1 SOL	WES-1AS-1AS	2-1	CL-2	32



Wire To Wire Connections

- If the number of connections to be made are small, WES mini mold type may be used in lieu of WE Type for smaller wire sizes. WES molds offer smaller size and weight advantages.
- Please contact your representative for additional sizes.
- For more information on required tools and accessories, see Page 120-122.

WT Mold

A	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
4	4	WT-4A-4A	3	CL-3	32
3	3	WT-3A-3A	3	CL-3	32
2 SOL	2 SOL	WT-2AS-2AS	3	CL-3	45
2	2	WT-2A-2A	3	CL-3	45
2	4	WT-2A-4A	3	CL-3	45
1	1	WT-1A-1A	3	CL-3	45
1	2	WT-1A-2A	3	CL-3	45
1	4	WT-1A-4A	3	CL-3	45
1/0	1/0	WT-1/0A-1/0A	3	CL-3	90
1/0	1	WT-1/0A-1A	3	CL-3	45
1/0	2	WT-1/0A-2A	3	CL-3	45
1/0	4	WT-1/0A-4A	3	CL-3	45
2/0	2/0	WT-2/0A-2/0A	3	CL-3	90
2/0	1/0	WT-2/0A-1/0A	3	CL-3	90
2/0	1	WT-2/0A-1A	3	CL-3	45
2/0	2	WT-2/0A-2A	3	CL-3	45
2/0	4	WT-2/0A-4A	3	CL-3	45
3/0	3/0	WT-3/0A-3/0A	3	CL-3	115
3/0	2/0	WT-3/0A-2/0A	3	CL-3	90
3/0	1/0	WT-3/0A-1/0A	3	CL-3	90
3/0	1	WT-3/0A-1A	3	CL-3	45
3/0	2	WT-3/0A-2A	3	CL-3	45
3/0	4	WT-3/0A-4A	3	CL-3	45
4/0	4/0	WT-4/0A-4/0A	3	CL-3	150
4/0	3/0	WT-4/0A-3/0A	3	CL-3	115
4/0	2/0	WT-4/0A-2/0A	3	CL-3	90
4/0	1/0	WT-4/0A-1/0A	3	CL-3	90
4/0	1	WT-4/0A-1A	3	CL-3	90
4/0	2	WT-4/0A-2A	3	CL-3	90
4/0	4	WT-4/0A-4A	3	CL-3	90
250	250	WT-250A-250A	3	CL-3	150
250	4/0	WT-250A-4/0A	3	CL-3	150
250	3/0	WT-250A-3/0A	3	CL-3	150
250	2/0	WT-250A-2/0A	3	CL-3	90
250	1/0	WT-250A-1/0A	3	CL-3	90
250	1	WT-250A-1A	3	CL-3	90
250	2	WT-250A-2A	3	CL-3	90
250	4	WT-250A-4A	3	CL-3	90



Wire To Wire Connections

- If the number of connections to be made are small, WTS Type may be used in lieu of WT Type for smaller wire sizes. WTS Type molds offer smaller size and weight advantages.
- Please contact your representative for additional sizes.
- For more information on required tools and accessories, see Page 120-122.

WTS Mini Mold

A	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
4	4	WTS-4A-4A	2-1	CL-2	32
3	3	WTS-3A-3A	2-1	CL-2	32
2 SOL	2 SOL	WTS-2AS-2AS	2-2	CL-2	45
2	2	WTS-2A-2A	2-2	CL-2	45
2	4	WTS-2A-4A	2-2	CL-2	45
1	1	WTS-1A-1A	2-2	CL-2	45
1	2	WTS-1A-2A	2-2	CL-2	45
1	4	WTS-1A-4A	2-2	CL-2	45
1/0	1/0	WTS-1/0A-1/0A	2-2	CL-2	90
1/0	1	WTS-1/0A-1A	2-2	CL-2	45
1/0	2	WTS-1/0A-2A	2-2	CL-2	45
1/0	4	WTS-1/0A-4A	2-2	CL-2	45



Wire To Wire Connections

- Please contact your representative for additional sizes.
- For more information on required tools and accessories, see Page 120-122.

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EXOTHERMIC WELDING EQUIPMENT CATALOG

WX Mold

A	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
4	4	WX-4A-4A	3	CL-3	45
3	3	WX-3A-3A	3	CL-3	45
2 SOL	2 SOL	WX-2AS-2AS	3	CL-3	65
2	2	WX-2A-2A	3	CL-3	65
2	4	WX-2A-4A	3	CL-3	65
1	1	WX-1A-1A	3	CL-3	65
1	2	WX-1A-2A	3	CL-3	65
1	4	WX-1A-4A	3	CL-3	65
1/0	1/0	WX-1/0A-1/0A	3	CL-3	90
1/0	1	WX-1/0A-1A	3	CL-3	90
1/0	2	WX-1/0A-2A	3	CL-3	90
1/0	4	WX-1/0A-4A	3	CL-3	90
2/0	2/0	WX-2/0A-2/0A	3	CL-3	115
2/0	1/0	WX-2/0A-1/0A	3	CL-3	115
2/0	1	WX-2/0A-1A	3	CL-3	115
2/0	2	WX-2/0A-2A	3	CL-3	115
3/0	3/0	WX-3/0A-3/0A	3	CL-3	150
3/0	2/0	WX-3/0A-2/0A	3	CL-3	150
3/0	1/0	WX-3/0A-1/0A	3	CL-3	115
3/0	1	WX-3/0A-1A	3	CL-3	115
3/0	2	WX-3/0A-2A	3	CL-3	115
4/0	4/0	WX-4/0A-4/0A	3	CL-3	200
4/0	3/0	WX-4/0A-3/0A	3	CL-3	200
4/0	2/0	WX-4/0A-2/0A	3	CL-3	150
4/0	1/0	WX-4/0A-1/0A	3	CL-3	150
4/0	1	WX-4/0A-1A	3	CL-3	115
4/0	2	WX-4/0A-2A	3	CL-3	115
250	250	WX-250A-250A	3	CL-3	200
250	4/0	WX-250A-4/0A	3	CL-3	200
250	3/0	WX-250A-3/0A	3	CL-3	200
250	2/0	WX-250A-2/0A	3	CL-3	150
250	1/0	WX-250A-1/0A	3	CL-3	150
250	1	WX-250A-1A	3	CL-3	115
250	2	WX-250A-2A	3	CL-3	115

A B

Wire To Wire Connections

NOTE

- If the number of connections to be made are small, WXS Type may be used in lieu of WX Type for smaller wire sizes. WXS Type molds offer smaller size and weight advantages.
- Please contact your representative for additional sizes.
- For more information on required tools and accessories, see Page 120-122.

WXS Mini Mold

А	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
4	4	WXS-4A-4A	2-2	CL-2	45
3	3	WXS-3A-3A	2-2	CL-2	45
2 SOL	2 SOL	WXS-2AS-2AS	2-3	CL-2	65
2	2	WXS-2A-2A	2-3	CL-2	65
2	4	WXS-2A-4A	2-3	CL-2	65
1	1	WXS-1A-1A	2-3	CL-2	65
1	2	WXS-1A-2A	2-3	CL-2	65
1	4	WXS-1A-4A	2-3	CL-2	65
1/0	1/0	WXS-1/0A-1/0A	2-3	CL-2	90
1/0	1	WXS-1/0A-1A	2-3	CL-2	90
1/0	2	WXS-1/0A-2A	2-3	CL-2	90
1/0	4	WXS-1/0A-4A	2-3	CL-2	90

WP Mold

A	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
4	4	WP-4A-4A	3	CL-3	32
3	3	WP-3A-3A	3	CL-3	45
2 SOL	2 SOL	WP-2AS-2AS	3	CL-3	65
2	2	WP-2A-2A	3	CL-3	65
2	4	WP-2A-4A	3	CL-3	65
1	1	WP-1A-1A	3	CL-3	65
1	2	WP-1A-2A	3	CL-3	65
1	4	WP-1A-4A	3	CL-3	65
1/0	1/0	WP-1/0A-1/0A	3	CL-3	90
1/0	1	WP-1/0A-1A	3	CL-3	65
1/0	2	WP-1/0A-2A	3	CL-3	65
1/0	4	WP-1/0A-4A	3	CL-3	65
2/0	2/0	WP-2/0A-2/0A	3	CL-3	115
2/0	1/0	WP-2/0A-1/0A	3	CL-3	115
2/0	1	WP-2/0A-1A	3	CL-3	90
2/0	2	WP-2/0A-2A	3	CL-3	90
2/0	4	WP-2/0A-4A	3	CL-3	90
3/0	3/0	WP-3/0A-3/0A	3	CL-3	150
3/0	2/0	WP-3/0A-2/0A	3	CL-3	150
3/0	1/0	WP-3/0A-1/0A	3	CL-3	115
3/0	1	WP-3/0A-1A	3	CL-3	115
3/0	2	WP-3/0A-2A	3	CL-3	115
3/0	4	WP-3/0A-4A	3	CL-3	115
4/0	4/0	WP-4/0A-4/0A	3	CL-3	200
4/0	3/0	WP-4/0A-3/0A	3	CL-3	200
4/0	2/0	WP-4/0A-2/0A	3	CL-3	150
4/0	1/0	WP-4/0A-1/0A	3	CL-3	150
4/0	1	WP-4/0A-1A	3	CL-3	150
4/0	2	WP-4/0A-2A	3	CL-3	150
4/0	4	WP-4/0A-4A	3	CL-3	150
250	250	WP-250A-250A	3	CL-3	250
250	4/0	WP-250A-4/0A	3	CL-3	200
250	3/0	WP-250A-3/0A	3	CL-3	200
250	2/0	WP-250A-2/0A	3	CL-3	150
250	1/0	WP-250A-1/0A	3	CL-3	150
250	1	WP-250A-1A	3	CL-3	150
250	2	WP-250A-2A	3	CL-3	150
300	300	WP-300A-300A	4	CL-4	2 X 150
300	250	WP-300A-250A	3	CL-3	250
300	4/0	WP-300A-4/0A	3	CL-3	200
300	3/0	WP-300A-3/0A	3	CL-3	200
300	2/0	WP-300A-2/0A	3	CL-3	150
300	1/0	WP-300A-1/0A	3	CL-3	150
300	1	WP-300A-1A	3	CL-3	150
300	2	WP-300A-2A	3	CL-3	150



Wire To Wire Connections

- Vertical Connections
- Please contact your representative for additional sizes.
- For more information on required tools and accessories, see Page 120-122.

EXOTHERMIC WELDING EQUIPMENT CATALOG

WF Mold

A	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
8	8	WF-8A-8A	3	CL-3	45
6	6	WF-6A-6A	3	CL-3	45
4	4	WF-4A-4A	3	CL-3	45
3	3	WF-3A-3A	3	CL-3	65
2	2	WF-2A-2A	3	CL-3	65
2 SOL	2 SOL	WF-2AS-2AS	3	CL-3	65
1/0	1/0	WF-1/0A-1/0A	3	CL-3	90
1/0	1	WF-1/0A-1A	3	CL-3	90
1/0	2	WF-1/0A-2A	3	CL-3	90
1/0	4	WF-1/0A-4A	3	CL-3	90
2/0	2/0	WF-2/0A-2/0A	3	CL-3	115
2/0	1/0	WF-2/0A-1/0A	3	CL-3	115
2/0	1	WF-2/0A-1A	3	CL-3	90
2/0	2	WF-2/0A-2A	3	CL-3	90
2/0	4	WF-2/0A-4A	3	CL-3	90
4/0	4/0	WF-4/0A-4/0A	3	CL-3	150
4/0	3/0	WF-4/0A-3/0A	3	CL-3	150
4/0	2/0	WF-4/0A-2/0A	3	CL-3	150
4/0	1/0	WF-4/0A-1/0A	3	CL-3	150
4/0	1	WF-4/0A-1A	3	CL-3	115
4/0	2	WF-4/0A-2A	3	CL-3	115
250	250	WF-250A-250A	3	CL-3	200
250	4/0	WF-250A-4/0A	3	CL-3	200
250	3/0	WF-250A-3/0A	3	CL-3	200
250	2/0	WF-250A-2/0A	3	CL-3	200
250	1/0	WF-250A-1/0A	3	CL-3	150

Wire To Wire Connections

- Horizontal Connections
- Please contact your representative for additional sizes.
- For more information on required tools and accessories, see Page 120-122.

WL Mold

A	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
6 SOL	6 SOL	WL-6AS-6AS	3	CL-3	25
6	6	WL-6A-6A	3	CL-3	25
6	4	WL-6A-4A	3	CL-3	32
4	6	WL-4A-6A	3	CL-3	32
4	6 SOL	WL-4A-6AS	3	CL-3	32
4	8 SOL	WL-4A-8AS	3	CL-3	32
2 SOL	6 SOL	WL-2AS-6AS	3	CL-3	65
2 SOL	6	WL-2AS-6A	3	CL-3	65
2 SOL	2 SOL	WL-2AS-2AS	3	CL-3	65
2 SOL	2	WL-2AS-2A	3	CL-3	65
2	6 SOL	WL-2A-6AS	3	CL-3	32
2	6	WL-2A-6A	3	CL-3	32
2	4	WL-2A-4A	3	CL-3	45
2	2	WL-2A-2A	3	CL-3	65
1/0	6 SOL	WL-1/0A-6AS	3	CL-3	45
1/0	2 SOL	WL-1/0A-2AS	3	CL-3	65
1/0	2	WL-1/0A-2A	3	CL-3	65
1/0	1/0	WL-1/0A-1/0A	3	CL-3	90
2/0	6 SOL	WL-2/0A-6AS	3	CL-3	65
2/0	2 SOL	WL-2/0A-2AS	3	CL-3	65
2/0	2	WL-2/0A-2A	3	CL-3	65
2/0	1/0	WL-2/0A-1/0A	3	CL-3	90
2/0	2/0	WL-2/0A-2/0A	3	CL-3	90



Wire To Wire Connections

- Please contact your representative for additional sizes.
- For more information on required tools and accessories, see Page 120-122.

EXOTHERMIC WELDING EQUIPMENT CATALOG

WXL Mold

A	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
4	4	WXL-4A-4A	5	CL-3	65
3	3	WXL-3A-3A	5	CL-3	65
2 SOL	2 SOL	WXL-2AS-2AS	5	CL-3	90
2	2	WXL-2A-2A	5	CL-3	90
2	4	WXL-2A-4A	5	CL-3	65
1	1	WXL-1A-1A	5	CL-3	115
1	2	WXL-1A-2A	5	CL-3	90
1	4	WXL-1A-4A	5	CL-3	90
1/0	1/0	WXL-1/0A-1/0A	5	CL-3	150
1/0	1	WXL-1/0A-1A	5	CL-3	90
1/0	2	WXL-1/0A-2A	5	CL-3	90
1/0	4	WXL-1/0A-4A	5	CL-3	90
2/0	2/0	WXL-2/0A-2/0A	5	CL-3	200
2/0	1/0	WXL-2/0A-1/0A	5	CL-3	200
2/0	1	WXL-2/0A-1A	5	CL-3	150
2/0	2	WXL-2/0A-2A	5	CL-3	150
3/0	3/0	WXL-3/0A-3/0A	5	CL-3	250
3/0	2/0	WXL-3/0A-2/0A	5	CL-3	200
3/0	1/0	WXL-3/0A-1/0A	5	CL-3	200
3/0	1	WXL-3/0A-1A	5	CL-3	150
3/0	2	WXL-3/0A-2A	5	CL-3	150
4/0	4/0	WXL-4/0A-4/0A	5	CL-3	250
4/0	3/0	WXL-4/0A-3/0A	5	CL-3	250
4/0	2/0	WXL-4/0A-2/0A	5	CL-3	200
4/0	1/0	WXL-4/0A-1/0A	5	CL-3	200
4/0	1	WXL-4/0A-1A	5	CL-3	150
4/0	2	WXL-4/0A-2A	5	CL-3	150
250	250	WXL-250A-250A	6	CL-4	2 X 150
250	4/0	WXL-250A-4/0A	6	CL-4	2 X 150
250	3/0	WXL-250A-3/0A	6	CL-4	2 X 150
250	2/0	WXL-250A-2/0A	5	CL-3	250
250	1/0	WXL-250A-1/0A	5	CL-3	250
250	1	WXL-250A-1A	5	CL-3	200
250	2	WXL-250A-2A	5	CL-3	150
300	300	WXL-300A-300A	6	CL-4	2 X 200
300	250	WXL-300A-250A	6	CL-4	2 X 200
300	4/0	WXL-300A-4/0A	6	CL-4	2 X 150
300	3/0	WXL-300A-3/0A	6	CL-4	2 X 150
300	2/0	WXL-300A-2/0A	5	CL-3	250
300	1/0	WXL-300A-1/0A	5	CL-3	250
300	1	WXL-300A-1A	5	CL-3	200
300	2	WXL-300A-2A	5	CL-3	150



Wire To Wire Connections

- Please contact your representative for additional sizes.
- For more information on required tools and accessories, see Page 120-122.

Ground Rod to Wire Connections

GEE Mold

A	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
	4	GEE-12-4A	3	CL-3	65
	2 SOL	GEE-12-2AS	3	CL-3	65
	2	GEE-12-2A	3	CL-3	65
	1	GEE-12-1A	3	CL-3	65
1/2"	1/0	GEE-12-1/0A	3	CL-3	90
diameter	2/0	GEE-12-2/0A	3	CL-3	90
	3/0	GEE-12-3/0A	3	CL-3	90
	4/0	GEE-12-4/0A	3	CL-3	90
	250	GEE-12-250A	3	CL-3	90
	300	GEE-12-300A	3	CL-3	90
	4	GEE-15-4A	3	CL-3	65
	2 SOL	GEE-15-2AS	3	CL-3	65
	2	GEE-15-2A	3	CL-3	65
	1	GEE-15-1A	3	CL-3	65
	1/0	GEE-15-1/0A	3	CL-3	90
5/8"	2/0	GEE-15-2/0A	3	CL-3	90
diameter	3/0	GEE-15-3/0A	3	CL-3	90
	4/0	GEE-15-4/0A	3	CL-3	90
	250	GEE-15-250A	3	CL-3	90
	300	GEE-15-300A	3	CL-3	115
	350	GEE-15-350A	3	CL-3	115
	500	GEE-15-500A	3	CL-3	150
	4	GEE-18-4A	3	CL-3	90
	2 SOL	GEE-18-2AS	3	CL-3	90
	2	GEE-18-2A	3	CL-3	90
	1	GEE-18-1A	3	CL-3	90
	1/0	GEE-18-1/0A	3	CL-3	90
3/4"	2/0	GEE-18-2/0A	3	CL-3	90
diameter	3/0	GEE-18-3/0A	3	CL-3	90
alameter	4/0	GEE-18-4/0A	3	CL-3	90
	250	GEE-18-250A	3	CL-3	90
	300	GEE-18-300A	3	CL-3	115
	350	GEE-18-350A	3	CL-3	115
	500	GEE-18-500A	3	CL-3	150
	750	GEE-18-750A	3	CL-3	250
	4	GEE-25-4A	3	CL-3	150
	2 SOL	GEE-25-2AS	3	CL-3	150
	2	GEE-25-2A	3	CL-3	150
	1 (0	GEE-25-TA	3	CL-3	150
	1/0	GEE-25-1/UA	3	CL-3	150
-1 77	2/0	GEE-25-2/0A	3	CL-3	150
1" diameter	3/0	GEE-25-3/UA	3	OL-3	150
	4/0	GEE-25-4/UA	<u></u> ৩	0L-3	150
	250	GEE-25-250A	3	0L-3	150
	300	GEE-25-300A	3	OL-3	200
	350	GEE-25-350A	3	OL-3	200
	500	GEE-25-500A	3	OL-3	200
	/50	GEE-25-750A	3	OL-3	250
	1000	GEE-25-1000A	4	UL-4	2 X150



Ground Rod To Wire Connections

- Ground rod diameter is NOMINAL and in inches. Other dimensions available on request. Please provide wire and rod dimensions as well as material type when ordering custom specifications.
- Please contact your representative for additional sizes.
- For more information on required tools and accessories, see Page 120-122.

EXOTHERMIC WELDING EQUIPMENT CATALOG

GET Mold

А	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
	4	GET-12-4A	3	CL-3	90
	2 SOL	GET-12-2AS	3	CL-3	90
	2	GET-12-2A	3	CL-3	90
	1	GET-12-1A	3	CL-3	90
1/2"	1/0	GET-12-1/0A	3	CL-3	90
diameter	2/0	GET-12-2/0A	3	CL-3	90
	3/0	GET-12-3/0A	3	CL-3	115
	4/0	GET-12-4/0A	3	CL-3	115
	250	GET-12-250A	3	CL-3	150
	300	GET-12-300A	3	CL-3	200
	4	GET-15-4A	3	CL-3	90
	2 SOL	GET-15-2AS	3	CL-3	90
	2	GET-15-2A	3	CL-3	90
	1	GET-15-1A	3	CL-3	90
	1/0	GET-15-1/0A	3	CL-3	90
5/8"	2/0	GET-15-2/0A	3	CL-3	115
diameter	3/0	GET-15-3/0A	3	CL-3	115
	4/0	GET-15-4/0A	3	CL-3	115
	250	GET-15-250A	3	CL-3	200
	300	GET-15-300A	3	CL-3	200
	350	GET-15-350A	3	CL-3	250
	500	GET-15-500A	3	CL-3	250
	4	GET-18-4A	3	CL-3	90
	2 SOL	GET-18-2AS	3	CL-3	90
	2	GET-18-2A	3	CL-3	90
	1	GET-18-1A	3	CL-3	90
	1/0	GET-18-1/0A	3	CL-3	115
3/4"	2/0	GET-18-2/0A	3	CL-3	115
diamotor	3/0	GET-18-3/0A	3	CL-3	115
ulameter	4/0	GET-18-4/0A	3	CL-3	115
	250	GET-18-250A	3	CL-3	150
	300	GET-18-300A	3	CL-3	200
	350	GET-18-350A	3	CL-3	200
	500	GET-18-500A	3	CL-3	250
	750	GET-18-750A	4	CL-3	2 X 200
1" diameter	4	GET-25-4A	3	CL-3	150
	2 SOL	GET-25-2AS	3	CL-3	150
	2	GET-25-2A	3	CL-3	150
	1	GET-25-1A	3	CL-3	150
	1/0	GET-25-1/0A	3	CL-3	150
	2/0	GET-25-2/0A	3	CL-3	150
	3/0	GET-25-3/0A	3	CL-3	150
	4/0	GET-25-4/0A	3	CL-3	150
	250	GET-25-250A	3	CL-3	200
	300	GET-25-300A	3	CL-3	200
	350	GET-25-350A	3	CL-3	200
	500	GET-25-500A	3	CL-3	250
	750	GET-25-750A	4	CL-4	2 X 200
	1000	GET-25-1000A	4	CI -4	2 X 250



Ground Rod To Wire Connections

- Ground rod diameter is NOMINAL and in inches. Other dimensions available on request. Please provide wire and rod dimensions as well as material type when ordering custom specifications.
- Please contact your representative for additional sizes.
- For more information on required tools and accessories, see Page 120-122.

GST Mold

4 GST-12-4A 7 CL-3 65 2 SQL GST-12-2AS 7 CL-3 65 1 GST-12-2A 7 CL-3 65 1 GST-12-1A 7 CL-3 15 1/0 GST-12-1/0A 7 CL-3 115 3/0 GST-12-2/0A 7 CL-3 150 3/0 GST-12-4/0A 7 CL-3 150 3/0 GST-12-4/0A 7 CL-3 150 3/0 GST-12-4/0A 7 CL-3 150 3/0 GST-12-250A 7 CL-3 150 3/0 GST-15-20A 7 CL-3 65 2 GST-15-20A 7 CL-3 150 3/0 GST-15-2/0A 7 CL-3 115 3/0 GST-15-3/0A 7 CL-3 150 3/0 GST-15-3/0A 7 CL-3 150 3/0 GST-15-3/0A 7 CL-3	A	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
2 SOL GST-12-2A 7 CL-3 65 1 GST-12-2A 7 CL-3 65 1/0 GST-12-1/A 7 CL-3 115 1/0 GST-12-1/0A 7 CL-3 115 3/0 GST-12-2/0A 7 CL-3 115 3/0 GST-12-2/0A 7 CL-3 150 4/0 GST-12-3/0A 7 CL-3 150 2/0 GST-12-20A 7 CL-3 150 3/0 GST-15-20A 7 CL-3 65 2 SOL GST-15-2A 7 CL-3 65 2 GST-15-2A 7 CL-3 65 10 GST-15-20A 7 CL-3 115 3/0 GST-15-20A 7 CL-3 150 150 250 GST-15-20A 7 CL-3 150 2/0 GST-15-20A 7 CL-3 250 250 GST-15-50A 7 CL-3		4	GST-12-4A	7	CL-3	65
2 GST-12-2A 7 CL-3 65 1 GST-12-1/A 7 CL-3 115 1/0 GST-12-1/0A 7 CL-3 115 2/0 GST-12-2/0A 7 CL-3 115 3/0 GST-12-3/0A 7 CL-3 150 2/0 GST-12-2/0A 7 CL-3 150 2/0 GST-12-3/0A 7 CL-3 200 3/0 GST-12-250A 7 CL-3 65 3/0 GST-15-2AS 7 CL-3 65 2 GST-15-2AS 7 CL-3 65 1 GST-15-2AS 7 CL-3 150 2/0 GST-15-2/0A 7 CL-3 150 3/0 GST-15-3/0A 7 CL-3 <td>2 SOL</td> <td>GST-12-2AS</td> <td>7</td> <td>CL-3</td> <td>65</td>		2 SOL	GST-12-2AS	7	CL-3	65
1/2" 1 GST-12-1A 7 CL-3 65 1/0 GST-12-1/0A 7 CL-3 115 2/0 GST-12-2/0A 7 CL-3 115 3/0 GST-12-3/0A 7 CL-3 150 2/0 GST-12-300A 7 CL-3 150 2/0 GST-12-250A 7 CL-3 200 3/0 GST-15-2AO 7 CL-3 65 2 GST-15-2AS 7 CL-3 65 2 GST-15-1/0A 7 CL-3 65 2 GST-15-2/0A 7 CL-3 150 3/0 GST-15-3/0A 7 CL-3 150 3/0 GST-15-3/0A 7 CL-3 150 300 GST-15-3/0A 7 CL-3 150 300 GST-15-300A 7 CL-3 250 500 GST-18-2/0A 7 CL-3 65 2 SOL GST-18-30A <td>2</td> <td>GST-12-2A</td> <td>7</td> <td>CL-3</td> <td>65</td>		2	GST-12-2A	7	CL-3	65
1/2" 1/0 GST-12-1/0A 7 CL-3 115 2/0 GST-12-2/0A 7 CL-3 150 3/0 GST-12-3/0A 7 CL-3 150 250 GST-12-4/0A 7 CL-3 150 300 GST-12-250A 7 CL-3 65 250 GST-15-2AS 7 CL-3 65 2 GST-15-2A 7 CL-3 150 2 GST-15-2A 7 CL-3 65 1 GST-15-1A 7 CL-3 115 2/0 GST-15-2/0A 7 CL-3 115 2/0 GST-15-3/0A 7 CL-3 150 3/0 GST-15-3/0A 7 CL-3 150 3/0 GST-15-3/0A 7 CL-3 150 3/0 GST-15-3/0A 7 CL-3 200 350 GST-18-2A 7 CL-3 65 2 SOL GST-18-2A		1	GST-12-1A	7	CL-3	65
diameter 2/0 GST-12-2/0A 7 CL-3 115 3/0 GST-12-3/0A 7 CL-3 150 4/0 GST-12-4/0A 7 CL-3 150 300 GST-12-250A 7 CL-3 200 4 GST-15-2AS 7 CL-3 65 2 SOL GST-15-2A 7 CL-3 65 2 GST-15-2A 7 CL-3 65 1 GST-15-2A 7 CL-3 150 1/0 GST-15-20A 7 CL-3 150 1/0 GST-15-20A 7 CL-3 115 3/0 GST-15-20A 7 CL-3 115 3/0 GST-15-20A 7 CL-3 150 250 GST-15-30A 7 CL-3 200 350 GST-15-30A 7 CL-3 200 350 GST-18-20A 7 CL-3 200 300 GST-18-20A	1/2"	1/0	GST-12-1/0A	7	CL-3	115
3/0 GST-12-3/0A 7 CL-3 150 4/0 GST-12-4/0A 7 CL-3 150 250 GST-12-250A 7 CL-3 200 300 GST-12-250A 7 CL-3 65 2SOL GST-15-2A 7 CL-3 65 2 GST-15-2A 7 CL-3 65 1 GST-15-1A 7 CL-3 65 1 GST-15-2A 7 CL-3 115 20 GST-15-2A 7 CL-3 115 3/0 GST-15-3/0A 7 CL-3 150 250 GST-15-300A 7 CL-3 150 300 GST-15-300A 7 CL-3 250 500 GST-15-300A 7 CL-3 250 300 GST-18-2A 7 CL-3 65 2 GST-18-2A 7 CL-3 65 2 GST-18-2A 7 CL-3 <td< td=""><td>diameter</td><td>2/0</td><td>GST-12-2/0A</td><td>7</td><td>CL-3</td><td>115</td></td<>	diameter	2/0	GST-12-2/0A	7	CL-3	115
4/0 GST-12-4/0A 7 CL-3 150 250 GST-12-250A 7 CL-3 120 300 GST-12-300A 7 CL-3 200 4 GST-15-2AA 7 CL-3 65 2 GST-15-2AS 7 CL-3 65 2 GST-15-2A 7 CL-3 65 1 GST-15-2A 7 CL-3 150 2/0 GST-15-2/0A 7 CL-3 115 3/0 GST-15-2/0A 7 CL-3 150 3/0 GST-15-3/0A 7 CL-3 150 250 GST-15-20A 7 CL-3 150 300 GST-15-20A 7 CL-3 200 350 GST-15-20A 7 CL-3 200 350 GST-15-20A 7 CL-3 250 300 GST-18-20A 7 CL-3 65 2 SOL GST-18-20A 7		3/0	GST-12-3/0A	7	CL-3	150
250 GST-12-250A 7 CL-3 150 300 GST-12-300A 7 CL-3 200 4 GST-15-4A 7 CL-3 65 2 GST-15-2A 7 CL-3 65 1 GST-15-2A 7 CL-3 65 1 GST-15-1A 7 CL-3 150 1/0 GST-15-1A 7 CL-3 115 3/0 GST-15-2AA 7 CL-3 115 3/0 GST-15-3/0A 7 CL-3 150 3/0 GST-15-3/0A 7 CL-3 150 3/0 GST-15-3/0A 7 CL-3 150 300 GST-15-300A 7 CL-3 250 350 GST-15-300A 7 CL-3 250 500 GST-18-2A 7 CL-3 250 501 GST-18-2A 7 CL-3 150 2 GST-18-3/0A 7 CL-3		4/0	GST-12-4/0A	7	CL-3	150
300 GST-12-300A 7 CL-3 200 4 GST-15-2AS 7 CL-3 65 2 SOL GST-15-2AS 7 CL-3 65 2 GST-15-2A 7 CL-3 65 1 GST-15-1A 7 CL-3 65 1 GST-15-1/0A 7 CL-3 115 3/0 GST-15-2/0A 7 CL-3 150 3/0 GST-15-3/0A 7 CL-3 150 4/0 GST-15-3/0A 7 CL-3 150 250 GST-15-300A 7 CL-3 250 300 GST-15-300A 7 CL-3 250 500 GST-18-300A 7 CL-3 250 500 GST-18-2AS 7 CL-3 65 2 GST-18-2AS 7 CL-3 65 2 GST-18-2AS 7 CL-3 115 2/0 GST-18-2AS 7 CL-3 150		250	GST-12-250A	7	CL-3	150
4 GST-15-4A 7 CL-3 65 2 GST-15-2AS 7 CL-3 65 2 GST-15-2AS 7 CL-3 65 1 GST-15-1A 7 CL-3 115 5/8" 2/0 GST-15-2/0A 7 CL-3 115 3/0 GST-15-2/0A 7 CL-3 115 3/0 GST-15-2/0A 7 CL-3 150 250 GST-15-20A 7 CL-3 150 300 GST-15-20A 7 CL-3 250 300 GST-15-300A 7 CL-3 250 500 GST-18-20A 7 CL-3 250 500 GST-18-2AS 7 CL-3 65 2 SOL GST-18-2AS 7 CL-3 65 2 SOL GST-18-2A 7 CL-3 150 3/4" diameter 10 GST-18-2A 7 CL-3 150		300	GST-12-300A	7	CL-3	200
2 SOL GST-15-2AS 7 CL-3 65 2 GST-15-2A 7 CL-3 65 1 GST-15-1A 7 CL-3 65 10 GST-15-1A 7 CL-3 115 2/0 GST-15-2/0A 7 CL-3 115 3/0 GST-15-3/0A 7 CL-3 150 4/0 GST-15-3/0A 7 CL-3 150 250 GST-15-300A 7 CL-3 200 350 GST-15-300A 7 CL-3 250 500 GST-15-500A 8 CL-4 2 X 200 350 GST-18-300A 7 CL-3 65 1 GST-18-2A 7 CL-3 65 1 GST-18-2A 7 CL-3 150 2/0 GST-18-2A 7 CL-3 150 2/0 GST-18-2A 7 CL-3 150 2/0 GST-18-3/0A 7		4	GST-15-4A	7	CL-3	65
2 GST-15-2A 7 CL-3 65 1 GST-15-1A 7 CL-3 65 1/0 GST-15-1/0A 7 CL-3 115 2/0 GST-15-2/0A 7 CL-3 115 3/0 GST-15-3/0A 7 CL-3 150 4/0 GST-15-250A 7 CL-3 150 250 GST-15-300A 7 CL-3 200 350 GST-15-300A 7 CL-3 250 500 GST-15-500A 8 CL-4 2 X 200 350 GST-18-20A 7 CL-3 65 2 SOL GST-18-2A 7 CL-3 65 1 GST-18-2A 7 CL-3 15 2/0 GST-18-2A 7 CL-3 15 1/0 GST-18-2A 7 CL-3 15 2/0 GST-18-20A 7 CL-3 15 3/4" GST-18-3/0A 7		2 SOL	GST-15-2AS	7	CL-3	65
1 GST-15-1/A 7 CL-3 65 1/0 GST-15-1/0A 7 CL-3 115 2/0 GST-15-2/0A 7 CL-3 115 3/0 GST-15-2/0A 7 CL-3 150 4/0 GST-15-3/0A 7 CL-3 150 250 GST-15-250A 7 CL-3 250 300 GST-15-300A 7 CL-3 250 350 GST-15-300A 7 CL-3 250 500 GST-15-300A 7 CL-3 250 500 GST-18-2A 7 CL-3 65 2 SOL GST-18-2A 7 CL-3 65 1 GST-18-2A 7 CL-3 150 3/4" diameter 1/0 GST-18-2A 7 CL-3 150 2/0 GST-18-2A 7 CL-3 150 150 150 150 150 150 150 150 150		2	GST-15-2A	7	CL-3	65
5/8" 1/0 GST-15-1/0A 7 CL-3 115 diameter 3/0 GST-15-2/0A 7 CL-3 115 4/0 GST-15-3/0A 7 CL-3 150 4/0 GST-15-4/0A 7 CL-3 150 250 GST-15-250A 7 CL-3 200 350 GST-15-300A 7 CL-3 250 500 GST-15-500A 8 CL-4 2 X 200 4 GST-18-2AS 7 CL-3 65 2 SOL GST-18-2AS 7 CL-3 65 1 GST-18-2AS 7 CL-3 65 1 65 1 65 1 2/0 GST-18-2/0A 7 CL-3 115 3/4" diameter 4/0 GST-18-3/0A 7 CL-3 150 2/0 GST-18-3/0A 7 CL-3 150 250 GST-18-300A 7 CL-3 200 300 GST-18-300A		1	GST-15-1A	7	CL-3	65
5/8" 2/0 GST-15-2/0A 7 CL-3 115 diameter 3/0 GST-15-3/0A 7 CL-3 150 4/0 GST-15-3/0A 7 CL-3 150 250 GST-15-250A 7 CL-3 200 350 GST-15-300A 7 CL-3 200 350 GST-15-300A 7 CL-3 250 500 GST-18-30A 7 CL-3 65 2 SOL GST-18-2AS 7 CL-3 65 2 GST-18-2AS 7 CL-3 65 1 GST-18-2AS 7 CL-3 65 1 GST-18-2AS 7 CL-3 65 1 0 GST-18-2A 7 CL-3 150 2/0 GST-18-2/0A 7 CL-3 150 20 150 65 1/0 GST-18-3/0A 7 CL-3 150 2/0 GST-18-3/0A 7 CL-3 200 300 <td></td> <td>1/0</td> <td>GST-15-1/0A</td> <td>7</td> <td>CL-3</td> <td>115</td>		1/0	GST-15-1/0A	7	CL-3	115
diameter 3/0 GST-15-3/0A 7 CL-3 150 4/0 GST-15-4/0A 7 CL-3 150 250 GST-15-250A 7 CL-3 200 350 GST-15-350A 7 CL-3 200 350 GST-15-350A 7 CL-3 250 500 GST-15-500A 8 CL-4 2 X 200 4 GST-18-2AS 7 CL-3 65 2 GST-18-2AS 7 CL-3 65 2 GST-18-2AS 7 CL-3 65 1 GST-18-2AA 7 CL-3 150 20 GST-18-1/0A 7 CL-3 115 3/4" diameter 1/0 GST-18-3/0A 7 CL-3 150 2/0 GST-18-3/0A 7 CL-3 150 250 350 GST-18-300A 7 CL-3 250 350 GST-18-50A 8 CL-4 2 X 250 750	5/8"	2/0	GST-15-2/0A	7	CL-3	115
4/0 GST-15-4/0A 7 CL-3 150 250 GST-15-250A 7 CL-3 120 300 GST-15-300A 7 CL-3 200 350 GST-15-350A 7 CL-3 250 500 GST-15-500A 8 CL-4 2 X 200 4 GST-18-2AS 7 CL-3 65 2 GST-18-2AS 7 CL-3 65 2 GST-18-1A 7 CL-3 65 1 GST-18-2AS 7 CL-3 65 1 GST-18-2AA 7 CL-3 115 2/0 GST-18-2AA 7 CL-3 115 3/0 GST-18-3/0A 7 CL-3 150 250 GST-18-3/0A 7 CL-3 250 300 GST-18-300A 7 CL-3 250 350 GST-18-300A 7 CL-3 250 350 GST-18-300A 7 CL-3 </td <td>diameter</td> <td>3/0</td> <td>GST-15-3/0A</td> <td>7</td> <td>CL-3</td> <td>150</td>	diameter	3/0	GST-15-3/0A	7	CL-3	150
250 GST-15-250A 7 CL-3 150 300 GST-15-300A 7 CL-3 200 350 GST-15-350A 7 CL-3 250 500 GST-15-350A 7 CL-3 250 500 GST-18-500A 8 CL-4 2 X 200 4 GST-18-2AS 7 CL-3 65 2 GST-18-2AS 7 CL-3 65 2 GST-18-1A 7 CL-3 65 1 GST-18-2AS 7 CL-3 115 2/0 GST-18-2AA 7 CL-3 115 3/0 GST-18-3/0A 7 CL-3 150 4/0 GST-18-3/0A 7 CL-3 250 300 GST-18-350A 8 CL-4 2 X 250 500 GST-18-300A 7 CL-3 250 350 GST-18-350A 8 CL-4 2 X 250 500 GST-25-2AA 7		4/0	GST-15-4/0A	7	CL-3	150
300 GST-15-300A 7 CL-3 200 350 GST-15-350A 7 CL-3 250 500 GST-15-500A 8 CL-4 2 X 200 4 GST-18-2AS 7 CL-3 65 2 SOL GST-18-2AS 7 CL-3 65 2 GST-18-2A 7 CL-3 65 1 GST-18-2A 7 CL-3 65 1/0 GST-18-1A 7 CL-3 115 3/4" diameter 2/0 GST-18-3/0A 7 CL-3 1150 3/0 GST-18-3/0A 7 CL-3 150 150 150 300 GST-18-3/0A 7 CL-3 150 250 GST-18-30A 7 CL-3 200 300 GST-18-30A 7 CL-3 250 350 GST-18-30A 8 CL-4 2 X 250 500 GST-18-750A 8 CL-4 3 X 200 150		250	GST-15-250A	7	CL-3	150
350 GST-15-350A 7 CL-3 250 500 GST-15-500A 8 CL-4 2 X 200 4 GST-18-500A 8 CL-4 2 X 200 2 SOL GST-18-2AS 7 CL-3 65 2 GST-18-2A 7 CL-3 65 1 GST-18-1A 7 CL-3 115 2/0 GST-18-1A 7 CL-3 115 2/0 GST-18-3/0A 7 CL-3 115 3/0 GST-18-3/0A 7 CL-3 150 2/0 GST-18-3/0A 7 CL-3 150 3/0 GST-18-3/0A 7 CL-3 150 2/0 GST-18-3/0A 7 CL-3 200 300 GST-18-300A 7 CL-3 250 350 GST-18-30A 8 CL-4 2 X 250 750 GST-18-750A 8 CL-4 3 X 200 10 GST-25-2AS		300	GST-15-300A	7	CL-3	200
1" 500 GST-15-500A 8 CL-4 2 X 200 4 GST-18-4A 7 CL-3 65 2 SOL GST-18-2AS 7 CL-3 65 2 GST-18-2A 7 CL-3 65 1 GST-18-1A 7 CL-3 65 1 GST-18-1A 7 CL-3 15 2/0 GST-18-2/0A 7 CL-3 115 3/4" 3/0 GST-18-3/0A 7 CL-3 115 3/0 GST-18-3/0A 7 CL-3 150 4/0 GST-18-3/0A 7 CL-3 200 300 GST-18-300A 7 CL-3 200 300 GST-18-300A 7 CL-3 200 300 GST-18-300A 8 CL-4 2 X 250 350 GST-18-300A 8 CL-4 3 X 200 200 GST-25-2A 7 CL-3 90 2 GST-25-2		350	GST-15-350A	7	CL-3	250
1" 4 GST-18-4A 7 CL-3 65 2 SOL GST-18-2AS 7 CL-3 65 2 GST-18-2A 7 CL-3 65 1 GST-18-1A 7 CL-3 65 1/0 GST-18-1A 7 CL-3 115 2/0 GST-18-2/0A 7 CL-3 115 2/0 GST-18-3/0A 7 CL-3 115 3/0 GST-18-3/0A 7 CL-3 150 3/0 GST-18-3/0A 7 CL-3 150 250 GST-18-3/0A 7 CL-3 200 300 GST-18-30A 7 CL-3 200 300 GST-18-30A 8 CL-4 2 X 150 500 GST-18-50A 8 CL-4 2 X 250 750 GST-25-2A 7 CL-3 90 2 GST-25-2A 7 CL-3 90 2 GST-25-3/0A 7		500	GST-15-500A	8	CL-4	2 X 200
1" 2 SOL GST-18-2AS 7 CL-3 65 2 GST-18-2A 7 CL-3 65 1 GST-18-1A 7 CL-3 65 1/0 GST-18-1A 7 CL-3 115 2/0 GST-18-1/0A 7 CL-3 115 3/4" 3/0 GST-18-2/0A 7 CL-3 115 3/0 GST-18-3/0A 7 CL-3 150 4/0 GST-18-4/0A 7 CL-3 150 250 GST-18-300A 7 CL-3 200 300 GST-18-300A 7 CL-3 200 350 GST-18-300A 7 CL-3 250 350 GST-18-300A 8 CL-4 2 X 150 500 GST-18-50A 8 CL-4 2 X 250 750 GST-25-2AS 7 CL-3 90 2 GST-25-2AS 7 CL-3 90 1 GST-25-1		4	GST-18-4A	7	CL-3	65
1 GST-18-2A 7 CL-3 65 1 GST-18-1A 7 CL-3 65 1/0 GST-18-1/0A 7 CL-3 115 2/0 GST-18-2/0A 7 CL-3 115 3/0 GST-18-3/0A 7 CL-3 115 3/0 GST-18-3/0A 7 CL-3 150 4/0 GST-18-4/0A 7 CL-3 150 250 GST-18-300A 7 CL-3 200 300 GST-18-300A 7 CL-3 250 350 GST-18-300A 7 CL-3 250 350 GST-18-300A 7 CL-3 250 350 GST-18-300A 8 CL-4 2 X 150 500 GST-18-500A 8 CL-4 3 X 200 750 GST-25-2AS 7 CL-3 90 2 GST-25-2AS 7 CL-3 90 2 GST-25-1/0A 7 <td< td=""><td></td><td>2 SOL</td><td>GST-18-2AS</td><td>7</td><td>CL-3</td><td>65</td></td<>		2 SOL	GST-18-2AS	7	CL-3	65
1 GST-18-1A 7 CL-3 65 1/0 GST-18-1/0A 7 CL-3 115 2/0 GST-18-2/0A 7 CL-3 115 3/0 GST-18-3/0A 7 CL-3 150 4/0 GST-18-4/0A 7 CL-3 150 250 GST-18-250A 7 CL-3 200 300 GST-18-350A 7 CL-3 250 350 GST-18-350A 7 CL-3 250 350 GST-18-350A 8 CL-4 2 X 150 500 GST-18-500A 8 CL-4 2 X 250 750 GST-18-750A 8 CL-4 3 X 200 4 GST-25-2AS 7 CL-3 90 2 GST-25-2AS 7 CL-3 90 2 GST-25-1/0A 7 CL-3 115 1/0 GST-25-2/0A 7 CL-3 150 3/0 GST-25-3/0A 7		2	GST-18-2A	7	CL-3	65
1/0 GSI-18-1/0A 7 CL-3 115 3/4" 2/0 GST-18-2/0A 7 CL-3 115 3/0 GST-18-2/0A 7 CL-3 115 3/0 GST-18-3/0A 7 CL-3 150 4/0 GST-18-4/0A 7 CL-3 150 250 GST-18-250A 7 CL-3 200 300 GST-18-300A 7 CL-3 250 350 GST-18-300A 7 CL-3 250 350 GST-18-300A 7 CL-3 250 350 GST-18-300A 8 CL-4 2 X 150 500 GST-18-500A 8 CL-4 3 X 200 750 GST-18-750A 8 CL-4 3 X 200 2 GST-25-2AS 7 CL-3 90 2 GST-25-2A 7 CL-3 115 1/0 GST-25-1/0A 7 CL-3 150 3/0 GST-25-3/0A		1	GSI-18-1A	(CL-3	65
3/4" diameter 2/0 GSI-18-2/0A 7 CL-3 115 3/0 GST-18-3/0A 7 CL-3 150 4/0 GST-18-3/0A 7 CL-3 150 250 GST-18-4/0A 7 CL-3 200 300 GST-18-250A 7 CL-3 200 300 GST-18-300A 7 CL-3 250 350 GST-18-350A 8 CL-4 2 X 150 500 GST-18-500A 8 CL-4 2 X 250 750 GST-18-750A 8 CL-4 3 X 200 750 GST-25-2AS 7 CL-3 90 2 GST-25-2AS 7 CL-3 90 2 GST-25-1/A 7 CL-3 90 1 GST-25-1/A 7 CL-3 115 1/0 GST-25-3/0A 7 CL-3 150 3/0 GST-25-3/0A 7 CL-3 150 2/0 GST-25-		1/0	GST-18-1/0A		CL-3	115
3/0 GSI-18-3/0A 7 CL-3 150 4/0 GST-18-4/0A 7 CL-3 150 250 GST-18-4/0A 7 CL-3 200 300 GST-18-250A 7 CL-3 200 300 GST-18-300A 7 CL-3 250 350 GST-18-300A 7 CL-3 250 350 GST-18-350A 8 CL-4 2 X 250 500 GST-18-500A 8 CL-4 2 X 250 750 GST-18-750A 8 CL-4 3 X 200 4 GST-25-4A 7 CL-3 90 2 GST-25-2AS 7 CL-3 90 2 GST-25-1/0A 7 CL-3 115 1/0 GST-25-1/0A 7 CL-3 150 3/0 GST-25-3/0A 7 CL-3 150 4/0 GST-25-3/0A 7 CL-3 150 3/0 GST-25-300A 7	3/4"	2/0	GST-18-2/0A	/	CL-3	115
1" 4/0 GSI-18-4/0A 7 CL-3 150 250 GST-18-250A 7 CL-3 200 300 GST-18-250A 7 CL-3 250 350 GST-18-350A 8 CL-4 2 X 150 500 GST-18-500A 8 CL-4 2 X 250 750 GST-18-750A 8 CL-4 3 X 200 4 GST-25-4A 7 CL-3 90 2 SOL GST-25-2AS 7 CL-3 90 2 SOL GST-25-1A 7 CL-3 90 2 SOL GST-25-2A 7 CL-3 90 1 GST-25-1/0A 7 CL-3 115 1/0 GST-25-2/0A 7 CL-3 150 3/0 GST-25-3/0A 7 CL-3 150 3/0 GST-25-3/0A 7 CL-3 150 3/0 GST-25-300A 7 CL-3 150 3/0 GST-25-300A <td>diameter</td> <td>3/0</td> <td>GST-18-3/0A</td> <td>/</td> <td>CL-3</td> <td>150</td>	diameter	3/0	GST-18-3/0A	/	CL-3	150
1" 250 GS1-18-250A 7 CL-3 200 300 GST-18-300A 7 CL-3 250 350 GST-18-350A 8 CL-4 2 X 150 500 GST-18-500A 8 CL-4 2 X 250 750 GST-18-750A 8 CL-4 3 X 200 4 GST-25-4A 7 CL-3 90 2 SOL GST-25-2AS 7 CL-3 90 2 SOL GST-25-1A 7 CL-3 90 1 GST-25-1A 7 CL-3 115 1/0 GST-25-1A 7 CL-3 115 1/0 GST-25-3/0A 7 CL-3 150 3/0 GST-25-3/0A 7 CL-3 150 3/0 GST-25-3/0A 7 CL-3 150 250 GST-25-300A 7 CL-3 150 300 GST-25-300A 8 CL-4 2 X 150 350 GST-25-300A </td <td>a.a.notor</td> <td>4/0</td> <td>GST-18-4/0A</td> <td>1</td> <td>CL-3</td> <td>150</td>	a.a.notor	4/0	GST-18-4/0A	1	CL-3	150
300 GS1-18-300A 7 CL-3 250 350 GST-18-350A 8 CL-4 2 X 150 500 GST-18-500A 8 CL-4 2 X 250 750 GST-18-750A 8 CL-4 3 X 200 4 GST-25-4A 7 CL-3 90 2 SOL GST-25-2AS 7 CL-3 90 2 GST-25-2A 7 CL-3 90 1 GST-25-1A 7 CL-3 115 1/0 GST-25-1A 7 CL-3 115 1/0 GST-25-1A 7 CL-3 115 1/0 GST-25-3/0A 7 CL-3 150 3/0 GST-25-3/0A 7 CL-3 150 3/0 GST-25-3/0A 7 CL-3 150 250 GST-25-300A 7 CL-3 200 300 GST-25-300A 8 CL-4 2 X 200 350 GST-25-350A 8		250	GST-18-250A	/	CL-3	200
350 GS1-18-350A 8 CL-4 2 X 150 500 GST-18-500A 8 CL-4 2 X 250 750 GST-18-750A 8 CL-4 3 X 200 4 GST-25-4A 7 CL-3 90 2 SOL GST-25-2AS 7 CL-3 90 2 GST-25-2A 7 CL-3 90 1 GST-25-1A 7 CL-3 90 1 GST-25-1A 7 CL-3 115 1/0 GST-25-1A 7 CL-3 115 1/0 GST-25-1A 7 CL-3 115 2/0 GST-25-2/0A 7 CL-3 150 3/0 GST-25-3/0A 7 CL-3 150 3/0 GST-25-3/0A 7 CL-3 150 250 GST-25-300A 7 CL-3 200 300 GST-25-350A 8 CL-4 2 X 200 350 GST-25-500A 8		300	GST-18-300A	/	CL-3	250
500 GS1-18-500A 8 CL-4 2 X 250 750 GST-18-750A 8 CL-4 3 X 200 4 GST-25-4A 7 CL-3 90 2 SOL GST-25-2AS 7 CL-3 90 2 GST-25-2AS 7 CL-3 90 1 GST-25-1A 7 CL-3 115 1/0 GST-25-1A 7 CL-3 115 1/0 GST-25-1A 7 CL-3 115 1/0 GST-25-2/0A 7 CL-3 150 3/0 GST-25-3/0A 7 CL-3 150 3/0 GST-25-3/0A 7 CL-3 150 250 GST-25-3/0A 7 CL-3 150 250 GST-25-300A 7 CL-3 200 300 GST-25-300A 8 CL-4 2 X 200 350 GST-25-500A 8 CL-4 3 X 200		350	GST-18-350A	8	CL-4	2 X 150
1" 4 GST-25-4A 7 CL-3 90 2 SOL GST-25-2AS 7 CL-3 90 2 GST-25-2AS 7 CL-3 90 1 GST-25-2AS 7 CL-3 90 1 GST-25-2A 7 CL-3 90 1 GST-25-1A 7 CL-3 115 1/0 GST-25-1A 7 CL-3 115 1/0 GST-25-1/0A 7 CL-3 115 2/0 GST-25-2/0A 7 CL-3 150 3/0 GST-25-3/0A 7 CL-3 150 3/0 GST-25-3/0A 7 CL-3 150 250 GST-25-3/0A 7 CL-3 200 300 GST-25-300A 8 CL-4 2 X 150 350 GST-25-350A 8 CL-4 3 X 200 500 GST-25-500A 8 CL-4 3 X 200	1" diameter	500	GST-18-500A	8	CL-4	2 X 250
1" 2 GST-25-2AS 7 CL-3 90 2 SOL GST-25-2AS 7 CL-3 90 2 GST-25-2AS 7 CL-3 90 1 GST-25-2A 7 CL-3 115 1/0 GST-25-1A 7 CL-3 115 1/0 GST-25-1/0A 7 CL-3 115 1/0 GST-25-2/0A 7 CL-3 150 3/0 GST-25-3/0A 7 CL-3 150 3/0 GST-25-3/0A 7 CL-3 150 250 GST-25-250A 7 CL-3 200 300 GST-25-300A 8 CL-4 2 X 150 350 GST-25-350A 8 CL-4 2 X 200 500 GST-25-500A 8 CL-4 3 X 200		750	GST-18-750A	8	CL-4	3 X 200
1" 20 GST-25-2AS 7 CL-3 90 1 GST-25-2A 7 CL-3 90 1 GST-25-1A 7 CL-3 115 1/0 GST-25-1A 7 CL-3 115 1/0 GST-25-1/0A 7 CL-3 115 2/0 GST-25-2/0A 7 CL-3 150 3/0 GST-25-3/0A 7 CL-3 150 4/0 GST-25-4/0A 7 CL-3 150 250 GST-25-250A 7 CL-3 200 300 GST-25-300A 8 CL-4 2 X 150 350 GST-25-350A 8 CL-4 2 X 200 500 GST-25-500A 8 CL-4 3 X 200		4	GST-25-4A	7	CL-3	90
2 GS1-25-2A 7 CL-3 90 1 GST-25-1A 7 CL-3 115 1/0 GST-25-1/0A 7 CL-3 115 1/0 GST-25-2/0A 7 CL-3 115 2/0 GST-25-2/0A 7 CL-3 150 3/0 GST-25-3/0A 7 CL-3 150 4/0 GST-25-3/0A 7 CL-3 150 250 GST-25-250A 7 CL-3 200 300 GST-25-300A 8 CL-4 2 X 150 350 GST-25-350A 8 CL-4 2 X 200 500 GST-25-500A 8 CL-4 3 X 200		2 SOL	GS1-25-2A5	7	CL-3	90
1" GS1-25-1A 7 CL-3 115 1/0 GST-25-1/0A 7 CL-3 115 2/0 GST-25-2/0A 7 CL-3 150 3/0 GST-25-3/0A 7 CL-3 150 4/0 GST-25-3/0A 7 CL-3 150 250 GST-25-3/0A 7 CL-3 150 250 GST-25-250A 7 CL-3 200 300 GST-25-300A 8 CL-4 2 X 150 350 GST-25-350A 8 CL-4 2 X 200 500 GST-25-500A 8 CL-4 3 X 200		2	GST-25-2A	7	CL-3	90
1" 2/0 GST-25-1/0A 7 CL-3 115 2/0 GST-25-2/0A 7 CL-3 150 3/0 GST-25-3/0A 7 CL-3 150 4/0 GST-25-3/0A 7 CL-3 150 250 GST-25-4/0A 7 CL-3 150 300 GST-25-250A 7 CL-3 200 300 GST-25-300A 8 CL-4 2 X 150 350 GST-25-350A 8 CL-4 2 X 200 500 GST-25-500A 8 CL-4 3 X 200		1/0	GS1-25-1A	7	CL-3	115
1" 2/0 GS1-25-2/0A 7 CL-3 150 diameter 3/0 GST-25-3/0A 7 CL-3 150 4/0 GST-25-3/0A 7 CL-3 150 250 GST-25-4/0A 7 CL-3 200 300 GST-25-250A 7 CL-3 200 300 GST-25-300A 8 CL-4 2 X 150 350 GST-25-350A 8 CL-4 2 X 200 500 GST-25-500A 8 CL-4 3 X 200		1/0	GST-25-1/UA	7	CL-3	115
3/0 GS1-25-3/0A 7 CL-3 150 4/0 GST-25-4/0A 7 CL-3 150 250 GST-25-250A 7 CL-3 200 300 GST-25-300A 8 CL-4 2 X 150 350 GST-25-350A 8 CL-4 2 X 200 500 GST-25-500A 8 CL-4 3 X 200		2/0	GST-25-2/0A	7	CL-3	150
4/0 GST-25-4/0A 7 CL-3 150 250 GST-25-250A 7 CL-3 200 300 GST-25-300A 8 CL-4 2 X 150 350 GST-25-350A 8 CL-4 2 X 200 500 GST-25-500A 8 CL-4 3 X 200		3/0	GST-25-3/UA	7	CL-3	150
250 GST-25-250A 7 CL-3 200 300 GST-25-300A 8 CL-4 2 X 150 350 GST-25-350A 8 CL-4 2 X 200 500 GST-25-500A 8 CL-4 3 X 200		4/0	GST-20-4/UA	7	CL-3	150
300 GS1-25-300A 8 CL-4 2 X 150 350 GST-25-350A 8 CL-4 2 X 200 500 GST-25-500A 8 CL-4 3 X 200		200	GST-23-250A	1	OL-3	200 0 X 150
350 GS1-25-350A 8 CL-4 2 X 200 500 GST-25-500A 8 CL-4 3 X 200		300	GST-20-300A	Ø O	CL-4	2 X 100
500 GST-25-500A 6 GL-4 3 X 200		500	GST-20-30UA	Ø	CL-4	2 X 200
750 GST-25-750A 8 CL_4 2 V 250		750	GST-25-300A	8	CL-4	3 X 250



Ground Rod To Wire Connections

- Ground rod diameter is NOMINAL and in inches. Other dimensions available on request. Please provide wire and rod dimensions as well as material type when ordering custom specifications.
- Please contact your representative for additional sizes.
- For more information on required tools and accessories, see Page 120-122.

EXOTHERMIC WELDING EQUIPMENT CATALOG

GEY Mold

А	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
	4	GEY-12-4A	5	CL-3	90
	2 SOL	GEY-12-2AS	5	CL-3	115
	2	GEY-12-2A	5	CL-3	115
	1	GEY-12-1A	5	CL-3	115
1/2"	1/0	GEY-12-1/0A	5	CL-3	115
diameter	2/0	GEY-12-2/0A	5	CL-3	150
	3/0	GEY-12-3/0A	5	CL-3	200
	4/0	GEY-12-4/0A	5	CL-3	200
	250	GEY-12-250A	6	CL-4	2 X 150
	300	GEY-12-300A	6	CL-4	2 X 200
	4	GEY-15-4A	5	CL-3	90
	2 SOL	GEY-15-2AS	5	CL-3	115
	2	GEY-15-2A	5	CL-3	115
	1	GEY-15-1A	5	CL-3	115
	1/0	GEY-15-1/0A	5	CL-3	150
5/8"	2/0	GEY-15-2/0A	5	CL-3	200
diameter	3/0	GEY-15-3/0A	5	CL-3	250
	4/0	GEY-15-4/0A	5	CL-3	250
	250	GEY-15-250A	6	CL-4	2 X 150
	300	GEY-15-300A	6	CL-4	2 X 200
	350	GEY-15-350A	6	CL-4	2 X 250
	500	GEY-15-500A	6	CL-4	3 X 200
	4	GEY-18-4A	5	CL-3	90
	2 SOL	GEY-18-2AS	5	CL-3	115
	2	GEY-18-2A	5	CL-3	115
	1	GEY-18-1A	5	CL-3	115
	1/0	GEY-18-1/0A	5	CL-3	150
3/4"	2/0	GEY-18-2/0A	5	CL-3	200
diamotor	3/0	GEY-18-3/0A	5	CL-3	250
diameter	4/0	GEY-18-4/0A	5	CL-3	250
	250	GEY-18-250A	6	CL-4	2 X 150
	300	GEY-18-300A	6	CL-4	2 X 200
	350	GEY-18-350A	6	CL-4	2 X 200
	500	GEY-18-500A	6	CL-4	3 X 200
	750	GEY-18-750A	6	CL-4	3 X 250
1" diameter	4	GEY-25-4A	5	CL-3	115
	2 SOL	GEY-25-2AS	5	CL-3	150
	2	GEY-25-2A	5	CL-3	150
	1	GEY-25-1A	5	CL-3	150
	1/0	GEY-25-1/0A	5	CL-3	200
	2/0	GEY-25-2/0A	5	CL-3	250
	3/0	GEY-25-3/0A	6	CL-4	2 X 150
	4/0	GEY-25-4/0A	6	CL-4	2 X 150
	250	GEY-25-250A	6	CL-4	2 X 200
	300	GEY-25-300A	6	CL-4	2 X 250
	350	GEY-25-350A	6	CL-4	2 X 250
	500	GEY-25-500A	6	CL-4	3 X 250
	/50	GEY-25-750A	6	CL-4	2 X 200
	1000	(JEY-25-1000A	h	(J) -4	≥ x 250



Ground Rod To Wire Connections

- Ground rod diameter is NOMINAL and in inches. Other dimensions available on request. Please provide wire and rod dimensions as well as material type when ordering custom specifications.
- Please contact your representative for additional sizes.
- For more information on required tools and accessories, see Page 120-122.

GEP Mold

A	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
	4	GEP-12-4A	5	CL-3	115
	2 SOL	GEP-12-2AS	5	CL-3	115
	2	GEP-12-2A	5	CL-3	115
	1	GEP-12-1A	5	CL-3	115
1/2"	1/0	GEP-12-1/0A	5	CL-3	150
diameter	2/0	GEP-12-2/0A	5	CL-3	200
	3/0	GEP-12-3/0A	5	CL-3	250
	4/0	GEP-12-4/0A	5	CL-3	250
	250	GEP-12-250A	6	CL-4	2 X 150
	300	GEP-12-300A	6	CL-4	2 X 200
	4	GEP-15-4A	5	CL-3	115
	2 SOL	GEP-15-2AS	5	CL-3	150
	2	GEP-15-2A	5	CL-3	150
	1	GEP-15-1A	5	CL-3	150
	1/0	GEP-15-1/0A	5	CL-3	200
5/8"	2/0	GEP-15-2/0A	5	CL-3	250
diameter	3/0	GEP-15-3/0A	6	CL-4	2 X 150
	4/0	GEP-15-4/0A	6	CL-4	2 X 150
	250	GEP-15-250A	6	CL-4	2 X 200
	300	GEP-15-300A	6	CL-4	2 X 250
	350	GEP-15-350A	6	CL-4	2 X 250
	500	GEP-15-500A	6	CL-4	3 X 250
	4	GEP-18-4A	5	CL-3	115
	2 SOL	GEP-18-2AS	5	CL-3	150
	2	GEP-18-2A	5	CL-3	150
	1	GEP-18-1A	5	CL-3	150
	1/0	GEP-18-1/0A	5	CL-3	200
3/4"	2/0	GEP-18-2/0A	5	CL-3	250
diameter	3/0	GEP-18-3/0A	6	CL-4	2 X 150
alamotor	4/0	GEP-18-4/0A	6	CL-4	2 X 150
	250	GEP-18-250A	6	CL-4	2 X 200
	300	GEP-18-300A	6	CL-4	2 X 250
	350	GEP-18-350A	6	CL-4	2 X 250
	500	GEP-18-500A	6	CL-4	3 X 250
	750	GEP-18-750A	6	CL-4	4 X 200
1" diameter	4	GEP-25-4A	5	CL-3	150
	2 SOL	GEP-25-2AS	5	CL-3	200
	<u> </u>	GEP-25-2A	5	CL-3	200
	1/0	CED 25 1/04	5		200
	2/0	GEF-23-1/0A	6		23U
	2/0	GEP-20-2/UA	6	CL-4	2 X 100
	3/0	GEP-20-3/UA	6	CL-4	2 X 200
	4/0	CED 25 250A	6		2 X 200
	200	GEP-25-200A	6		2 X 200
	300	GEP-25-300A	6		3 X 200
	500	GEP-25-500A	6	CL = 4	3 X 250
	750	GEP_25_750A	6	CL-4	2 X 200
	1000	GEP-25-1000A	6	CL-4	2 X 250



Ground Rod To Wire Connections

- Ground rod diameter is NOMINAL and in inches. Other dimensions available on request. Please provide wire and rod dimensions as well as material type when ordering custom specifications.
- Please contact your representative for additional sizes.
- For more information on required tools and accessories, see Page 120-122.
EXOTHERMIC WELDING EQUIPMENT CATALOG

GES Mold

A	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
	4	GES-12-4A	2-3	CL-2	65
	2 SOL	GES-12-2AS	2-3	CL-2	65
1/2"	2	GES-12-2A	2-3	CL-2	65
diameter	1	GES-12-1A	2-3	CL-2	65
	1/0	GES-12-1/0A	2-3	CL-2	90
	2/0	GES-12-2/0A	2-3	CL-2	90
	4	GES-15-4A	2-3	CL-2	65
	2 SOL	GES-15-2AS	2-3	CL-2	65
5/8"	2	GES-15-2A	2-3	CL-2	65
diameter	1	GES-15-1A	2-3	CL-2	65
	1/0	GES-15-1/0A	2-3	CL-2	90
	2/0	GES-15-2/0A	2-3	CL-2	90
	4	GES-18-4A	2-3	CL-2	90
	2 SOL	GES-18-2AS	2-3	CL-2	90
3/4"	2	GES-18-2A	2-3	CL-2	90
diameter	1	GES-18-1A	2-3	CL-2	90
	1/0	GES-18-1/0A	2-3	CL-2	90
	2/0	GES-18-2/0A	2-3	CL-2	90



Ground Rod To Wire Connections

- Ground rod diameter is NOMINAL and in inches. Other dimensions available on request. Please provide wire and rod dimensions as well as material type when ordering custom specifications.
- Please contact your representative for additional sizes.
- For more information on required tools and accessories, see Page 120-122.

GTS Mold

А	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
	4	GTS-12-4A	2-3	CL-2	90
	2 SOL	GTS-12-2AS	2-3	CL-2	90
1/2"	2	GTS-12-2A	2-3	CL-2	90
diameter	1	GTS-12-1A	2-3	CL-2	90
	1/0	GTS-12-1/0A	2-3	CL-2	90
	2/0	GTS-12-2/0A	2-3	CL-2	90
	4	GTS-15-4A	2-3	CL-2	90
5/9"	2 SOL	GTS-15-2AS	2-3	CL-2	90
J/O diamatar	2	GTS-15-2A	2-3	CL-2	90
diameter	1	GTS-15-1A	2-3	CL-2	90
	1/0	GTS-15-1/0A	2-3	CL-2	90
	4	GTS-18-4A	2-3	CL-2	90
3/4"	2 SOL	GTS-18-2AS	2-3	CL-2	90
diameter	2	GTS-18-2A	2-3	CL-2	90
	1	GTS-18-1A	2-3	CL-2	90



Ground Rod To Wire Connections

NOTE

- Ground rod diameter is NOMINAL and in inches. Other dimensions available on request. Please provide wire and rod dimensions as well as material type when ordering custom specifications.
- Please contact your representative for additional sizes.
- For more information on required tools and accessories, see Page 120-122.

GVE Mold

A	Part Number	Price Code	Handle Clamp	Weld Metal Size
1/2" diameter	GVE-12	3	CL-3	250
5/8" diameter	GVE-15	4	CL-4	2 X 150
3/4" diameter	GVE-18	4	CL-4	2 X 200
1" diameter	GVE-25	4	CL-4	2 X 250



Ground Rod To Ground Rod Connections

NOTE

 Ground rod diameter is NOMINAL and in inches. Other dimensions available on request. Please provide wire and rod dimensions as well as material type when ordering custom specifications.

TIP

 Use a ground rod splice clamp, part number GNRDC (pg. 121), to simplify and assist in making ground rod splices with GVE molds.

Plate & Pipe Connections

SHEA Mold

А	Part Number	Price Code	Weld Metal Size	Mold Sealer Type
6	SHEA-6A	1	45	
4	SHEA-4A	1	45	
2	SHEA-2A	1	45	
2 SOL	SHEA-2AS	1	45	
1	SHEA-1A	1	65	DX-3
1/0	SHEA-1/0A	3	90	DX-3
2/0	SHEA-2/0A	3	90	DX-3
3/0	SHEA-3/0A	3	115	DX-3
4/0	SHEA-4/0A	3	115	DX-3
250	SHEA-250A	3	150	DX-3
300	SHEA-300A	3	200	DX-3
350	SHEA-350A	3	200	DX-3
500	SHEA-500A	3	250	DX-3

A	Part Number	Price Code	Weld Metal Size	Mold Sealer Type
6	SHEA-6A-D	1	45	
4	SHEA-4A-D	1	45	
2	SHEA-2A-D	1	45	
2 SOL	SHEA-2AS-D	1	45	
1	SHEA-1A-D	1	65	DX-3
1/0	SHEA-1/0A-D	3	90	DX-3
2/0	SHEA-2/0A-D	3	90	DX-3
3/0	SHEA-3/0A-D	3	115	DX-3
4/0	SHEA-4/0A-D	3	115	DX-3
250	SHEA-250A-D	3	150	DX-3
300	SHEA-300A-D	3	200	DX-3
350	SHEA-350A-D	3	200	DX-3
500	SHEA-500A-D	3	250	DX-3







Cable To Pipe

- SHEA Mold comes with an integrated handle and frame.
- When welding onto pipes, the CL-3CH Chain Handle Clamp (pg. 120-122) will help hold the molds in position.
- If welding onto pipe, please substitute "D" with the appropriate pipe diameter in inches when ordering.
- If welding to copper tube/pipe, please supply OD (Outer Diameter) as measured.
- For Price Code #1 Molds, please contact your representative.
- For more information on required tools and accessories, see Page 120-122.

SHEB Mold

A	Part Number	Price Code	Handle Clamp	Weld Metal Size
6	SHEB-6A	1	CL-3	45
4	SHEB-4A	1	CL-3	45
2	SHEB-2A	1	CL-3	45
2 SOL	SHEB-2AS	1	CL-3	45
1	SHEB-1A	1	CL-3	65
1/0	SHEB-1/0A	3	CL-3	90
2/0	SHEB-2/0A	3	CL-3	115
3/0	SHEB-3/0A	3	CL-3	115
4/0	SHEB-4/0A	3	CL-3	115
250	SHEB-250A	3	CL-3	115
300	SHEB-300A	3	CL-3	150
350	SHEB-350A	3	CL-3	200
500	SHEB-500A	3	CL-3	200
750	SHEB-750A	4	CL-4	2 X 150

A	Part Number	Price Code	Handle Clamp	Weld Metal Size
6	SHEB-6A-D	1	CL-3	45
4	SHEB-4A-D	1	CL-3	45
2	SHEB-2A-D	1	CL-3	45
2 SOL	SHEB-2AS-D	1	CL-3	45
1	SHEB-1A-D	1	CL-3	65
1/0	SHEB-1/0A-D	3	CL-3	90
2/0	SHEB-2/0A-D	3	CL-3	115
3/0	SHEB-3/0A-D	3	CL-3	115
4/0	SHEB-4/0A-D	3	CL-3	115
250	SHEB-250A-D	3	CL-3	115
300	SHEB-300A-D	3	CL-3	150
350	SHEB-350A-D	3	CL-3	200
500	SHEB-500A-D	3	CL-3	200
750	SHEB-750A-D	4	CL-4	2 X 150

A





Cable To Pipe

- When welding onto pipes, the **CL-3CH** Chain Handle Clamp (pg. 120-122) will help hold the molds in position.
- If welding onto pipe, please substitute "D" with the appropriate pipe diameter in inches when ordering.
- If welding to copper tube/pipe, please supply OD (Outer Diameter) as measured.
- For Price Code #1 Molds, please contact your representative.
- For more information on required tools and accessories, see Page 120-122.

SHTA Mold

А	Part Number	Price Code	Weld Metal Size	Mold Sealer Type
6	SHTA-6A	1	45	
4	SHTA-4A	1	45	
2	SHTA-2A	1	45	
2 SOL	SHTA-2AS	1	45	
1	SHTA-1A	1	65	DX-3
1/0	SHTA-1/0A	3	90	DX-3
2/0	SHTA-2/0A	3	115	DX-3
3/0	SHTA-3/0A	3	115	DX-3
4/0	SHTA-4/0A	3	150	DX-3
250	SHTA-250A	3	150	DX-3
300	SHTA-300A	3	250	DX-3
350	SHTA-350A	4	2 X 150	DX-3
500	SHTA-500A	4	2 X 200	DX-3

А	Part Number	Price Code	Weld Metal Size	Mold Sealer Type
6	SHTA-6A-D	1	45	
4	SHTA-4A-D	1	45	
2	SHTA-2A-D	1	45	
2 SOL	SHTA-2AS-D	1	45	
1	SHTA-1A-D	1	65	DX-3
1/0	SHTA-1/0A-D	3	90	DX-3
2/0	SHTA-2/0A-D	3	115	DX-3
3/0	SHTA-3/0A-D	3	115	DX-3
4/0	SHTA-4/0A-D	3	150	DX-3
250	SHTA-250A-D	3	150	DX-3
300	SHTA-300A-D	3	250	DX-3
350	SHTA-350A-D	4	2 X 150	DX-3
500	SHTA-500A-D	4	2 X 200	DX-3







Cable To Pipe

- SHTA Mold comes with an integrated handle and frame.
- When welding onto pipes, the **CL-3CH** Chain Handle Clamp (pg. 120-122) will help hold the molds in position.
- If welding onto pipe, please substitute "D" with the appropriate pipe diameter in inches when ordering.
- If welding to copper tube/pipe, please supply OD (Outer Diameter) as measured.
- For Price Code #1 Molds, please contact your representative.
- For more information on required tools and accessories, see Page 120-122.

SHTB Mold

A	Part Number	Price Code	Handle Clamp	Weld Metal Size
6	SHTB-6A	1	CL-3	45
4	SHTB-4A	1	CL-3	45
2	SHTB-2A	1	CL-3	65
2 SOL	SHTB-2AS	1	CL-3	65
1	SHTB-1A	1	CL-3	90
1/0	SHTB-1/0A	3	CL-3	90
2/0	SHTB-2/0A	3	CL-3	115
3/0	SHTB-3/0A	3	CL-3	115
4/0	SHTB-4/0A	3	CL-3	150
250	SHTB-250A	3	CL-3	200
300	SHTB-300A	3	CL-3	200
350	SHTB-350A	3	CL-3	250
500	SHTB-500A	4	CL-4	2 X 150
750	SHTB-750A	4	CL-4	2 X 200

А	Part Number	Price Code	Handle Clamp	Weld Metal Size
6	SHTB-6A-D	1	CL-3	45
4	SHTB-4A-D	1	CL-3	45
2	SHTB-2A-D	1	CL-3	65
2 SOL	SHTB-2AS-D	1	CL-3	65
1	SHTB-1A-D	1	CL-3	90
1/0	SHTB-1/0A-D	3	CL-3	90
2/0	SHTB-2/0A-D	3	CL-3	115
3/0	SHTB-3/0A-D	3	CL-3	115
4/0	SHTB-4/0A-D	3	CL-3	150
250	SHTB-250A-D	3	CL-3	200
300	SHTB-300A-D	3	CL-3	200
350	SHTB-350A-D	3	CL-3	250
500	SHTB-500A-D	4	CL-4	2 X 150
750	SHTB-750A-D	4	CL-4	2 X 200







Cable To Pipe

- When welding onto pipes, the **CL-3CH** Chain Handle Clamp (pg. 120-122) will help hold the molds in position.
- If welding onto pipe, please substitute "D" with the appropriate pipe diameter in inches when ordering.
- If welding to copper tube/pipe, please supply OD (Outer Diameter) as measured.
- For Price Code #1 Molds, please contact your representative.
- For more information on required tools and accessories, see Page 120-122.

EXOTHERMIC WELDING EQUIPMENT CATALOG

SVES Mold

A	Part Number	Price Code	Handle Clamp	Weld Metal Size
6	SVES-6A	3	CL-3	45
4	SVES-4A	3	CL-3	45
2	SVES-2A	3	CL-3	45
2 SOL	SVES-2AS	3	CL-3	45
1	SVES-1A	3	CL-3	65
1/0	SVES-1/0A	3	CL-3	90
2/0	SVES-2/0A	3	CL-3	90
3/0	SVES-3/0A	3	CL-3	115
4/0	SVES-4/0A	3	CL-3	115
250	SVES-250A	3	CL-3	115
300	SVES-300A	3	CL-3	150
350	SVES-350A	3	CL-3	200
500	SVES-500A	3	CL-3	200
750	SVES-750A	4	CL-4	2 X 150

A	Part Number	Price Code	Handle Clamp	Weld Metal Size
6	SVES-6A-D	3	CL-3	45
4	SVES-4A-D	3	CL-3	45
2	SVES-2A-D	3	CL-3	45
2 SOL	SOL SVES-2AS-D		CL-3	45
1	SVES-1A-D	3	CL-3	65
1/0	SVES-1/0A-D	3	CL-3	90
2/0	SVES-2/0A-D	3	CL-3	90
3/0	SVES-3/0A-D	3	CL-3	115
4/0	SVES-4/0A-D	3	CL-3	115
250	SVES-250A-D	3	CL-3	115
300	SVES-300A-D	3	CL-3	150
350	SVES-350A-D	3	CL-3	200
500	SVES-500A-D	3	CL-3	200
750	SVES-750A-D	4	CL-4	2 X 150





Cable To Pipe

- When welding on flat surfaces, the optional C-clamp attachment (pg. 120-122) will simplify the positioning and operation of these molds.
- When welding onto pipes, the **CL-3CV** Chain Handle Clamp (pg. 120-122) will help hold the molds in position.
- If welding onto pipe, please substitute "D" with the appropriate pipe diameter in inches or mm when ordering.
- If welding to copper tube/pipe, please supply OD (Outer Diameter) as measured.
- For more information on required tools and accessories, see Page 120-122.

SVED Mold

А	Part Number	Price Code	Handle Clamp	Weld Metal Size
6	SVED-6A	3	CL-3	45
4	SVED-4A	3	CL-3	65
2	SVED-2A	3	CL-3	65
2 SOL	SVED-2AS	3	CL-3	65
1	SVED-1A	3	CL-3	90
1/0	SVED-1/0A	3	CL-3	115
2/0	SVED-2/0A	3	CL-3	115
3/0	SVED-3/0A	3	CL-3	150
4/0	SVED-4/0A	3	CL-3	150
250	SVED-250A	3	CL-3	200
300	SVED-300A	3	CL-3	200
350	SVED-350A	3	CL-3	250
500	SVED-500A	4	CL-4	2 X 150
750	SVED-750A	4	CL-4	2 X 200









Cable To Pipe

- When welding on flat surfaces, the optional C-clamp attachment (pg. 120-122) will simplify the positioning and operation of these molds.
- When welding onto pipes, the **CL-3CV** Chain Handle Clamp (pg. 120-122) will help hold the molds in position.
- If welding onto pipe, please substitute "D" with the appropriate pipe diameter in inches when ordering.
- If welding to copper tube/pipe, please supply OD (Outer Diameter) as measured.
- Molds can be ordered to fit 1.5" to 4" diameter pipes. Please use1.5-4 in place of -D in the part number. Example: SVEU-4/0A-1.5-4
- For more information on required tools and accessories, see Page 120-122.

EXOTHERMIC WELDING EQUIPMENT CATALOG

SVEU Mold

A	Part Number	Price Code	Handle Clamp	Weld Metal Size
6	SVEU-6A	3	CL-3	45
4	SVEU-4A	3	CL-3	65
2	SVEU-2A	3	CL-3	65
2 SOL	SVEU-2AS	3 CL-3		65
1	SVEU-1A	3	CL-3	90
1/0	SVEU-1/0A	3	CL-3	115
2/0	SVEU-2/0A	3	CL-3	115
3/0	SVEU-3/0A	3	CL-3	150
4/0	SVEU-4/0A	3	CL-3	150
250	SVEU-250A	3	CL-3	200
300	SVEU-300A	3	CL-3	200
350	SVEU-350A	3	CL-3	250
500	SVEU-500A	4	CL-4	2 X 150
750	SVEU-750A	4	CL-4	2 X 200

A	Part Number	Price Code	Handle Clamp	Weld Metal Size
6	SVEU-6A-D	3	CL-3	45
4	SVEU-4A-D	3	CL-3	65
2	SVEU-2A-D	3	CL-3	65
2 SOL	SVEU-2AS-D	3	CL-3	65
1	SVEU-1A-D	3	CL-3	90
1/0	SVEU-1/0A-D	3	CL-3	115
2/0	SVEU-2/0A-D	3	CL-3	115
3/0	SVEU-3/0A-D	-D 3	CL-3	150
4/0	SVEU-4/0A-D	3	CL-3	150
250	SVEU-250A-D	3	CL-3	200
300	SVEU-300A-D	3	CL-3	200
350	SVEU-350A-D	3	CL-3	250
500	SVEU-500A-D	4	CL-4	2 X 150
750	SVEU-750A-D	4	CL-4	2 X 200

NOTE

- When welding on flat surfaces, the optional C-clamp attachment (pg. 120-122) will simplify the positioning and operation of these molds.
- When welding onto pipes, the **CL-3CV** Chain Handle Clamp (pg. 120-122) will help hold the molds in position.
- If welding onto pipe, please substitute "D" with the appropriate pipe diameter in inches or mm when ordering.
- If welding to copper tube/pipe, please supply OD (Outer Diameter) as measured.
- For more information on required tools and accessories, see Page 120-122.





Cable To Pipe

SVTV Mold

A	Part Number	Price Code	Handle Clamp	Weld Metal Size
6	SVTV-6A	3	CL-3	65
4	SVTV-4A	3	CL-3	90
2	SVTV-2A	3	CL-3	115
2 SOL	SVTV-2AS	3	CL-3	115
1	SVTV-1A	3	CL-3	115
1/0	SVTV-1/0A	3	CL-3	200
2/0	SVTV-2/0A	3	CL-3	200
3/0	SVTV-3/0A	3	CL-3	250
4/0	SVTV-4/0A	3	CL-3	250
250	SVTV-250A	3	CL-3	250
300	SVTV-300A	4	CL-4	2 X 115
350	SVTV-350A	4	CL-4	2 X 150
500	SVTV-500A	4	CL-4	2 X 200
750	SVTV-750A	4	CL-4	2 X 250





A	Part Number	Price Code	Handle Clamp	Weld Metal Size
6	SVTV-6A-D	3	CL-3	65
4	SVTV-4A-D	3	CL-3	90
2	SVTV-2A-D	3	CL-3	115
2 SOL	SVTV-2AS-D	3	CL-3	115
1	SVTV-1A-D	3	CL-3	115
1/0	SVTV-1/0A-D	3	CL-3	200
2/0	SVTV-2/0A-D	3	CL-3	200
3/0	SVTV-3/0A-D	3	CL-3	250
4/0	SVTV-4/0A-D	3	CL-3	250
250	SVTV-250A-D	3	CL-3	250
300	SVTV-300A-D	4	CL-4	2 X 115
350	SVTV-350A-D	4	CL-4	2 X 150
500	SVTV-500A-D	4	CL-4	2 X 200
750	SVTV-750A-D	4	CL-4	2 X 250



- When welding on flat surfaces, the optional C-clamp attachment (pg. 120-122) will simplify the positioning and operation of these molds.
- When welding onto pipes, the **CL-3CV** Chain Handle Clamp (pg. 120-122) will help hold the molds in position.
- If welding onto pipe, please substitute "D" with the appropriate pipe diameter in inches or mm when ordering.
- If welding to copper tube/pipe, please supply OD (Outer Diameter) as measured.
- For more information on required tools and accessories, see Page 120-122.

SVTHA Mold

A	Part Number	Price Code	Handle Clamp	Weld Metal Size	Mold Sealer Type
6	SVTHA-6A	3	CL-3	45	
4	SVTHA-4A	3	CL-3	45	
2 SOL	SVTHA-2AS	3	CL-3	45	
2	SVTHA-2A	3	CL-3	45	
1	SVTHA-1A	3	CL-3	65	DX-3
1/0	SVTHA-1/0A	3	CL-3	115	DX-3
2/0	SVTHA-2/0A	3	CL-3	115	DX-3
3/0	SVTHA-3/0A	3	CL-3	150	DX-3
4/0	SVTHA-4/0A	3	CL-3	150	DX-3
250	SVTHA-250A	3	CL-3	150	DX-3
300	SVTHA-300A	3	CL-3	200	DX-3
350	SVTHA-350A	3	CL-3	200	DX-3





A	Part Number	Price Code	Handle Clamp	Weld Metal Size	Mold Sealer Type
6	SVTHA-6A-D	3	CL-3	45	
4	SVTHA-4A-D	3	CL-3	45	
2 SOL	SVTHA-2A-D	3	CL-3	45	
2	SVTHA-2AS-D	3	CL-3	45	
1	SVTHA-1A-D	3	CL-3	65	DX-3
1/0	SVTHA-1/0A-D	3	CL-3	115	DX-3
2/0	SVTHA-2/0A-D	3	CL-3	115	DX-3
3/0	SVTHA-3/0A-D	3	CL-3	150	DX-3
4/0	SVTHA-4/0A-D	3	CL-3	150	DX-3
250	SVTHA-250A-D	3	CL-3	150	DX-3
300	SVTHA-300A-D	3	CL-3	200	DX-3
350	SVTHA-350A-D	3	CL-3	200	DX-3



Cable To Pipe *Conductor is flat against steel surface.

- When welding on flat surfaces, the optional C-clamp attachment (pg. 120-122) will simplify the positioning and operation of these molds.
- When welding onto pipes, the **CL-3CV** Chain Handle Clamp (pg. 120-122) will help hold the molds in position.
- If welding onto pipe, please substitute "D" with the appropriate pipe diameter in inches when ordering.
- If welding to copper tube/pipe, please supply OD (Outer Diameter) as measured.
- Molds can be ordered to fit 1.5" to 4" diameter pipes. Please use 1.5-4 in place of -D in the part number. Example: SVES-4/0A-1.5-4
- For more information on required tools and accessories, see Page 120-122.

SVTHB Mold

A	Part Number	Price Code	Handle Clamp	Weld Metal Size
6	SVTHB-6A	3	CL-3	65
4	SVTHB-4A	3	CL-3	65
2 SOL	SVTHB-2AS	3	3 CL-3	
2	SVTHB-2A	3	CL-3	65
1	SVTHB-1A	3	CL-3	90
1/0	SVTHB-1/0A	3	CL-3	115
2/0	SVTHB-2/0A	3	CL-3	115
3/0	SVTHB-3/0A	3	CL-3	150
4/0	SVTHB-4/0A	3	CL-3	150
250	SVTHB-250A	3	CL-3	150
300	SVTHB-300A	3	CL-3	200
350	SVTHB-350A	3	CL-3	250

A	Part Number	Price Code	Handle Clamp	Weld Metal Size
6	SVTHB-6A-D	3	CL-3	65
4	SVTHB-4A-D	3	CL-3	65
2 SOL	SVTHB-2A-D	3	CL-3	65
2	SVTHB-2AS-D	3	CL-3	65
1	SVTHB-1A-D	3	CL-3	90
1/0	SVTHB-1/0A-D	3	CL-3	115
2/0	SVTHB-2/0A-D	3	CL-3	115
3/0	SVTHB-3/0A-D	3	CL-3	150
4/0	SVTHB-4/0A-D	3	CL-3	150
250	SVTHB-250A-D	3	CL-3	150
300	SVTHB-300A-D	3	CL-3	200
350	SVTHB-350A-D	3	CL -3	250







Cable To Pipe

*Conductor is raised off of steel surface.

- When welding on flat surfaces, the optional C-clamp attachment (pg. 120-122) will simplify the positioning and operation of these molds.
- When welding onto pipes, the **CL-3CV** Chain Handle Clamp (pg. 120-122) will help hold the molds in position.
- If welding onto pipe, please substitute "D" with the appropriate pipe diameter in inches or mm when ordering.
- If welding to copper tube/pipe, please supply OD (Outer Diameter) as measured.
- The part numbers for the range of mold types are just a suffix with the diameter range. i.e. SVES-95-1-4 (SVES 95mm² wire for pipes 1" dia 4" dia.).
- For more information on required tools and accessories, see Page 120-122.

SVEH Mold

А	Part Number	Price Code	Handle Clamp	Weld Metal Size	Mold Sealer Type
6	SVEH-6A-L/R	3	CL-3	45	
4	SVEH-4A-L/R	3	CL-3	45	
2 SOL	SVEH-2AS-L/R	3	CL-3	45	
2	SVEH-2A-L/R	3	CL-3	45	
1	SVEH-1A-L/R	3	CL-3	65	
1/0	SVEH-1/0A-L/R	3	CL-3	90	DX-3
2/0	SVEH-2/0A-L/R	3	CL-3	115	DX-3
3/0	SVEH-3/0A-L/R	3	CL-3	115	DX-3
4/0	SVEH-4/0A-L/R	3	CL-3	115	DX-3
250	SVEH-250A-L/R	3	CL-3	150	DX-3
300	SVEH-300A-L/R	3	CL-3	200	DX-3
350	SVEH-350A-L/R	3	CL-3	200	DX-3





A	Part Number	Price Code	Handle Clamp	Weld Metal Size	Mold Sealer Type
6	SVEH-6A-L/R-D	3	CL-3	45	
4	SVEH-4A-L/R-D	3	CL-3	45	
2 SOL	SVEH-2A-L/R-D	3	CL-3	45	
2	SVEH-2AS-L/R-D	3	CL-3	45	
1	SVEH-1A-L/R-D	3	CL-3	65	
1/0	SVEH-1/0A-L/R-D	3	CL-3	90	DX-3
2/0	SVEH-2/0A-L/R-D	3	CL-3	115	DX-3
3/0	SVEH-3/0A-L/R-D	3	CL-3	115	DX-3
4/0	SVEH-4/0A-L/R-D	3	CL-3	115	DX-3
250	SVEH-250A-L/R-D	3	CL-3	150	DX-3
300	SVEH-300A-L/R-D	3	CL-3	200	DX-3
350	SVEH-350A-L/R-D	3	CL-3	200	DX-3



Cable To Pipe

- When welding on flat surfaces, the optional C-clamp attachment (pg. 120-122) will simplify the positioning and operation of these molds.
- When welding onto pipes, the **CL-3CV** Chain Handle Clamp (pg. 120-122) will help hold the molds in position.
- If welding onto pipe, please substitute "D" with the appropriate pipe diameter in inches when ordering.
- If welding to copper tube/pipe, please supply OD (Outer Diameter) as measured.
- Molds can be ordered to fit 1.5" to 4" diameter pipes. Please use1.5-4 in place of -D in the part number. Example: SVED-4/0A-1.5-4
- For more information on required tools and accessories, see Page 120-122.

Rebar Connections

RHEH Mold

A	В	Part Number	Price Code	Handle Clamp	Weld Metal Size	Mold Sealer Type
	6	RHEH-#3-6A	3	CL-3	25	
	4	RHEH-#3-4A	3	CL-3	32	
	2 SOL	RHEH-#3-2AS	3	CL-3	45	
	2	RHEH-#3-2A	3	CL-3	45	
3	1	RHEH-#3-1A	3	CL-3	65	
	1/0	RHEH-#3-1/0A	3	CL-3	90	
	2/0	RHEH-#3-2/0A	3	CL-3	90	
	3/0	RHEH-#3-3/0A	3	CL-3	115	
	4/0	RHEH-#3-4/0A	3	CL-3	115	
	6	RHEH-#4-6A	3	CL-3	25	DX-4
	4	RHEH-#4-4A	3	CL-3	32	DX-4
	2 SOL	RHEH-#4-2AS	3	CL-3	45	DX-4
	2	RHEH-#4-2A	3	CL-3	45	DX-4
4	1	RHEH-#4-1A	3	CL-3	65	DX-4
	1/0	RHEH-#4-1/0A	3	CL-3	90	DX-4
	2/0	RHEH-#4-2/0A	3	CL-3	90	DX-4
	3/0	RHEH-#4-3/0A	3	CL-3	115	DX-4
	4/0		3	0L-3	115	DX-4
	0		<u> </u>	CL-3	20	
	2 5 0		3		32	
	2 30L	RHEH_#5-2A	3		45	DX-4
5	<u> </u>	RHEH_#5-1A	3		4J 65	DX-4
5	1/0	RHFH_#5_1/0A	3	CL-3	90	DX-4
	2/0	BHEH-#5-2/0A	3	CL -3	90	DX-4
	3/0	BHEH-#5-3/0A	3	CL -3	115	DX-4
	4/0	BHEH-#5-4/0A	3	CL -3	115	DX-4
	6	RHEH-#6-6A	3	CL-3	25	DX-4
	4	RHEH-#6-4A	3	CL-3	32	DX-4
	2 SOL	RHEH-#6-2AS	3	CL-3	45	DX-4
	2	RHEH-#6-2A	3	CL-3	45	DX-4
6	1	RHEH-#6-1A	3	CL-3	65	DX-4
	1/0	RHEH-#6-1/0A	3	CL-3	90	DX-4
	2/0	RHEH-#6-2/0A	3	CL-3	90	DX-4
	3/0	RHEH-#6-3/0A	3	CL-3	115	DX-4
	4/0	RHEH-#6-4/0A	3	CL-3	115	DX-4
	4	RHEH-#7-4A	3	CL-3	32	DX-4
	2 SOL	RHEH-#7-2AS	3	CL-3	45	DX-4
	2	RHEH-#7-2A	3	CL-3	45	DX-4
7	1	RHEH-#7-1A	3	CL-3	65	DX-4
'	1/0	RHEH-#7-1/0A	3	CL-3	90	DX-4
	2/0	RHEH-#7-2/0A	3	CL-3	90	DX-4
	3/0	RHEH-#7-3/0A	3	CL-3	115	DX-4
	4/0	RHEH-#7-4/0A	3	CL-3	115	DX-4



Connections To Rebars

- DX-3 mold sealer or DX-4 packing material may be used to overcome weld metal leakage due to rebar surface irregularities.
- Please contact your representative for details.
- For more information on required tools and accessories,
- see Page 120-122.

RHXH Mold

A	в	Part Number	Price Code	Handle Clamp	Weld Metal Size	Mold Sealer Type
	6	RHXH-#3-6A	5	CL-3	65	DX-4
	4	RHXH-#3-4A	5	CL-3	65	DX-4
	2 SOL	RHXH-#3-2AS	5	CL-3	90	DX-4
	2	RHXH-#3-2A	5	CL-3	90	DX-4
3	1	RHXH-#3-1A	5	CL-3	90	DX-4
	1/0	RHXH-#3-1/0A	5	CL-3	115	DX-4
	2/0	RHXH-#3-2/0A	5	CL-3	115	DX-4
	3/0	RHXH-#3-3/0A	5	CL-3	150	DX-4
	4/0	RHXH-#3-4/0A	5	CL-3	150	DX-4
	6	RHXH-#4-6A	5	CL-3	65	DX-4
	4	RHXH-#4-4A	5	CL-3	65	DX-4
	2 SOL	RHXH-#4-2AS	5	0L-3	90	DX-4
4	2	RHXH-#4-2A	5	CL-3	90	DX-4
4	1/0		5 F	CL-3	90	DX-4
	2/0		5	CL-3	115	DX-4
	2/0		5	CL-3	150	DX-4
	3/0		5		150	
	6	RHYH_#5_6A	5		65	DX-4
	4	RHYH_#5_4A	5		65	DX-4
	2.501	BHXH-#5-2ΔS	5	CL-3	90	DX-4
	2 000	BHXH-#5-2A	5	CL-3	90	DX-4
5	1	BHXH-#5-1A	5	CL -3	90	DX-4
	1/0	BHXH-#5-1/0A	5	CL-3	115	DX-4
	2/0	BHXH-#5-2/0A	5	CL -3	115	DX-4
	3/0	RHXH-#5-3/0A	5	CL-3	150	DX-4
	4/0	RHXH-#5-4/0A	5	CL-3	150	DX-4
	6	RHXH-#6-6A	5	CL-3	65	DX-4
	4	RHXH-#6-4A	5	CL-3	65	DX-4
	2 SOL	RHXH-#6-2AS	5	CL-3	90	DX-4
	2	RHXH-#6-2A	5	CL-3	90	DX-4
6	1	RHXH-#6-1A	5	CL-3	90	DX-4
	1/0	RHXH-#6-1/0A	6	CL-3	115	DX-4
	2/0	RHXH-#6-2/0A	6	CL-3	115	DX-4
	3/0	RHXH-#6-3/0A	6	CL-3	150	DX-4
	4/0	RHXH-#6-4/0A	6	CL-3	150	DX-4
	4	RHXH-#7-4A	9	CL-3	65	DX-4
	2 SOL	RHXH-#7-2AS	9	CL-3	90	DX-4
	2	RHXH-#7-2A	9	CL-3	90	DX-4
7	1	RHXH-#7-1A	9	CL-3	90	DX-4
.	1/0	RHXH-#7-1/0A	9	CL-3	115	DX-4
	2/0	RHXH-#7-2/0A	9	CL-3	115	DX-4
	3/0	RHXH-#7-3/0A	9	CL-4	150	DX-4
	4/0	RHXH-#7-4/0A	9	CL-4	150	DX-4



Connections To Rebars

- DX-3 mold sealer or DX-4 packing material may be used to overcome weld metal leakage due to rebar surface irregularities.
- For Price Code #9 Molds, please contact your representative.
- Please contact your representative for details.
- For more information on required tools and accessories,
- see Page 120-122.

RVXH Mold

А	В	Part Number	Price Code	Handle Clamp	Weld Metal Size	Mold Sealer Type
	6	BVXH-#3-6A	7	CL-3	90	DX-4
	4	RVXH-#3-4A	7	CL-3	90	DX-4
	2 SOL	RVXH-#3-2AS	7	CL-3	90	DX-4
	2	RVXH-#3-2A	7	CL-3	90	DX-4
3	1	RVXH-#3-1A	7	CL-3	115	DX-4
	1/0	RVXH-#3-1/0A	7	CL-3	115	DX-4
	2/0	RVXH-#3-2/0A	7	CL-3	115	DX-4
	3/0	RVXH-#3-3/0A	(CL-3	150	DX-4
	4/0	RVXH-#3-4/0A	7	CL-3	150	DX-4
	0	RVXH-#4-6A	7	CL-3	90	DX-4
	2.501	RVXH-#4-4A	7	CL-3	90	DX-4
	2 00L	RVXH-#4-2A	7	CL-3	90	DX-4
4	1	RVXH-#4-1A	7	CL-3	115	DX-4
	1/0	RVXH-#4-1/0A	7	CL-3	115	DX-4
	2/0	RVXH-#4-2/0A	7	CL-3	115	DX-4
	3/0	RVXH-#4-3/0A	7	CL-3	150	DX-4
	4/0	RVXH-#4-4/0A	7	CL-3	150	DX-4
	6	RVXH-#5-6A	7	CL-3	90	DX-4
	4	RVXH-#5-4A	7	CL-3	90	DX-4
	2 SOL	RVXH-#5-2AS	(CL-3	90	DX-4
F	- 2	RVXH-#5-2A	7	0L-3	90	DX-4
Э	1/0		7		115	DX-4
	2/0	BVXH-#5-2/0A	7	CL-3	115	DX-4
	3/0	BVXH-#5-3/0A	7	CL-3	150	DX-4
	4/0	RVXH-#5-4/0A	7	CL-3	150	DX-4
	6	RVXH-#6-6A	7	CL-3	90	DX-4
	4	RVXH-#6-4A	7	CL-3	90	DX-4
	2 SOL	RVXH-#6-2AS	7	CL-3	90	DX-4
	2	RVXH-#6-2A	7	CL-3	90	DX-4
6	1	RVXH-#6-1A	7	CL-3	115	DX-4
	1/0	RVXH-#6-1/0A	7	CL-3	115	DX-4
	2/0	RVXH-#6-2/0A	7	0L-3	115	DX-4
	3/0	RVAH-#0-3/UA	7		150	DX-4
	4/0	R\/XH_#7_/Δ	7	CL-3	90 90	DX-4
	2 501	BVXH-#7-2AS	7	CL-3	90	DX-4
	2	RVXH-#7-2A	7	CL-3	90	DX-4
-	1	RVXH-#7-1A	7	CL-3	115	DX-4
/	1/0	RVXH-#7-1/0A	7	CL-3	115	DX-4
	2/0	RVXH-#7-2/0A	7	CL-3	115	DX-4
	3/0	RVXH-#7-3/0A	7	CL-3	150	DX-4
	4/0	RVXH-#7-4/0A	7	CL-3	150	DX-4



Connections To Rebars

- DX-3 mold sealer or DX-4 packing material may be used to overcome weld metal leakage due to rebar surface irregularities.
- Please contact your representative for details.
- For more information on required tools and accessories,
- see Page 120-122.

RVCT Mold

A	в	Part Number	Price Code	Handle Clamp	Weld Metal Size	Mold Sealer Type
	6	RVCT-#3-6A	3	CL-3	32	DX-4
	4	RVCT-#3-4A	3	CL-3	32	DX-4
	2 SOL	RVCT-#3-2AS	3	CL-3	90	DX-4
	2	RVCT-#3-2A	3	CL-3	90	DX-4
3	1	RVCT-#3-1A	3	CL-3	90	DX-4
	1/0	RVCT-#3-1/0A	3	CL-3	90	DX-4
	2/0	RVCT-#3-2/0A	3	CL-3	90	DX-4
	3/0	RVCT-#3-3/0A	3	CL-3	115	DX-4
	4/0	RVCT-#3-4/0A	3	CL-3	115	DX-4
	6	RVCT-#4-6A	3	CL-3	32	DX-4
	4	RVCT-#4-4A	3	CL-3	32	DX-4
	2 SOL	RVCT-#4-2AS	3	CL-3	90	DX-4
	2	RVCT-#4-2A	3	CL-3	90	DX-4
4	1	RVCT-#4-1A	3	CL-3	90	DX-4
	1/0	RVCT-#4-1/0A	3	CL-3	90	DX-4
	2/0	RVCT-#4-2/0A	3	CL-3	90	DX-4
	3/0	RVCT-#4-3/0A	3	CL-3	115	DX-4
	4/0	RVCT-#4-4/0A	3	CL-3	115	DX-4
	6	RVCT-#5-6A	3	CL-3	32	DX-4
	4	RVCT-#5-4A	3	CL-3	32	DX-4
	2 SOL	RVCT-#5-2AS	3	CL-3	90	DX-4
	2	RVCT-#5-2A	3	CL-3	90	DX-4
5	1	RVCT-#5-1A	3	CL-3	90	DX-4
	1/0	RVCT-#5-1/0A	3	CL-3	115	DX-4
	2/0	RVCT-#5-2/0A	3	CL-3	115	DX-4
	3/0	RVCT-#5-3/0A	3	CL-3	115	DX-4
	4/0	RVCT-#5-4/0A	3	CL-3	115	DX-4
	6	RVCT-#6-6A	3	CL-3	90	DX-4
	4	RVCT-#6-4A	3	CL-3	90	DX-4
	2 SOL	RVCT-#6-2AS	3	CL-3	90	DX-4
	2	RVCT-#6-2A	3	CL-3	90	DX-4
6	1	RVCT-#6-1A	3	CL-3	115	DX-4
	1/0	RVCT-#6-1/0A	3	CL-3	115	DX-4
	2/0	RVCT-#6-2/0A	3	CL-3	115	DX-4
	3/0	RVCT-#6-3/0A	3	CL-3	150	DX-4
	4/0	RVCT-#6-4/0A	3	CL-3	150	DX-4



Connections To Rebars

- DX-3 mold sealer or DX-4 packing material may be used to overcome weld metal leakage due to rebar surface irregularities.
- Please contact your representative for details.
- For more information on required tools and accessories,
- see Page 120-122.

Bus Bar & Terminal Lug Connections

PK Mold

A	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
4	1 X 1/8	PK-4A-1 X 0.13	3	CL-3	45
2 SOL	1 X 1/8	PK-2AS-1 X 0.13	3	CL-3	45
2	1 X 1/8	PK-2A-1 X 0.13	3	CL-3	45
1	1 X 1/8	PK-1A-1 X 0.13	3	CL-3	45
1/0	1 X 1/8	PK-1/0A-1 X 0.13	3	CL-3	45
1/0	1 X 3/16	PK-1/0A-1 X 0.19	3	CL-3	65
1/0	1 X 1/4	PK-1/0A-1 X 0.25	3	CL-3	65
2/0	1 X 1/8	PK-2/0A-1 X 0.13	3	CL-3	65
2/0	1 X 3/16	PK-2/0A-1 X 0.19	3	CL-3	65
2/0	1 X 1/4	PK-2/0A-1 X 0.25	3	CL-3	65
3/0	1 X 1/8	PK-3/0A-1 X 0.13	3	CL-3	65
3/0	1 X 3/16	PK-3/0A-1 X 0.19	3	CL-3	90
3/0	1 X 1/4	PK-3/0A-1 X 0.25	3	CL-3	90
4/0	1 X 3/16	PK-4/0A-1 X 0.19	3	CL-3	90
4/0	1 X 1/4	PK-4/0A-1 X 0.25	3	CL-3	90
4/0	1 1/2 X 1/4	PK-4/0A-1.5 X 0.25	3	CL-3	90
4/0	2 X 1/4	PK-4/0A-2 X 0.25	3	CL-3	90
4/0	3 X 1/4	PK-4/0A-3 X 0.25	3	CL-3	90
250	1 X 3/16	PK-250A-1 X 0.19	3	CL-3	90
250	1 X 1/4	PK-250A-1 X 0.25	3	CL-3	90
250	1 1/2 X 1/4	PK-250A-1.5 X 0.25	3	CL-3	90
250	2 X 1/4	PK-250A-2 X 0.25	3	CL-3	90
250	3 X 1/4	PK-250A-3 X 0.25	3	CL-3	90
300	1 X 1/4	PK-300A-1 X 0.25	3	CL-3	90
300	1 1/2 X 1/4	PK-300A-1.5 X 0.25	3	CL-3	90
300	2 X 1/4	PK-300A-2 X 0.25	3	CL-3	90
300	3 X 1/4	PK-300A-3 X 0.25	3	CL-3	90
350	1 X 1/4	PK-350A-1 X 0.25	3	CL-3	115
350	1 1/2 X 1/4	PK-350A-1.5 X 0.25	3	CL-3	115
350	2 X 1/4	PK-350A-2 X 0.25	3	CL-3	115
350	3 X 1/4	PK-350A-3 X 0.25	3	CL-3	115
500	1 1/2 X 1/4	PK-500A-1.5 X 0.25	3	CL-3	200
500	2 X 1/4	PK-500A-2 X 0.25	3	CL-3	200
500	3 X 1/4	PK-500A-3 X 0.25	3	CL-3	200
500	1 1/2 X 3/8	PK-500A-1.5 X 0.38	3	CL-3	200
750	2 X 1/4	PK-750A-2 X 0.25	4	CL-4	2 X 150
750	3 X 1/4	PK-750A-3 X 0.25	4	CL-4	2 X 150
750	1 1/2 X 3/8	PK-750A-1.5 X 0.38	4	CL-4	2 X 150
750	2 X 3/8	PK-750A-2 X 0.38	4	CL-4	2 X 150
750	3 X 3/8	PK-750A-3 X 0.38	4	CL-4	2 X 150
1000	3 X 1/4	PK-1000A-3 X 0.25	4	CL-4	2 X 200
1000	2 X 3/8	PK-1000A-2 X 0.38	4	CL-4	2 X 200
1000	3 X 3/8	PK-1000A-3 X 0.38	4	CL-4	2 X 200
1000	2 X 1/2	PK-1000A-2 X 0.5	4	CL-4	2 X 250
1000	3 X 1/2	PK-1000A-3 X 0.5	4	CL-4	2 X 250



Connection To Bus Bars And Terminal Lugs

- For welding wire/cable to terminal lugs or bus bar end.
- For more information on required tools and accessories, see Page 120-122.

EXOTHERMIC WELDING EQUIPMENT CATALOG

PL Mold

A	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
4	1 X 1/8	PL-4A-1 X 0.13	3	CL-3	45
2 SOL	1 X 1/8	PL-2AS-1 X 0.13	3	CL-3	45
2	1 X 1/8	PL-2A-1 X 0.13	3	CL-3	45
1	1 X 1/8	PL-1A-1 X 0.13	3	CL-3	45
1/0	1 X 1/8	PL-1/0A-1 X 0.13	3	CL-3	45
2/0	1 X 1/8	PL-2/0A-1 X 0.13	3	CL-3	65
3/0	1 X 1/8	PL-3/0A-1 X 0.13	3	CL-3	65
4/0	1 X 3/16	PL-4/0A-1 X 0.19	3	CL-3	90
250	1 X 3/16	PL-250A-1 X 0.19	3	CL-3	90
300	1 X 1/4	PL-300A-1 X 0.25	3	CL-3	90
350	1 X 1/4	PL-350A-1 X 0.25	3	CL-3	115
500	1 1/2 X 1/4	PL-500A-1.5 X 0.25	3	CL-3	200



Connection To Bus Bars And Terminal Lugs

NOTE

- For welding wire/cable to terminal lugs or bus bar end.
- For more information on required tools and accessories, see Page 120-122.

PV Mold

A	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
4	1 X 1/8	PV-4A-1 X 0.13	3	CL-3	45
2 SOL	1 X 1/8	PV-2AS-1 X 0.13	3	CL-3	65
2	1 X 1/8	PV-2A-1 X 0.13	3	CL-3	65
1	1 X 1/8	PV-1A-1 X 0.13	3	CL-3	65
1/0	1 X 1/8	PV-1/0A-1 X 0.13	3	CL-3	65
1/0	1 X 3/16	PV-1/0A-1 X 0.19	3	CL-3	90
1/0	1 X 1/4	PV-1/0A-1 X 0.25	3	CL-3	90
2/0	1 X 1/8	PV-2/0A-1 X 0.13	3	CL-3	90
2/0	1 X 3/16	PV-2/0A-1 X 0.19	3	CL-3	90
2/0	1 X 1/4	PV-2/0A-1 X 0.25	3	CL-3	90
3/0	1 X 1/8	PV-3/0A-1 X 0.13	3	CL-3	90
3/0	1 X 3/16	PV-3/0A-1 X 0.19	3	CL-3	115
3/0	1 X 1/4	PV-3/0A-1 X 0.25	3	CL-3	115
4/0	1 X 3/16	PV-4/0A-1 X 0.19	3	CL-3	115
4/0	1 X 1/4	PV-4/0A-1 X 0.25	3	CL-3	115
4/0	1 1/2 X 1/4	PV-4/0A-1.5 X 0.25	3	CL-3	115
4/0	2 X 1/4	PV-4/0A-2 X 0.25	3	CL-3	115
4/0	3 X 1/4	PV-4/0A-3 X 0.25	3	CL-3	115
250	1 X 3/16	PV-250A-1 X 0.19	3	CL-3	115
250	1 X 1/4	PV-250A-1 X 0.25	3	CL-3	115
250	1 1/2 X 1/4	PV-250A-1.5 X 0.25	3	CL-3	115
250	2 X 1/4	PV-250A-2 X 0.25	3	CL-3	115
250	3 X 1/4	PV-250A-3 X 0.25	3	CL-3	115



Connection To Bus Bars And Terminal Lugs

NOTE

• For more information on required tools and accessories, see Page 120-122.

PT Mold

A	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
4	1/4	PT-4A-0.25	3	CL-3	45
2 SOL	1/4	PT-2AS-0.25	3	CL-3	45
2 SOL	3/8	PT-2AS-0.38	3	CL-3	65
2 SOL	1/2	PT-2AS-0.5	3	CL-3	90
2	1/4	PT-2A-0.25	3	CL-3	45
2	3/8	PT-2A-0.38	3	CL-3	65
2	1/2	PT-2A-0.5	3	CL-3	90
1	1/4	PT-1A-0.25	3	CL-3	65
1	3/8	PT-1A-0.38	3	CL-3	65
1	1/2	PT-1A-0.5	3	CL-3	90
1/0	1/4	PT-1/0A-0.25	3	CL-3	90
1/0	3/8	PT-1/0A-0.38	3	CL-3	90
1/0	1/2	PT-1/0A-0.5	3	CL-3	115
2/0	1/4	PT-2/0A-0.25	3	CL-3	90
2/0	3/8	PT-2/0A-0.38	3	CL-3	90
2/0	1/2	PT-2/0A-0.5	3	CL-3	115
3/0	1/4	PT-3/0A-0.25	3	CL-3	90
3/0	3/8	PT-3/0A-0.38	3	CL-3	115
3/0	1/2	PT-3/0A-0.5	3	CL-3	150
4/0	1/4	PT-4/0A-0.25	3	CL-3	90
4/0	3/8	PT-4/0A-0.38	3	CL-3	115
4/0	1/2	PT-4/0A-0.5	3	CL-3	150
250	1/4	PT-250A-0.25	3	CL-3	115
250	3/8	PT-250A-0.38	3	CL-3	150
250	1/2	PT-250A-0.5	3	CL-3	200
300	1/4	PT-300A-0.25	3	CL-3	115
300	3/8	PT-300A-0.38	3	CL-3	150
300	1/2	PT-300A-0.5	3	CL-3	200
350	1/4	PT-350A-0.25	3	CL-3	150
350	3/8	PT-350A-0.38	3	CL-3	200
350	1/2	PT-350A-0.5	3	CL-3	250
500	1/4	PT-500A-0.25	3	CL-3	200
500	3/8	PT-500A-0.38	3	CL-3	250
500	1/2	PT-500A-0.5	4	CL-4	2 x 150
750	1/4	PT-750A-0.25	4	CL-4	2 x 150
750	3/8	PT-750A-0.38	4	CL-4	2 x 150
750	1/2	PT-750A-0.5	4	CL-4	2 x 200



Connection To Bus Bars And Terminal Lugs

NOTE

• For more information on required tools and accessories, see Page 120-122.

EXOTHERMIC WELDING EQUIPMENT CATALOG

PY Mold

A	В	Part Number	Price Code	Handle Clamp	Weld Metal Size
4	1 X 1/8	PY-4A-1 X 0.13	3	CL-3	45
2 SOL	1 X 1/8	PY-2AS-1 X 0.13	3	CL-3	65
2	1 X 1/8	PY-2A-1 X 0.13	3	CL-3	65
1	1 X 1/8	PY-1A-1 X 0.13	3	CL-3	65
1/0	1 X 1/8	PY-1/0A-1 X 0.13	3	CL-3	90
1/0	1 X 3/16	PY-1/0A-1 X 0.19	3	CL-3	90
1/0	1 X 1/4	PY-1/0A-1 X 0.25	3	CL-3	115
2/0	1 X 1/8	PY-2/0A-1 X 0.13	3	CL-3	90
2/0	1 X 3/16	PY-2/0A-1 X 0.19	3	CL-3	90
2/0	1 X 1/4	PY-2/0A-1 X 0.25	3	CL-3	115
3/0	1 X 1/8	PY-3/0A-1 X 0.13	3	CL-3	115
3/0	1 X 3/16	PY-3/0A-1 X 0.19	3	CL-3	150
3/0	1 X 1/4	PY-3/0A-1 X 0.25	3	CL-3	150
4/0	1 X 3/16	PY-4/0A-1 X 0.19	3	CL-3	150
4/0	1 X 1/4	PY-4/0A-1 X 0.25	3	CL-3	200
4/0	1 1/2 X 1/4	PY-4/0A-1.5 X 0.25	3	CL-3	200
4/0	2 X 1/4	PY-4/0A-2 X 0.25	3	CL-3	200
4/0	3 X 1/4	PY-4/0A-3 X 0.25	4	CL-4	2 X 200



Connection To Bus Bars And Terminal Lugs

NOTE

• For more information on required tools and accessories, see Page 120-122.

Bus Bar Connections

BE Mold

A	Part Number	Price Code	Handle Clamp	Weld Metal Size
1/8 X 1.00	BE-0.13 X 1	3	CL-3	45
X 1.50	BE-0.13 X 1.5	3	CL-3	65
X 2.00	BE-0.13 X 2	3	CL-3	90
X 3.00	BE-0.13 X 3	3	CL-3	200
X 4.00	BE-0.13 X 4	4	CL-4	250
3/16 X 1.00	BE-0.19 X 1	3	CL-3	65
X 2.00	BE-0.19 X 2	3	CL-3	115
1/4 X 1.00	BE-0.25 X 1	3	CL-3	90
X 1.25	BE-0.25 X 1.25	3	CL-3	115
X 1.50	BE-0.25 X 1.5	3	CL-3	150
X 2.00	BE-0.25 X 2	3	CL-3	200
X 2.50	BE-0.25 X 2.5	3	CL-3	250
X 3.00	BE-0.25 X 3	4	CL-4	2 X 200
X 4.00	BE-0.25 X 4	4	CL-4	2 X 250



Bus Bar Connections

NOTE

- End to end connection (Conductors positioned on end).
- Minimum clearance between wall and conductors must be greater than 4 inches. Where minimum clearance is not available, custom mold must be used.
- Additional molds for Rebar Connections, Railway Connections, Steel-to-Strap Connections, etc., are available upon request in various configurations.
- Please contact your representative for details.
- For more information on required tools and accessories, see Page 120-122.

А	Part Number	Price Code	Handle Clamp	Weld Metal Size
1/8 X 1.00	BEH-0.13 X 1	3	CL-3	45
X 1.50	BEH-0.13 X 1.5	3	CL-3	65
X 2.00	BEH-0.13 X 2	3	CL-3	90
X 3.00	BEH-0.13 X 3	3	CL-3	200
X 4.00	BEH-0.13 X 4	4	CL-4	250
3/16 X 1.00	BEH-0.19 X 1	3	CL-3	65
X 2.00	BEH-0.19 X 2	3	CL-3	115
1/4 X 1.00	BEH-0.25 X 1	3	CL-3	90
X 1.25	BEH-0.25 X 1.25	3	CL-3	115
X 1.50	BEH-0.25 X 1.5	3	CL-3	150
X 2.00	BEH-0.25 X 2	3	CL-3	200
X 2.50	BEH-0.25 X 2.5	3	CL-3	250
X 3.00	BEH-0.25 X 3	4	CL-4	2 X 200
X 4.00	BEH-0.25 X 4	4	CL-4	2 X 250

BEH Mold



Bus Bar Connections

BTV Mold

A	Part Number	Price Code	Handle Clamp	Weld Metal Size
1/8 X 1.00	BTV-0.13 X 1	3	CL-3	90
X 1.50	BTV-0.13 X 1.5	3	CL-3	150
X 2.00	BTV-0.13 X 2	3	CL-3	200
X 3.00	BTV-0.13 X 3	4	CL-4	2 X 150
X 4.00	BTV-0.13 X 4	4	CL-4	2 X 200
3/16 X 1.00	BTV-0.19 X 1	3	CL-3	115
X 2.00	BTV-0.19 X 2	3	CL-3	200
1/4 X 1.00	BTV-0.25 X 1	3	CL-3	150
X 1.25	BTV-0.25 X 1.25	3	CL-3	200
X 1.50	BTV-0.25 X 1.5	3	CL-3	250
X 2.00	BTV-0.25 X 2	4	CL-4	2 X 200
X 2.50	BTV-0.25 X 2.5	3	CL-3	250
X 3.00	BTV-0.25 X 3	4	CL-4	2 X 200



Bus Bar Connections

NOTE

BT Mold

- Vertical T connection.
- Minimum clearance between wall and conductors must be greater than 4 inches. Where minimum clearance is not available, custom mold must be used.
- Additional molds for Rebar Connections, Railway Connections, Steel-to-Strap Connections, etc., are available upon request in various configurations.
- Please contact your representative for details.
- For more information on required tools and accessories, see Page 120-122.

А	Part Number	Price Code	Handle Clamp	Weld Metal Size
1/8 X 1.00	BT-0.13 X 1	3	CL-3	45
X 1.50	BT-0.13 X 1.5	3	CL-3	65
X 2.00	BT-0.13 X 2	3	CL-3	90
X 3.00	BT-0.13 X 3	4	CL-4	200
X 4.00	BT-0.13 X 4	4	CL-4	250
3/16 X 1.00	BT-0.19 X 1	3	CL-3	65
X 2.00	BT-0.19 X 2	3	CL-3	115
1/4 X 1.00	BT-0.25 X 1	3	CL-3	90
X 1.25	BT-0.25 X 1.25	3	CL-3	115
X 1.50	BT-0.25 X 1.5	3	CL-3	150
X 2.00	BT-0.25 X 2	3	CL-3	200
X 2.50	BT-0.25 X 2.5	4	CL-4	250
X 3.00	BT-0.25 X 3	4	CL-4	2 X 200
X 4.00	BT-0.25 X 4	4	CL-4	2 X 250



Bus Bar Connections

- Horizontal Tee bus bar connection.
- Additional molds for Rebar Connections, Railway Connections, Steel-to-Strap Connections, etc., are available upon request in various configurations.

BX Mold

A	Part Number	Price Code	Handle Clamp	Weld Metal Size
1/8 X 1.00	BX-0.13 X 1	3	CL-3	90
X 1.50	BX-0.13 X 1.5	3	CL-3	200
X 2.00	BX-0.13 X 2	4	CL-4	2 X 150
X 3.00	BX-0.13 X 3	4	CL-4	2 X 150
X 4.00	BX-0.13 X 4	4	CL-4	3 X 200
3/16 X 1.00	BX-0.19 X 1	3	CL-3	150
X 2.00	BX-0.19 X 2	4	CL-4	2 X 200
1/4 X 1.00	BX-0.25 X 1	3	CL-3	150
X 1.25	BX-0.25 X 1.25	3	CL-3	200
X 1.50	BX-0.25 X 1.5	4	CL-4	2 X 150
X 2.00	BX-0.25 X 2	4	CL-4	3 X 150
X 2.50	BX-0.25 X 2.5	4	CL-4	3 X 150
X 3.00	BX-0.25 X 3	4	CL-4	3 X 200
X 4.00	BX-0.25 X 4	4	CL-4	3 X 250



Bus Bar Connections

NOTE

- Copper bus bar to bus bar connection.
- Additional molds for Rebar Connections, Railway Connections, Steel-to-Strap Connections, etc., are available upon request in various configurations.
- Please contact your representative for details.
- For more information on required tools and accessories, see Page 120-122.

A	Part Number	Price Code	Handle Clamp	Weld Metal Size
1/8 X 1.00	BS-0.13 X 1	3	CL-3	115
X 1.50	BS-0.13 X 1.5	3	CL-3	150
X 2.00	BS-0.13 X 2	3	CL-3	200
X 3.00	BS-0.13 X 3	3	CL-3	200
X 4.00	BS-0.13 X 4	3	CL-3	200
3/16 X 1.00	BS-0.19 X 1	3	CL-3	150
X 2.00	BS-0.19 X 2	3	CL-3	250
1/4 X 1.25	BS-0.25 X 1.25	3	CL-3	150
X 1.50	BS-0.25 X 1.5	3	CL-3	150
X 2.00	BS-0.25 X 2	4	CL-4	2 X 150
X 2.50	BS-0.25 X 2.5	4	CL-4	2 X 150
X 3.00	BS-0.25 X 3	4	CL-4	2 X 200
X 4.00	BS-0.25 X 4	4	CL-4	2 X 200
1/2 X 1.00	BS-0.5 X 1	3	CL-3	250
X 2.00	BS-0.5 X 2	3	CL-3	250

BS Mold



Steel To Strap Connections

- Copper bus bar to horizontal steel surface connection.
- Additional molds for Rebar Connections, Railway Connections, Steel-to-Strap Connections, etc., are available upon request in various configurations.

BVSE Mold

A	Part Number	Price Code	Handle Clamp	Weld Metal Size
1/8 X 1.00	BVSE-0.13 X 1	3	CL-3	115
X 1.50	BVSE-0.13 X 1.5	3	CL-3	150
X 2.00	BVSE-0.13 X 2	3	CL-3	200
X 3.00	BVSE-0.13 X 3	4	CL-4	200
X 4.00	BVSE-0.13 X 4	4	CL-4	200
3/16 X 1.00	BVSE-0.19 X 1	3	CL-3	150
X 1.50	BVSE-0.19 X 1.5	3	CL-3	200
X 2.00	BVSE-0.19 X 2	3	CL-3	250
1/4 X 1.00	BVSE-0.25 X 1	3	CL-3	150
X 1.25	BVSE-0.25 X 1.25	3	CL-3	200
X 1.50	BVSE-0.25 X 1.5	3	CL-3	250
X 2.00	BVSE-0.25 X 2	4	CL-4	2 X 150
X 2.50	BVSE-0.25 X 2.5	4	CL-4	2 X 150
X 3.00	BVSE-0.25 X 3	4	CL-4	2 X 200
X 4.00	BVSE-0.25 X 4	4	CL-4	2 X 200
1/2 X 1.00	BVSE-0.5 X 1	3	CL-3	250
X 1.50	BVSE-0.5 X 1.5	4	CL-4	2 X 200
X 2.00	BVSE-0.5 X 2	4	CL-4	2 X 250



Steel To Strap Connections

- Copper bus bar to vertical steel surface connection.
- Additional molds for Rebar Connections, Railway Connections, Steel-to-Strap Connections, etc., are available • upon request in various configurations.
- Please contact your representative for details. •
- For more information on required tools and accessories, see Page 120-122. •

Rail Bond Connections

ERW Mold

A	Part Number	Price Code	Handle Clamp	Weld Metal Size
6	ERW-6A-L/R	3	CLR-3	B45
4	ERW-4A-L/R	3	CLR-3	B45
2	ERW-2A-L/R	3	CLR-3	B45
1/0	ERW-1/0A-L/R	5	CLR-3	B90
2/0	ERW-2/0A-L/R	5	CLR-3	B115
4/0	ERW-4/0A-L/R	5	CLR-3	B115
250	ERW-250A-L/R	5	CLR-3	B150
350	ERW-350A-L/R	5	CLR-3	B200
500	ERW-500A-L/R	5	CLR-3	B250



Wire To Rail Connections

NOTE

- Please add suffix L or R to signify the direction of the conductor. **Example:** ERW-6A-L means the conductor goes to the left as shown in the diagram.
- The suffix "A" in the part number denote AWG concentric wire. Use suffix "R" for Class G** ropelay wire.
- **G Wire is specific to US railroad industry. It is specified in the AREMA standards for bonding transportation rail.
- DX-3 mold sealer or DX-4 ceramic fibers can be used to prevent leakage.
- Please contact your representative for details.
- For more information on required tools and accessories, see Page 120-122.

A	Part Number	Price Code	Weld Metal Size
6	ERB-6A	3	B45
4	ERB-4A	3	B45
2	ERB-2A	3	B45
1/0	ERB-1/0A	3	B90
2/0	ERB-2/0A	3	B115
4/0	ERB-4/0A	3	B115
250	ERB-250A	3	B150
350	ERB-350A	3	B200
500	ERB-500A	3	B250

ERB Mold



Wire To Rail Connections

- ERB Mold comes with an integrated handle and frame.
- The suffix "A" in the part number denote AWG concentric wire. Use suffix "R" for Class G** ropelay wire.
- **G Wire is specific to US railroad industry. It is specified in the AREMA standards for bonding transportation rail.

ERT Mold

A	Part Number	Price Code	Handle Clamp	Weld Metal Size
6	ERT-6A-L/R	3	CLR-1	B45
4	ERT-4A-L/R	3	CLR-1	B45
2	ERT-2A-L/R	3	CLR-1	B45
1/0	ERT-1/0A-L/R	5	CLR-1	B90
2/0	ERT-2/0A-L/R	5	CLR-1	B115
4/0	ERT-4/0A-L/R	5	CLR-1	B115
250	ERT-250A-L/R	5	CLR-1	B150
350	ERT-350A-L/R	5	CLR-1	B200
500	ERT-500A-L/R	5	CLR-1	B250



Wire To Rail Connections

- Please add suffix L or R to signify the direction of the conductor.**Example:** ERT-6A-L means the conductor goes to the left as shown in the diagram.
- The suffix "A" in the part number denote AWG concentric wire. Use suffix "R" for Class G** ropelay wire.
- **G Wire is specific to US railroad industry. It is specified in the AREMA standards for bonding transportation rail.
- DX-3 mold sealer or DX-4 ceramic fibers can be used to prevent leakage.
- Please contact your representative for details.
- For more information on required tools and accessories, see Page 120-122.

Reference Information

Bare Copper Wire, Stranded (IEC, Metric)

Wire Size mm²	Strands/Strand Dia. no./mm	Nominal Cross Section mm ²	Cable Diameter mm	DC Resistance Ω/km @ 20°C	Tensile Strength kgf
10	7/1.4	10.78	4.2	<1.649	>452
16	7/1.7	15.89	5.1	1.150	662
25	7/2.1	24.94	6.4	0.7538	1,035
30	7/2.3	29.09	6.9	0.6180	1,170
35	7/2.5	35.19	7.6	0.5319	1,460
50	19/1.8	49.97	9.0	0.3805	1,970
70	19/2.1	70.27	10.5	0.2795	2,908
95	19/2.5	93.26	12.5	0.1972	3,870
120	19/2.8	120.36	14.2	0.1572	4,986
150	37/2.3	147.11	16.0	0.1259	6,105
185	37/2.5	184.54	17.7	0.1020	7,665
240	37/2.8	232.73	19.8	0.0656	9,658
300	37/3.2	299.43	22.5	0.0518	12,426
400	61/2.9	402.90	26.1	0.0450	15,900
500	61/3.2	490.60	28.8	0.0370	19,300

Bare Copper Wire, Stranded (AWG-American Wire Gauge)

Wire Size	Cross Section	Cross Section	No. of Strondo	Cable Diameter	DC Resistance	Tensile Strength
AWG	MCM	mm ²	NO. OF Stranus	mm	Ω/km @ 20°C	kgf
10	10.38	5.261	7	2.95	3.478	223
9	13.09	6.632	7	3.30	2.757	280
8	16.51	8.368	7	3.70	2.186	352
7	20.82	10.55	7	4.20	1.734	443
6	26.25	13.30	7	4.70	1.375	557
5	33.10	16.77	7	5.25	1.090	699
4	41.74	21.15	7	5.90	0.8648	879
3	52.63	26.67	7	6.60	0.6857	1,104
2	66.37	33.63	7	7.40	0.5440	1,381
1	83.69	42.41	19	8.45	0.4311	1,769
1/0	105.5	53.48	19	9.45	0.3419	2,223
2/0	133.1	67.42	19	10.6	0.2712	2,790
3/0	167.8	85.03	19	11.9	0.2151	3,492
4/0	211.6	107.2	19	13.4	0.1706	4,362
250MCM		126.6	37	14.6	0.1443	5,244
300MCM		152.0	37	16.0	0.1203	6,291
350MCM		175.4	37	17.3	0.1031	7,285
400MCM		202.7	37	18.5	0.09022	8,310
500MCM		253.4	37	20.7	0.07218	10,210
750MCM		380.0	61	25.4	0.04818	15,460
1000MCM		506.7	61	29.3	0.03609	20,430
1250MCM		633.4	91	32.7	0.02887	25,530
1500MCM		760.0	91	35.9	0.02406	30,640
1750MCM		886.4	127	38.8	0.02062	35 740

Note: 1 MCM=1,000 CM; 1 CM=0.0005067mm² , or 1mm2 =1973.5 CM or 1.97 MCM

Wire Guage AWG	Cross Section Circ. Mils	Cross Section mm ²	Cable Diameter inch	Cable Diameter mm	DC Resistance Ω/km @ 20°C	Tensile Strength kgf
14	4.107	2.081	.0064	1.628	8.615	96.8
13	5.178	2.624	.0719	1.828	6.834	122
12	6.530	3.309	.0808	2.053	5.420	153
11	8.234	4.172	.0907	2.305	4.298	192
10	10.38	5.261	.1019	2.588	3.409	240
9	13.09	6.632	.1144	2.906	2.703	300
8	16.51	8.368	.1285	3.264	2.143	375
7	20.82	10.55	.1443	3.665	1.700	467
6	26.25	13.30	.1620	4.115	1.348	581
5	33.10	16.77	.1819	4.620	1.069	722
4	41.74	21.15	.2043	5.189	0.8478	894
3	52.64	26.67	.2294	5.827	0.6722	1,110
2	66.37	33.63	.2576	6.543	0.5331	1,360
1	83.69	42.41	.2893	7.348	0.4229	1,670
1/0	105.5	53.48	.3249	8.252	0.3317	2,050
2/0	133.1	67.42	.3648	9.266	0.2632	2,500
3/0	167.8	85.03	.4096	10.40	0.2087	3,050
4/0	4,110	107.13	.4600	11.68	0.1655	3,813

Bare Copper Wire, Solid (AWG-American Wire Gauge)

Note: 1 MCM=1,000 CM; 1 CM=0.0005067mm² , or 1mm² =1973.5 CM or 1.97 MCM

Standard Reinforcement Bar (Rebar) Sizes

Rebar Size	Diameter mm	Diameter inch	Cross Section Sq. inches	Cross Section mm ²	Equivalent Cu Wire* AWG
3	9.52	0.375	0.11	70.97	9
4	12.7	0.500	0.20	129.03	7
5	15.87	0.625	0.31	199.99	5
6	19.05	0.750	0.44	283.87	3
7	22.22	0.875	0.60	387.09	2
8	25.40	1.000	0.79	509.67	1
9	28.65	1.128	1.00	645.16	1/0
10	32.25	1.270	1.27	819.35	2/0

* Note: Steel has only 8% conductivity relative to copper (Copper=100%, Steel=8%)

DSA Copperweld Wire*

Wire Size	Diameter mm	Diameter inch	Cross Section MCM	Cross Section mm ²	Equivalent Cu Wire* AWG
7/#10	7.8	.306	72.7	36.9	3
7/#8	9.8	.385	115.6	58.7	1
7/#7	11.0	.433	145.7	73.9	1/0
7/#6	12.3	.486	183.8	93.3	2/0
7/#5	13.9	.546	231.7	117.6	3/0
19/#9	14.5	.572	248.8	126.3	3/0
7/#4	15.6	.613	292.2	148.3	4/0
19/#8	16.3	.642	313.7	159.2	4/0
19/#7	18.3	.721	395.5	200.8	250MCM
37/#9	20.3	.801	484.4	245.9	300MCM
19/#6	20.6	.810	498.8	253.2	350MCM
37/#7	25.7	1.01	770.3	391.0	500MCM

* As published by LTV Copperweld

* Note: Steel has only 8% conductivity relative to copper (Copper=100%, Steel=8%)

Metric to Imperial (IEC) Cable Conversion Chart

Cross Sectional	Conductor Diameter			Conductor Diameter		
Area (mm²)	Inches	mm	Size Awg	Inches	mm	
2.0 Concentric	0.071	1.8	#14 Concentric	0.0726	1.84	
3.5 Concentric	0.095	2.4	#12 Concentric	0.0915	2.3	
4 Solid	0.098	2.5	#10 Solid	0.102	2.6	
6 Solid	0.122	3.1	#8 Solid	0.128	3.25	
5.5 Concentric	0.118	3.0	#10 Concentric	0.116	2.95	
8.0 Concentric	0.142	3.6	#8 Concentric	0.146	3.7	
10 Solid	0.150	3.8	#6 Solid	0.162	4.1	
10 Concentric	0.162	4.2	#7 Concentric	0.164	4.2	
14 Concentric	0.189	4.8	#6 Concentric	0.184	4.7	
16 Solid	0.177	4.5	#4 Solid	0.204	5.2	
16 Concentric	0.204	5.2	#5 Concentric	0.205	5.2	
22 Concentric	0.236	6.0	#4 Concentric	0.232	5.9	
25 Solid	0.220	5.6	#3 Solid	0.229	5.8	
25 Concentric	0.260	6.4	#3 Concentric	0.260	6.6	
30 Concentric	0.276	6.9	#2 Concentric	0.292	7.4	
35 Solid	0.264	6.7	#2 Solid	0.258	6.6	
35 Concentric	0.305	7.7	#2 Concentric	0.292	7.4	
38 Concentric	0.315	7.8	#2 Concentric	0.292	7.4	
40 Concentric	0.331	8.4	#1 Concentric	0.332	8.4	
50 Solid	0.315	8.0	1/0 Solid	0.325	8.3	
50 Concentric	0.354	9.0	1/0 Concentric	0.373	9.5	
55 Concentric	0.378	9.6	1/0 Concentric	0.373	9.5	
60 Concentric	0.394	10.0	2/0 Concentric	0.419	10.6	
70 Solid	0.394	10.0	3/0 Solid	0.410	10.4	
70 Concentric	0.430	10.9	2/0 Concentric	0.419	10.6	
80 Concentric	0.453	11.5	3/0 Concentric	0.470	12.0	
95 Concentric	0.505	12.6	4/0 Concentric	0.528	13.4	
100 Concentric	0.512	13.0	4/0 Concentric	0.528	13.4	
120 Concentric	0.567	14.2	250 MCM	0.575	14.6	
125 Concentric	0.571	14.5	250 MCM	0.575	14.6	
150 Concentric	0.634	16.1	300 MCM	0.630	16.0	
185 Concentric	0.700	17.7	350 MCM	0.681	17.3	
200 Concentric	0.717	18.2	400 MCM	0.728	18.5	
240 Concentric	0.801	20.3		0.813	20.7	
250 Concentric	0.815	20.7		0.813	20.7	
300 Concentric	0.691	22.3		0.693	22.1	
325 Concentric	0.922	23.4		0.964	24.0	
500 Concentric	1.03	20.2		1.031	20.2	
600 Concentric	1.10	20.0		1.102	23.3	
625 Concentric	1.20	30.9	1200 IVICIVI	1.203	32.1	
725 Concentric	1.29	35.0		1.203	34.6	
800 Concentric	1.09	36.8	1600 MCM	1.304	37.1	
850 Concentric	1.43	37.6	1700 MCM	1.433	38.2	
1000 Concentric	1.40	/1 6	2000 MCM	1.500	/1 5	
	1.04	- I .U		1.002	- T.J	

Conductor Identification

Base Class A, B, and C, Concentric Conductor Based on ASTM Standard Specifications

	Size in Circular Mils	Conductor Diameter	Number of wires				
SIZE AWG			7	19	37	61	91
1000	1,000,000	1.152"			.1644*	.1280	.1048
800	8,000,000	1.031"			.1470*	.1145	.0938
750	750,000	.998"			.1424*	.1109	.0908
700	700,000	.964"			.1375*	.1071	.0877
600	600,000	.893"			.1273	.0922	.0812
500	500,000	.813"		.1622*	.1162	.0905	
400	400,000	.728"		.1451	.1040	.0810	
350	350,000	.681"		.1357	.0973	.0757	
300	300,000	.630"		.1257	.0900	.0701	
250	250,000	.575"		.1147	.0822	.0640	
4/0	211,600	.528"	.1739	.1055	.0756		
3/0	167,800	.470"	.1548	.0940	.0763		
2/0	133,100	.419"	.1379	.0837	.0600		
1/0	105,500	.373"	.1228	.0745	.0534		
1	83,690	.332"	.1093	.0664	.0467		
2	66,370	.292"	.0974	.0591			
3	52,630	.260"	.0867	.0526			
4	41,740	.232"	.0772	.0469			
6	26,240	.184"	.0612	.0372			
8	16,510	.146"	.0486	.0295			
10	10,380	.116"	.0385	.0234			
12	6,530	.0915"	.0305	.0185			
14	4,110	.0726"	.0242	.0147			

*Class AA

Base Solid Copper Wire Based on ASTM Standard Specifications

Size AWG	Size in Circular Mils	Conductor Diameter
4/0	211,600	.4600"
3/0	167,800	.4096"
2/0	133,100	.3648"
1/0	105,500	.3249"
1	83,690	.2893"
2	66,370	.2576"
3	52,630	.2294"
4	41,740	.2043"
6	26,240	.1620"
8	16,510	.1285"
10	10,380	.1019"
12	6,530	.0808"
14	4,110	.0641"

TerraWeld® Guide to Troubleshooting

#	Problem	Cause	Solution
Tr 1 th tig	The handles lock, but the mold doesn't close tightly.	Handle clamps are not properly adjusted.	Adjust the handles, especially when they are new.
		Use of improper cable size	Use the correct cable size, a too large cable will hold the mold open.
		Bent or out-of-round cable	Make sure that the cables are not curved or bent.
		Dirt or slag stuck in mold parting line	Check the mold parting line. Make sure there is no dirt, slag or foreign objects.
	The connection is porous.	Presence of moisture or mold in the conductor	Dry the conductor by wiping and then heating.
2		Not enough heating of the mold or heating temperature is too low	Heat mold with torch (to above 212 °F) or by igniting weld materials in mold without any conductors. Be careful to prevent burns from the hot material seeping out of the mold. NOTE: Do not use this method of heating if the mold has wear-plates.
		Presence of contaminants (oil, insulation, etc.) in conductors	Use a safety solvent to wash the conductor, and then dry it. If insulation is present between strands, remove it.
3	The conductors do not weld.	Conductors are not properly cleaned	Remove oxides using the wire brush. If heavily oxidized, create a fresh-cut conductor end and use TerraWeld [®] Heavy Duty molds.
		Conductors are not properly dried	Dry conductor with a torch.
		Improper gap or butting	Check for proper gap or butting as required (see mold tag and read the instructions packaged with the mold).
		Conductors are not properly positioned in the mold	Check to be sure gap is centered under tap hole. NOTE: In some cases, the run (thru) conductor must be cut and gapped. Follow instructions packaged with the mold or use TerraWeld [®] Heavy Duty molds.

#	Problem	Cause	Solution
4	The connection is covered with	Disk was not put in.	Create a new weld while carefully observing the procedure steps.
	unnecessary slag.	Disk movement	Use care when pouring the weld material.
	NOTE: A small amount	Disk not correctly seated	Ensure the disk is placed correctly.
	of slag on the surface is usual.	Chipped graphite at tap hole	Replace with a new mold.
5	Molten metal seeps out of the crucible	Presence of moisture or mold in the conductor	Mold material in weld cavity of mold.
	when creating a connection (See the Problem #4.)	Lack of mold packing material in weld cavity of mold	Always apply mold packing material to conductor after mold is closed.
		Lack of mold packing material	Use packing material around the conductor after the mold is closed
	The wold motal leaks	Excessively worn mold	Replace with a new mold.
6	around the conductor.	Excessive use	Use molds with wear-plates (which also act as chill-plates).
		Use of improper mold	Use a proper mold. Mold must be the correct size for the cable being welded.
7	The connection has "fins" – metal is lost.	Mold not being completely closed	See the Problem #1.
		Mold worn beyond useful life and needs replacement	Replace with a new mold.
8	The cables pull out of mold during welding.	Conductor movement	Use a clamp or other means to prevent movement of conductors during welding.
		Either twisted or tensioned conductors	Cut out the twisted conductor.
9	There is insufficient fill material to cover conductors.	Use of improper weld material size	Determine use of proper weld material size (see the mold tag).
		Resulting from leaking weld metal caused by worn mold	Replace mold, or if only worn around conductor opening, use duct seal (or putty) around conductor. Do not get duct seal into mold cavity.
		Conductor Movement	Determine use of proper weld material size (see the mold tag).
		Too large a gap between conductors	See the positioning instructions (Page 5 & Page 6).
		Mold Leak	See the Problems #6, 7, & 8.
10	The riser is too high.	Moisture in mold or conductor (see Problem #4)	Determine use of proper weld material size (see the mold tag).

#	Problem	Cause	Solution
11	The mold wears out quickly. NOTE: Molds should last an average of 60-80 connections. See TerraWeld® Mold Inspection page 7.	Mold has not been cleaned at all or has been cleaned improperly	Use a cable clamp for hard-drawn copper or DSA Copper weld wire.
		Use of improper tools	Clean the mold with a soft brush (preferably natural bristle), clean cloth, or newspaper. DO NOT USE A WIRE BRUSH, it will cause erosion and quickly destroy the mold.
		Rough handling of molds	Use care when removing the mold from a finished connection to prevent chipping of the mold.
12	When welding to steel, the weld does not stick to the steel.	Steel is cleaned improperly	Clean the steel with a rasp or grinder to bright metal. All mill scale, paint, and/ or other coating must be removed with a safety solvent before cleaning.
		Galvanized surfaces are not clean enough to be welded	Clean galvanized surfaces with a wire brush or emery cloth. However, extra heavy galvanized steel must be cleaned with a rasp.
		Steel surface or the conductors are moist or contaminated	Heat the surface to be welded with a torch (from back-side if possible). Any carbon deposit (visible as dark ash) must be removed from the surface to be welded.
		Conductors are not in proper position	Check the instruction sheet.
13	When welding to ductile iron or cast iron, the weld does not stick to the surface.	Excessive coatings present	Remove all coatings before cleaning.
		Contaminated surface	Clean surface with rasp or grinder to bright metal, and wipe with a safety solvent.
		Using an incorrect powder	Use TerraWeld [®] alloy metal material.



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