



EARTHING



LIGHTNING PROTECTION



CATHODIC PROTECTION



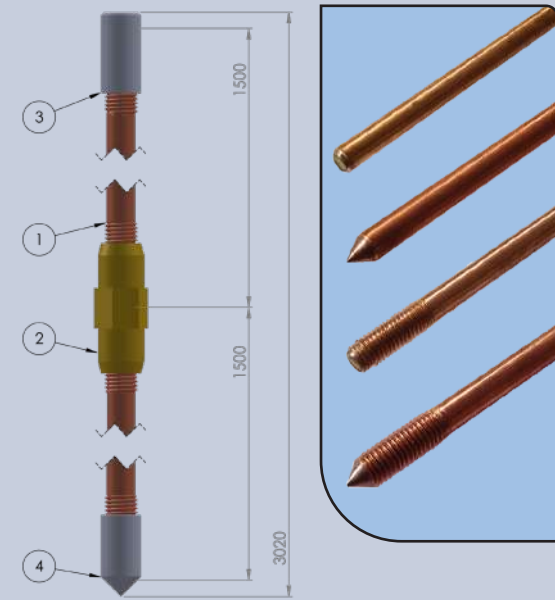
EXOTHERMIC WELDING

**CAJHIZAT SYSTEM ZAMIN.CO**








# EARTH ROD

(Coupler&Driving Head&Driving Stud)



TSZ.co manufactured earth rods are : 1.Copper Bond 2.Stainless Steel 3.Pure Copper  
 Copper bonded Earth Rods are also known as Copper Clad Steel Rods , which has been manufactured according to (IEC 62561) , (UL 467) and (INSO 18499) .  
 Copper bonded Rods are available in 3/4" Ø and 5/8" Ø and can be threaded on each end for more extension on length . Each Rod can be manufactured up to 3Meters length .  
 Stainless Steel Earth Rods are Available in 16mm & 20mm Ø with length up to 3000mm referring to high mechanical strength of Stainless steel , Earth rods can be manufactured in any length required , also for ease of installation rods can be threaded for couplings and length extension .

Head Type		
Threaded & Flat ends	TF	
Threaded on both heads	TT	
Threaded & Pointed heads	TP	
Flat & Pointed heads	FP	
Threaded on both heads , one pointed	TTP	

Order Code  
ER-MD-L-CT

Coding Example :  
ER-CB3/4-1500-TT

3/4" threaded ends 1500mm long copper bond earth rod



ER	M	D	L	CT
Earth Rod	Material	Diameter	Length	Cutting Types

Rod Type	Thread	Length	Diameter
(CB) CopperBond	5/8 "	Up to 3m	14.2mm
(CB) CopperBond	3/4 "	Up to 3m	17.2mm
(SC)Solid Copper,(SST)Stainless Steel,(HDG)Hot Dip Galvanized	M12	Up to 3m	16mm
(SC)Solid Copper,(SST)Stainless Steel,(HDG)Hot Dip Galvanized	M12	Up to 3m	20mm

ITEM NO	PART NUMBER	DESCRIPTION	MATERIAL	QTY
1	ER-CBH3/4x1500-TT	Copper bond Earth Rod Size 3/4"	Copper bond steel	2
2	CO-CB3/4	Coupling For Copper Bond Rods	CZ112	1
3	DH-CB3/4	Driving Head For Earth Rods	hardened St	1
4	DS-CB3/4	Driving Stud For Earth Rods	hardened St	1



# R.E.A

## Retractable Earthing Assembly



Atex certified No. Atex4743 X ECM 21

Tested acc. to : EN1127-1 + EN60079-0

EN80079-36 + EN80070-37 standards

Protection : EX II 2G Ex h IIC T4 Gb

Conductor : 40x3mm Tinned Copper

Suited for tanks with up to 20m height

Device resistance in 20m height < 0.03Ω

Stainless Steel AISI 304/316 Body

REA Body : SS 304/316

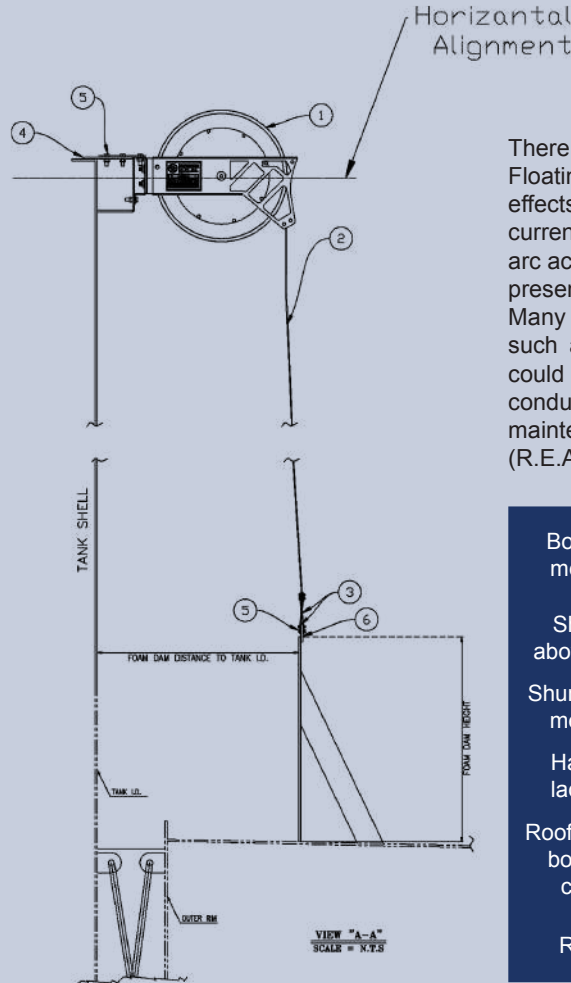
R.E.A Conductor : Tinned Braided Copper

Flexible Strap : Tinned Braided Copper

Installation Bracket : MildSteel

Hardware (Bolt&Nut&Washer set :Stainless steel)

Bottom Bracket : MildSteel



There are 15 to 20 known Floating Roof Tank (FRT) fires per year. Floating Roof Tanks are especially vulnerable to the direct and indirect effects of lightning. Direct, or a nearby lightning strike can cause electrical current to flow across the tank shell and roof. When these lightning currents arc across the roof/shell interface, they can ignite any flammable vapour present with devastating effect.

Many genius ways have been discovered to prevent these damages, such as shunts or bypass conductor bonding, according to API reports shunts could be a sparkler when they're not sunken, ladder & wire shaped bypass conductors have high impedance, sunken shunts are not capable of monthly maintenance, so the best way is metal bypass conductors also known as (R.E.A) manufactured by TSZ.co

Bonding method	Resistance to lightning intensity	Arching chance	Easy inspection	harmed by tanks body condition
Shunts above seal	High	High	Yes	Yes
Shunts submerged	High	High	No	Yes
Halway ladders	High	High	Yes	No
Roof to shell bonding cable	High	High	Yes	No
R.E.A	Low	Low	Yes	No

# EARTH BAR

All Available dimensions and sizes can be tin plated . Earth bar insulators are 1.5kV Resin insulators and all mounting plates are AISI 304 Stainless Steel .

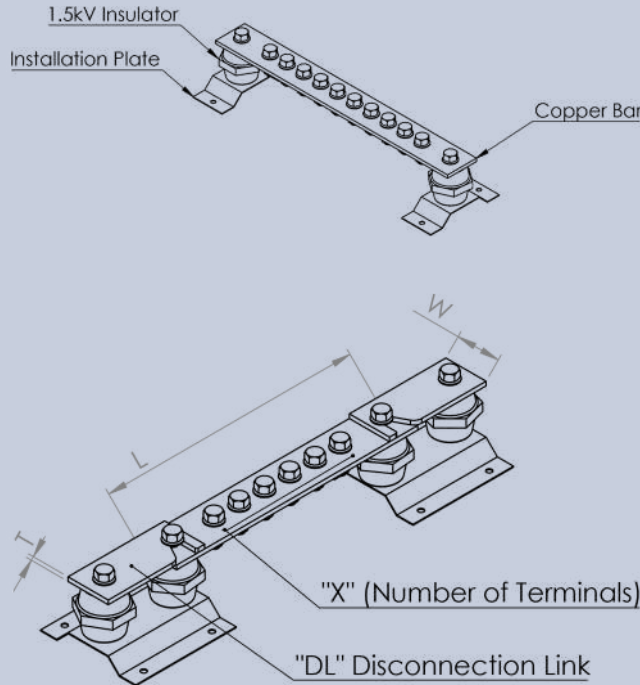
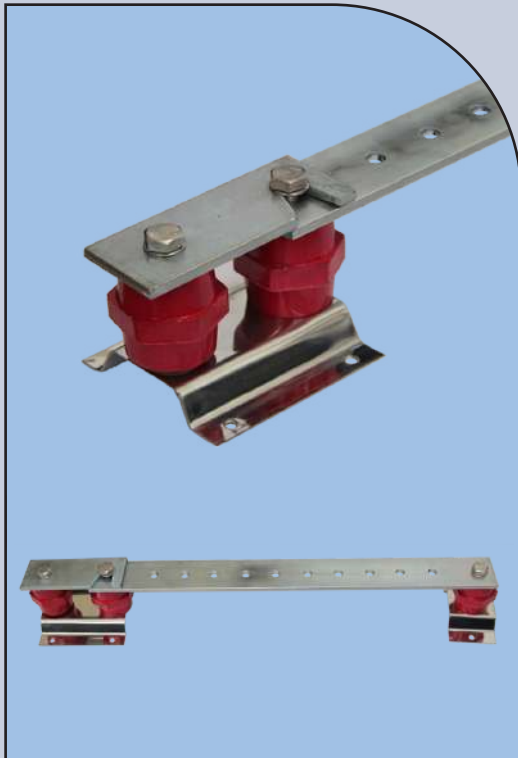
Bolts and nuts required for terminals are not included , Disconnection links will be added to the ends of earth bars if requested , Earth bars with more than 15 terminals have 3 mounting plates.



Order Code  
***TX-EBL-W-T-XDL***

Coding Example :  
**T10EB500-50-5-2DL**

Tin plated 10 terminal 500x50x5mm earth bar with 2 disconnection links .

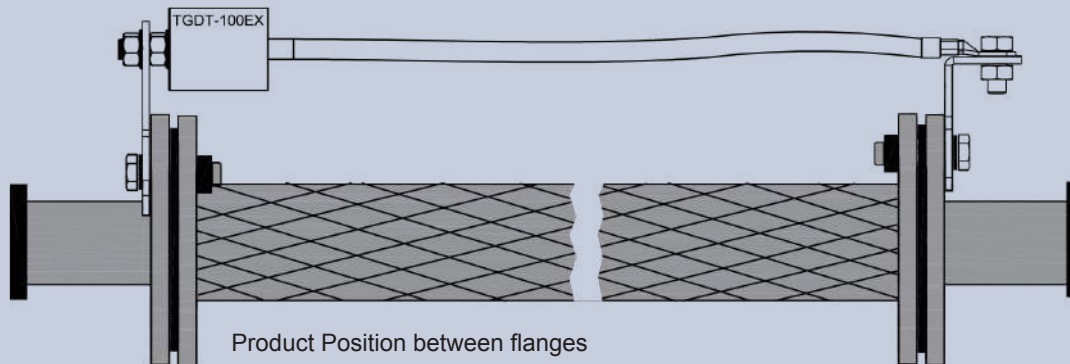
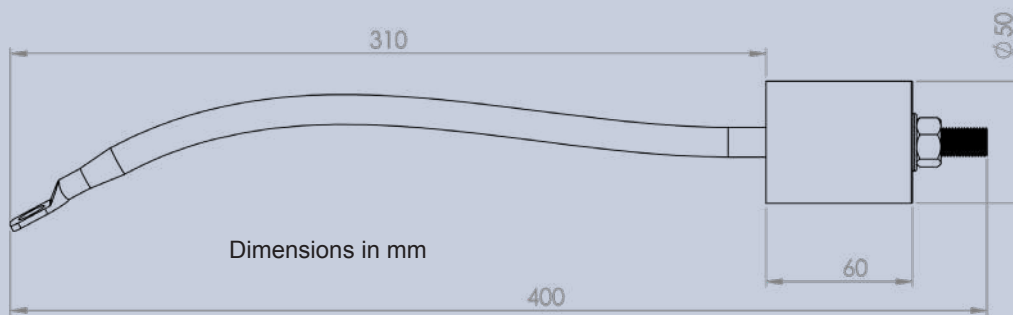
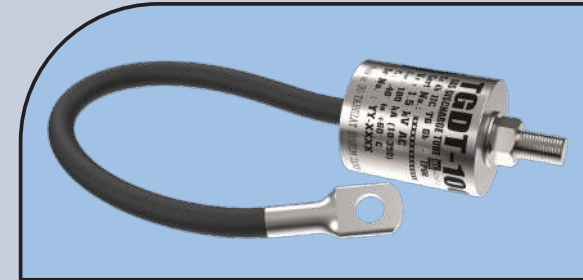


<b>T</b>	Tin plated
<b>X</b>	Terminal Qty
<b>EB</b>	Earth Bar
<b>L</b>	Copper bar length
<b>W</b>	Copper bar width
<b>T</b>	Copper bar thickness
<b>XDL</b>	Disconnection link Qty

# HIGH POWER GAS DISCHARGE TUBE

(TGDT-100EX)

This product is used to create indirect connections between isolated performing system parts and its manufactured according to IEC 62561 standards  
 This product is fully manufactured out of stainless steel , this will lead to substantially long service life  
 Suited for both indoor or outdoor use due to IP66 Ingress protection & High UV-Resistance  
 Operating temperature : -40 to +60°C



Applicable Standards	IEC 62561-3   60079-0   60079-1
Protection	Ex db IIC T6 Gb
Iimp(10/350 μs)	100kA
UImp (Spark Over Voltage)	1.5 kV
Uw AC(50Hz)	380V
Uw DC	456V
Tu (Service Temperature)	-20 °C ... +60 °C
Ingress Protection	IP 66
Material Properties	AISI 304 Stainless / Epoxy Resin
Current carrying Capacity	H class (Heavy Duty)

# ESE LIGHTNING ARRESTER (SA)

[SCHIRTEC.co](http://SCHIRTEC.co)

The basis of E.S.E lightning arresters operation is based on electromagnetic impulse creation , and in normal state, the device is on standby mode, at the time of lightning, as soon as the lightning enters the range of the lightning arrester rod, an upward stream is formed from the equipment. and creates a clear path for lightning from the storm clouds to the ground, also the design of the circuit and body of the lightning arrester is such that the lightning current passes through a path that does not damage the internal circuit .

The most important factor in the technical characteristics of ESE lightning arresters is the  $\Delta T$  characteristic, which is the difference in discharge time between an ESE lightning arrester and a normal lightning rod, in simpler words, an E.S.E with a  $\Delta T$  of 60 microseconds is 60 microseconds faster .

This product is provided with the installation requirements, including the lightning arrester clamp to the pole and the conductor clamp to the lightning arrester .

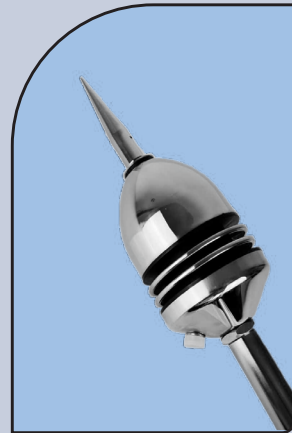


**ESE Clamp**



**Lightning arrester to tower clamp**

**Included in box accessories**



**ESE (S.A) Protection Radius**

h	I	II	III	IV
2	31	35	39	43
4	63	69	78	85
5	79	86	97	107
6	79	87	97	107
8	79	87	98	108
10	79	88	99	109
20	80	89	102	113
30	80	90	104	116

<b>Model</b>	S-A
<b><math>\Delta T</math></b>	60 $\mu s$
<b>Size (cm)</b>	66 x 12
<b>Weight (kg)</b>	2.8

# TSZ LIGHTNING ARRESTER

## INDRA

The basis of indra lightning arresters operation is based on electromagnetic impulse creation , and in normal state, the device is on standby mode, at the time of lightning, as soon as the lightning enters the range of the lightning arrester rod, an upward stream is formed from the equipment. and creates a clear path for lightning from the storm clouds to the ground, also the design of the circuit and body of the lightning arrester is such that the lightning current passes through a path that does not damage the internal circuit .

The most important factor in the technical characteristics of indra,s lightning arresters is the  $\Delta T$  characteristic, which is the difference in discharge time between an ESE lightning arrester and a normal lightning rod, in simpler words, an indra with a  $\Delta T$  of 25 microseconds is 25 microseconds faster .

This product is provided with the installation requirements, including the lightning arrester clamp to the pole and the conductor clamp to the lightning arrester .



Indra Protection radius				
h	I	II	III	IV
2	17	20	23	26
4	34	39	46	52
5	42	49	57	65
6	43	49	58	66
8	43	50	59	67
10	44	51	61	69
20	45	54	65	75
30	44	55	68	80

<b>Model</b>	Indra
<b><math>\Delta T</math></b>	25 $\mu s$
<b>Size (cm)</b>	57.3 x 7.6
<b>Weight (kg)</b>	2.8

# HANDY CAP

Order Code : HCP**T**

Coding Example : HCP1

Handy cap with integrated primer

This product is commonly used to cover cathodic protection system connections and isolating protected structures and its belongings ; anode , rectifier , metal structure connections are common in cathodic protection systems , and they're always performed with exothermic weldings , welded points are covered with a handy cap for isolation .

HCP	T
Handy cap	1 : integrated primer 2 : without primer

Property	Info
Overall size	100mmX100mm
Plastic sheet size	70mmX100mm
Plastic dome	42mm diameter - 20mm height
Sheet thickness	0.25 mm
Adhesive thickness	2mm / 4mm
Adhesion to primed steel	1.75 N/mm
Operating temperature	-40C° - +85C°
Shelf Life	3 Years
Weight	27gr





# EXOTERMIC WELDING

## Mould & Powder & Cleaning Kit

### Exothermic welding systems are supported by three essential components: **Graphite Mould**

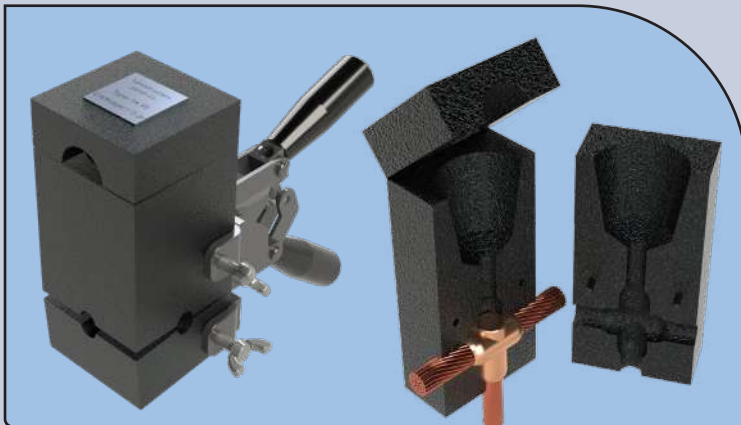
Durable and heat-resistant, our precision graphite moulds ensure clean consistent connections across a range of joint types.

### **Welding Powder**

Reliable and easy to use, our high-quality welding powder delivers controlled ignition and strong, stable welds. Each charge is pre-measured for efficiency.

### **Cleaning Kit**

Keep your moulds in top condition with our cleaning kit, which includes essential tools to remove residue and extend mould life.



### Cleaning kit included accessories :

1 : Gloves

2 : Mask

3 : Scraper

4 : Brush

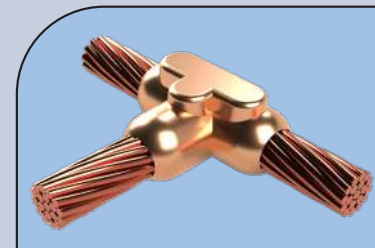
5 : Lighter

6. Wire brush

7 : Carrying bag



# TA



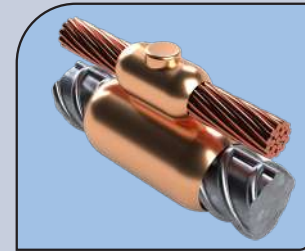
Order Code : **TAM-S**

Coding Example : **TA70-70** (TA) connection Suited for two 70mm<sup>2</sup> wires

(TA) connection consists 2 wires welded in a tee orientation

Main conductor size (M)	Secondary conductor size (S)										
	16	25	35	50	70	95	120	150	185	240	300
16	C32 HC-80										
25	C45 HC-80	C45 HC-80									
35	C45 HC80	C45 HC80	C45 HC80								
50	C65 HC-80	C65 HC-80	C65 HC-80	C65 HC-80							
70	C65 HC-80	C65 HC-80	C65 HC-80	C90 HC-80	C90 HC-80						
95	C90 HC-80	C90 HC-80	C90 HC-80	C115 HC-80	C115 HC-80	C115 HC-80	C115 HC-80				
120	C115 HC-80	C115 HC-80	C115 HC-80	C115 HC-80	C115 HC-80	C115 HC-80	C115 HC-80	C150 HC-80	C150 HC-80		
150	C115 HC-80	C115 HC-80	C150 HC-80	C150 HC-80	C150 HC-80	C150 HC-80	C150 HC-80	C150 HC-80	C150 HC-80	C150 HC-80	
185	C150 HC-80	C150 HC-80	C150 HC-80	C200 HC-100	C200 HC-100	C200 HC-100	C200 HC-100	C200 HC-100	C200 HC-100	C200 HC-100	C200 HC-100
240			C200 HC-100	C200 HC-100	C200 HC-100	C200 HC-80	C200 HC-80	C200 HC-80	C250 HC-100	C250 HC-100	
300			C250 HC-100	C250 HC-100	C250 HC-100	C250 HC-100	C250 HC-100	C250 HC-100	C250 HC-100	C250 HC-100	C250 HC-100

# DQ



Order Code : DQ**W-R**

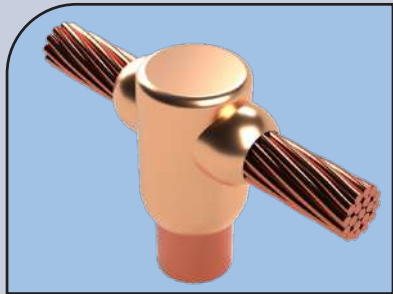
Coding Example : DQ50-16

DQ connection Suited for 50mm<sup>2</sup> wire and 16mm<sup>2</sup> rebar

(DQ) connection consists a wire welded on top of a rebar in a parallel position

Rebar size (R)	Conductor size (W)										
	16	25	35	50	70	95	120	150	185	240	300
8	C65 HC-80	C65 HC-80	C90 HC-80	C115 HC-80	C90 HC-80	C115 HC-80	C115 HC-80	C150 HC-80	C150 HC-80	C200 HCX-80	C200 HCX-80
10	C90 HC-80	C90 HC-80	C90 HC-80	C115 HC-80	C115 HC-80	C115 HC-80	C150 HC-80	C150 HC-80	C200 HCX-80	C200 HCX-80	C200 HCX-80
12	C115 HC-80	C115 HC-80	C115 HC-80	C115 HC-80	C115 HC-80	C150 HC-80	C150 HC-80	C200 HCX-80	C200 HCX-80	C200 HCX-80	C200 HCX-80
14	C115 HC-80	C115 HC-80	C150 HC-80	C150 HC-80	C150 HC-80	C150 HC-80	C200 HCX-80	C200 HCX-80	C200 HCX-80	C250 HCX-80	C250 HCX-80
16	C115 HC-80	C115 HC-80	C150 HC-80	C150 HC-80	C150 HCX-80	C150 HCX-80	C200 HCX-80	C200 HCX-80	C200 HCX-80	C250 HCX-80	C250 HCX-80
18	C150 HC-80	C150 HC-80	C150 HC-80	C200 HCX-80	C150 HCX-80	C200 HCX-80	C200 HCX-80	C200 HCX-80	C250 HCX-80	C250 HCX-80	C250 HCX-80
20	C150 HC-80	C150 HCX-80	C200 HCX-80	C200 HCX-80	C200 HCX-80	C200 HCX-80	C200 HCX-80	C250 HCX-80	C250 HCX-80	C300 HCX-80	C300 HCX-80

# GT



Order Code : GT**W-R**

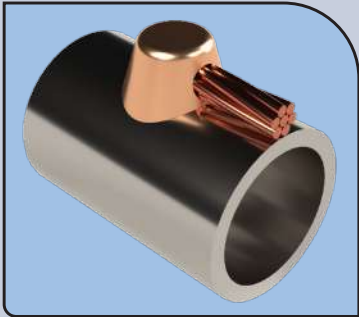
Coding Example : GT70-20

GT connection suited for 70mm wire and 20 mm<sup>2</sup> rod .

(GT) connection consists a wire welded on top of a rod

Rod size (R)	Conductor size (W)											
	16	25	35	50	70	95	120	150	185	240	300	
5/8	C115 HC-80	C115 HC-80	C115 HC-80	C115 HC-80	C115 HC-80	C115 HC-80	C115 HC-80	C115 HC-80	C115 HC-80	C150 HCX-80	C150 HCX-80	C200 HCX-80
3/4	C150 HC-80	C150 HC-80	C150 HC-80	C150 HC-80	C150 HC-80	C150 HC-80	C150 HC-80	C150 HC-80	C150 HCX-80	C200 HCX-80	C200 HCX-80	C250 HCX-80
14	C90 HC-80	C90 HC-80	C90 HC-80	C90 HC-80	C90 HC-80	C90 HC-80	C115 HC-80	C115 HC-80	C150 HCX-80	C150 HCX-80	C150 HCX-80	C200 HCX-80
20	C150 HC-80	C150 HC-80	C150 HC-80	C150 HC-80	C150 HC-80	C150 HC-80	C150 HC-80	C150 HC-80	C150 HCX-80	C200 HCX-80	C200 HCX-80	C250 HCX-80

# VP



Order Code : **VPW-P**

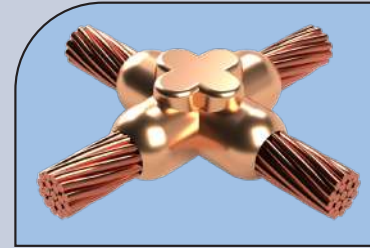
Coding Example : VP16-6"

VP connection suited for 16mm<sup>2</sup> wire and 6 inch pipe

(VP) connection consists a wire welded on top of a pipe .

conductor size (W)	Pipe Size (P)							
	1"	2"	3"	4"	5"	6"	8"	10"
16	C25	C25	C25	C25	C25	C25	C25	C25
25	C25	C25	C25	C25	C25	C25	C25	C25
35	C25	C25	C25	C25	C25	C25	C25	C25

# XA

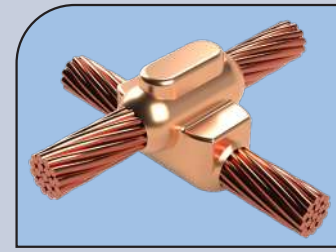


Order Code : **XAM-S**      Coding Example : **XA70-70**      XA connection suited for 70mm th 70mm wire

(XA) connection consists of 3 wires welded in a cross position

Main conductor size (M)	Secondary conductor size (S)										
	16	25	35	50	70	95	120	150	185	240	300
16	C65 HC-80										
25	C65 HC-80	C65 HC-80									
35	C65 HC-80	C65 HC-80	C90 HC-80								
50	C90 HC-80	C90 HC-80	C90 HC-80	C115 HC-80							
70	C90 HC-80	C90 HC-80	C115 HC-80	C115 HC-80	C115 HC-80						
95	C115 HC-80	C115 HC-80	C115 HC-80	C200 HC-80	C200 HC-80	C200 HC-80					
120			C200 HC-80	C200 HC-80	C150 HC-80	C200 HC-80	C200 HC-80				
150			C115 HC-80	C200 HC-80	C200 HC-80	C200 HC-80	C250 HC-80	C250 HC-80			
185			C200 HC-80	C200 HC-80	C200 HC-80	C250 HC-80	C250 HC-80	C250 HC-80	C300 HC-80		
240			C200 HC-80	C250 HC-80	C250 HC-80	C250 HC-80	C300 HC-80	C300 HC-80	C250+90 HC-80	C200+115 HC-80	
300				C250 HC-80	C250 HC-80	C300 HC-80	C300 HC-100	C250+65 HC-100	C250+95 HC-100	C250+115 HC-100	C250+115 HC-100

# XB

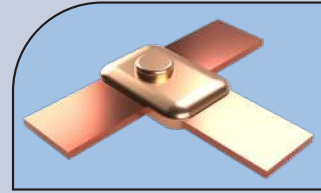


Order Code : XB connection suited for  
**XB-T** 2 70mm wires

Coding Example : (XB) connection consists of two crossover wires .  
XB70-70

Bottom conductor size (B)	Top conductor size (T)										
	16	25	35	50	70	95	120	150	185	240	300
16	C45 HC-80										
25	C45 HC-80	C45 HC-80									
35	C65 HC-80	C65 HC-80	C65 HC-80								
50	C90 HC-80	C90 HC-80	C90 HC-80	C115 HC-80							
70	C90 HC-80	C90 HC-80	C90 HC-80	C115 HC-80	C115 HC-80						
95			C115 HC-80	C115 HC-80	C115 HC-80	C150 HC-80					
120			C115 HC-80	C150 HC-80	C150 HC-80	C150 HC-80	C200 HC-80				
150			C150 HC-80	C150 HC-80	C150 HC-80	C200 HC-80	C200 HC-80	C250 HC-80			
185			C200 HC-80	C200 HC-80	C200 HC-80	C200 HC-80	C250 HC-80	C250 HC-80	C250 HC-80		
240				C250 HC-100	C250 HC-100	C250 HC-100	C250 HC-100	C250 HC-100	C300 HC-100	C3X115 HC-100	
300					C250 HC-100	C250 HC-100	C250 HC-100	C300 HC-100	C300 HC-100	C3X115 HC-100	C300+65 HC-100

# BM



Order Code : Coding Example :  
**BMM-S**      **BM25X3-25x3**

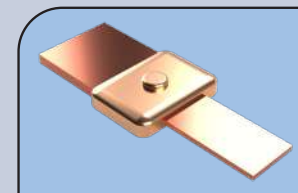
The welding connection of two copper tapes in a TEE position is called a (BM) connection

BM connection suited for two 25X3mm<sup>2</sup> tapes

Main conductor size (M)	Secondary tape (S)												
	20x2	20x3	20x5	25x2	25x3	25x5	30x2	30x3	30x5	50x3	50x5	50x6	
20x2	C90 HC80												
20x3	C90 HC80	C90 HC80											
20x5	C115 HC80	C115 HC80	C115 HC80										
25x2	C115 HC80	C115 HC80	C115 HC80	C115 HC80									
25x3	C115 HC80	C115 HC80	C115 HC80	C115 HC80	C115 HC80								
25x5	C115 HC80	C115 HC80	C115 HC80	C150 HC80	C150 HC80	C150 HC80							
30x2	C115 HC80	C115 HC80	C115 HC80	C150 HC80	C150 HC80	C150 HC80	C150 HC80						
30x3	C150 HC80	C115 HC80	C115 HC80	C150 HC80	C150 HC80	C150 HC80	C200 HC80	C200 HC80					
30x5	C115 HC80	C115 HC80	C115 HC80	C150 HC80	C150 HC80	C150 HC80	C200 HC80	C200 HC80	C200 HC80				
50x3	C115 HC80	C115 HC80	C115 HC80	C150 HC80	C115 HC80	C150 HC80	C150 HC80	C150 HC80	C150 HC80	C150 HC80	C300 HC80		
50x5	C115 HC80	C115 HC80	C115 HC80	C150 HC80	C150 HC80	C115 HC80	C200 HC80	C150 HC80	C150 HC80	C150 HC80	C300 HC80	C300 HC80	
50x6	C115 HC80	C115 HC80	C115 HC80	C150 HC80	C150 HC80	C150 HC80	C200 HC80	C200 HC80	C150 HC80	C200+150 HC80	C300 HC80	C300 HC80	C300 HC80



# BB



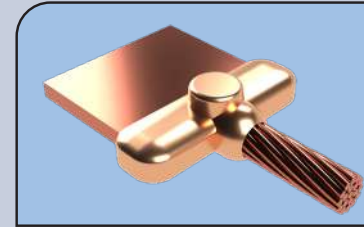
Order Code : **BBM-S**  
 Coding Example : **BB25X3-25x3**

The welding connection of two copper tapes end-to-end is called a (BB) connection

BB connection suited for 2 25X3mm<sup>2</sup> tapes .

Main conductor size (M)	Secondary tape (S)											
	20x2	20x3	20x5	25x2	25x3	25x5	30x2	30x3	30x5	50x3	50x5	50x6
20x2	C45 HC80	C45 HC80	C65 HC80	C65 HC80	C90 HC80	C90 HC80	C90 HC80	C115 HC80	C115 HC80	C115 HC80	C115 HC80	
20x3		C45 HC80	C65 HC80	C90 HC80	C65 HC80	C90 HC80	C115 HC80	C115 HC80	C115 HC80	C300 HC80	C300 HC80	
20x5												C300 HC80
25x2				C65 HC80	C90 HC80	C90 HC80	C90 HC80	C115 HC80	C300 HC80	C300 HC80	C300 HC80	
25x3					C65 HC80	C90 HC80	C115 HC80	C115 HC80	C115 HC80	C250 HC80	C300 HC80	
25x5						C90 HC80	C115 HC80	C115 HC80	C115 HC80	C300 HC80	C300 HC80	C300 HC80
30x2							C90 HC80	C115 HC80	C115 HC80	C300 HC80	C300 HC80	
30x3								C90 HC80	C115 HC80	C250 HC80		C300 HC80
30x5									C115 HC80	C300 HC80	C300 HC80	
50x3										C250 HC80	C300 HC80	C300 HC80
50x5												C300 HC80
50x6												C250 HC80

# LB



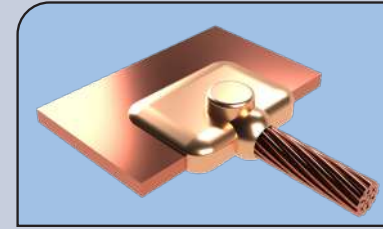
(LB) connection consists an end to end wire to tape connection .

Order Code : Coding Example :  
**LBM-S**                    **LB25X3-50**

LB connection suited for 25X3mm tape & 50mm wire

Tape size (M)	Wire size (S)						
	16	25	35	50	70	95	120
20x3	C45 HC80	C45 HC80	C65 HC80	C65 HC80	C65 HC80	C90 HC80	C90 HC80
20x5	C45 HC80	C65 HC80	C65 HC80	C65 HC80	C65 HC80	C90 HC80	C90 HC80
25x2	C65 HC80	C65 HC80	C65 HC80	C65 HC80	C65 HC80	C90 HC80	C115 HC80
25x3	C65 HC80	C65 HC80	C65 HC80	C65 HC80	C65 HC80	C90 HC80	C115 HC80
25x5	C65 HC80	C65 HC80	C65 HC80	C65 HC80	C65 HC80	C90 HC80	C115 HC80
30x2	C65 HC80	C65 HC80	C65 HC80	C90 HC80	C90 HC80	C90 HC80	C115 HC80
30x3	C65 HC80	C65 HC80	C65 HC80	C90 HC80	C90 HC80	C90 HC80	C115 HC80
50x5	C90 HC80	C90 HC80	C90 HC80	C115 HC80	C115 HC80	C115 HC80	C150 HC80
50x6	C90 HC80	C90 HC80	C90 HC80	C115 HC80	C115 HC80	C115 HC80	C150 HC80

# LJ

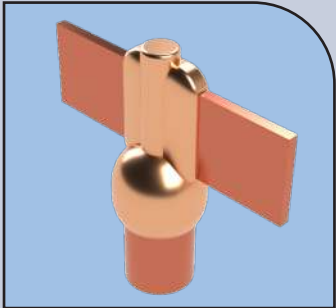


Order Code : Coding Example : The welding connection of a copper tape to a wire in a TEE position is called a (LJ) connection  
**LJM-S** LJ25X3-50

LJ connection suited for 25X3mm tape and 50mm wire

Tape size (M)	Wire size (S)						
	16	25	35	50	70	95	120
20x3	C65 HC80	C65 HC80	C65 HC80	C65 HC80	C65 HC80	C90 HC80	C115 HC80
20x5	C65 HC80	C65 HC80	C65 HC80	C65 HC80	C65 HC80	C90 HC80	C115 HC80
25x2	C90 HC80	C90 HC80	C90 HC80	C90 HC80	C90 HC80	C90 HC80	C115 HC80
25x3	C90 HC80	C90 HC80	C90 HC80	C90 HC80	C90 HC80	C90 HC80	C115 HC80
25x5	C90 HC80	C90 HC80	C90 HC80	C90 HC80	C90 HC80	C90 HC80	C115 HC80
30x2	C115 HC80	C115 HC80	C115 HC80	C115 HC80	C115 HC80	C115 HC80	C150 HC80
30x3	C115 HC80	C115 HC80	C115 HC80	C115 HC80	C115 HC80	C115 HC80	C150 HC80
50x5	C150 HC80	C150 HC80	C150 HC80	C150 HC80	C150 HC80	C150 HC80	C200 HC80
50x6	C150 HC80	C150 HC80	C150 HC80	C150 HC80	C150 HC80	C150 HC80	C200 HC80

# CR



Coding Example : CR

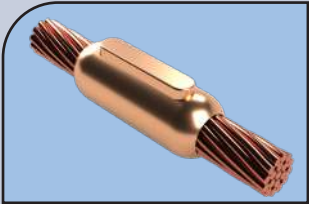
Order Code : **CRM-S**

CR connection suited for 2 25X3mm<sup>2</sup> tapes .

(CR) connection consists a tape welded on top of an earth rod .

Rod size (S)	Tape size (M)										
	20x2	20x3	25x2	25x3	25x5	30x2	30x3	30x5	50x3	50x5	50x6
14	C90 HC80	C90 HC80	C90 HC80	C90 HC80	C90 HC80	C115 HC80	C115 HC80	C115 HC80	C150 HC80	C150 HC80	C150 HC80
5/8	C90 HC80	C90 HC80	C90 HC80	C90 HC80	C115 HC80	C115 HC80	C115 HC80	C115 HC80	C150 HC80	C150 HC80	C150 HC80
3/4	C115 HC80	C115 HC80	C115 HC80	C115 HC80	C115 HC80	C115 HC80	C115 HC80	C115 HC80	C150 HC80	C150 HC80	C150 HC80
20	C90 HC80	C90 HC80	C115 HC80	C115 HC80	C115 HC80	C115 HC80	C115 HC80	C115 HC80	C150 HC80	C150 HC80	C150 HC80

# SS



Order Code : **SSW**

Coding Example : **SS70**

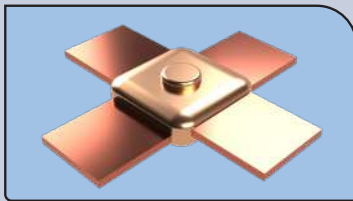
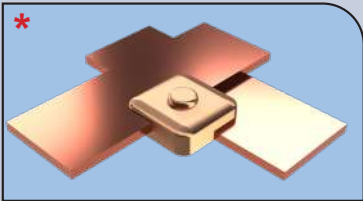
(SS) connection consists two wires welded into each others end .

SS connection Suited for 70mm wires

Conductors (W)	16	25	35	50	70	95	120	150	185	240	300
Powder & Handle	C32 HC-80	C32 HC-80	C45 HC-80	C65 HC-80	C65 HC-80	C65 HC-80	C90 HC-80	C115 HC-80	C150 HC-80	C200 HC-80	C200 HC-80

# EB

**\*EB Exception** : weld would not cover the whole confliction area on 50mm tapes .



Order Code : **EB-S**

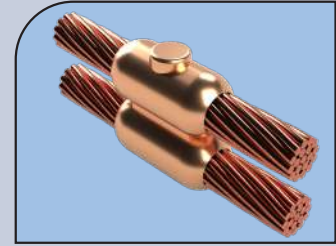
Coding Example : **EB25X3**

(EB) connection consists of two crossover Tapes .

EB connection suited for 2 25X3mm tapes

Both tape sizes (S)	20x2	20x3	20x5	25x2	25x3	25x5	30x2	30x3	30x5	*50x2	*50x3	*50x5
Handle & CRT	C90 HC80	C90 HC80	C115 HC80	C115 HC80	C115 HC80	C150 HC80	C150 HC80	C150 HC80	C90 HC80	C90 HC80	C90 HC80	C90 HC80

# PT



Order Code :PT**B-T** Coding Example : PT70-70

(PT) connection consists of 2 parallel welded wires    PT connection suited for two 70mm wires

Bottom conductor size (B)	Top conductor size (T)										
	16	25	35	50	70	95	120	150	185	240	300
16	C65 HC-80										
25	C65 HC-80	C45 HC-80									
35	C65 HC-80	C65 HC-80	C90 HC-80								
50	C90 HC-80	C90 HC-80	C90 HC-80	C115 HC-80							
70	C65 HC-80	C65 HC-80	C90 HC-80	C90 HC-80	C90 HC-80						
95	C90 HC-80	C90 HC-80	C90 HC-80	C115 HC-80	C115 HC-80	C115 HC-80					
120			C115 HC-80	C115 HC-80	C115 HC-80	C150 HC-80	C150 HC-80				
150			C150 HC-80	C150 HC-80	C150 HC-80	C150 HC-80	C200 HCX-80	C200 HCX-80			
185			C150 HC-80	C150 HC-80	C150 HCX-80	C200 HCX-80	C200 HCX-80	C200 HCX-80	C250 HCX-80	C200 HCX-80	
240				C200 HCX-80	C200 HCX-80	C200 HCX-80	C200 HCX-80	C250 HCX-80	C250 HCX-80	C300 HCX-80	
300				C200 HCX-80	C200 HCX-80	C200 HCX-80	C200 HCX-80	C250 HCX-80	C250 HCX-80	C300 HCX-80	C300 HCX-80

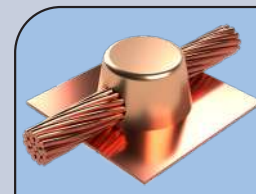
# HS

Order Code : **HSW**

Coding Example : HS50

HS connection with 50mm<sup>2</sup> wire

(HS) connection consists a wire welded on top of a plate



Conductor size (W)	16	25	35	50	70	95
Powder amount	C65	C65	C90	C90	C90	C90

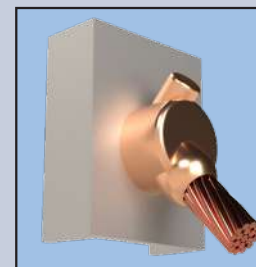
# VB

Order Code : **VBW**

Coding Example : VB35

VB connection suited for 35mm<sup>2</sup> wire

(VB) connection consists a wire welded to a structure .



Conductor	16	25	35	50	70	95
Powder & Handle	C65 HC-80	C65 HC-80	C65 HC-80	C115 HC-80	C115 HC-80	C115 HC-80

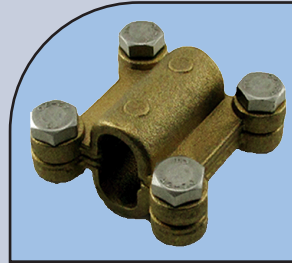
# TEST CLAMP

Order Code :  
HHWC-**S**

Coding Example :  
HHWC70

HHWC	Wire to wire test clamp
S	Wire size 35,50,...,120

Wire to wire test clamp suited for 70mm<sup>2</sup> wire

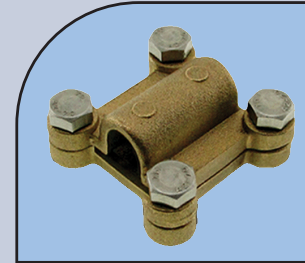


Tape to wire test clamp suited for 70mm<sup>2</sup> wire and 25x3 tape

TWTC	Tape to wire test clamp
T	Tape size 25x3, 20x3
W	Wire size 35,50,...,120

Order Code :  
TWTCT-**W**

Coding Example :  
TWTC25x3-70



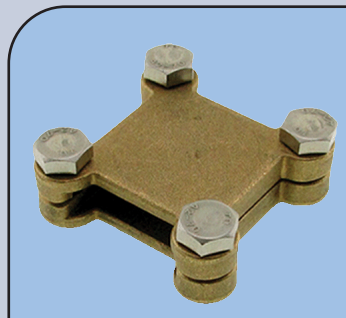
## CROSS CLAMP

Order Code :  
HHTC-**T**

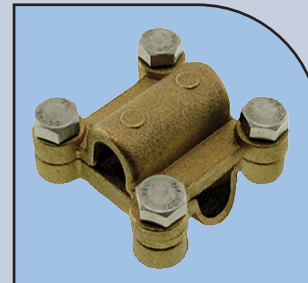
Coding Example :  
HHTC25x3

HHTC	Tape to tape test clamp
T	Tape size 20x3, 25x3

Tape to tape test clamp suited for 25x3 tape



Cross wire clamp suited for 70mm<sup>2</sup> wire



Order Code :  
CWCS

Coding Example :  
CWC70

CWC	Cross wire clamp
S	Wire size 35,...,120



# LIGHTNING MAST TOWER

Order Code :  
**TLMAFL**

Coding Example :  
MLM15

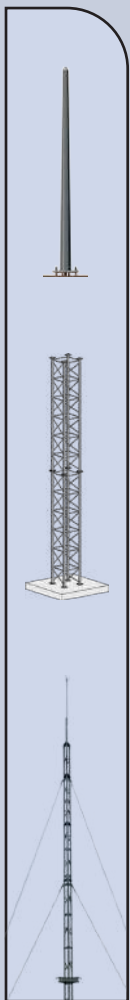
15 Meters long monopole lightning mast tower

(T) Tower type	M : Monopole G : Guyed L : Lattice
(LM) Lightning Mast Tower	Lightning Mast
(A) Accessories	L : Ladder LB : Ladder With Basket
(F) Foundation	F : Pre Fabricated Foundation
(L) Length (m)	3 ,... ,30

Monopole

Lattice

Guyed



# CROSS CLAMP

Order Code :  
**CRTC7**

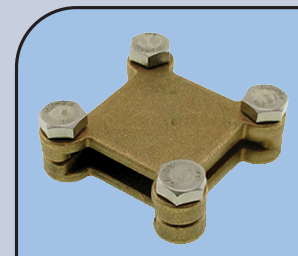
Coding Example :  
CRTC25x3

CRTC	Cross tape clamp
T	Tape size 30x3,25x3

Cross tape to wire clamp suited for 70mm<sup>2</sup> wire and 25x3 tape

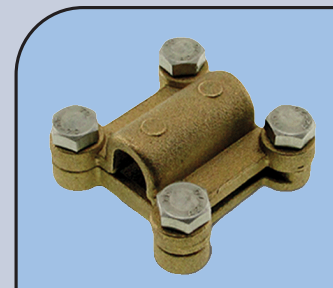
CWTT	Tape to wire cross clamp
S	Tape size 25x3 20x3
W	Wire size 35,...,120

Cross tape clamp suited for 25x3 tape



Order Code :  
**CWTTSW**

Coding Example :  
CWTT70-25x3



# MULTI CLAMP

# CABLE LOG

Order Code :

**M-EMC-S**

Coding Example :

**C-EMC70**

Copper multi clamp  
suited for 70mm<sup>2</sup> wire



Material (M)	EMC	Sizing (S)
Copper (C) Stainless steel (S) Hot dip galvanized (H)	Multi clamp	25,35,50,70



Order Code : **NCLS-H**

Coding Example : CL16-8

Copper multi clamp suited for 70mm<sup>2</sup> wire

Coding	N	CL	S	H
Descriptions	Hole quantity (1,2) (1 doesnt get mentioned)	Cable log	Cable log size (16,25,35,50...300)	Hole size (6,8,10,...)

# POLYPROPYLENE CLIP (NCC)

This is a clamp for isolating and restraining , down conductors on structure without making any conductive connection or bonding .

NCC clamps are manufactured in a single size , suited for +3mm thickness and +30mm width wires/round wires , that equivalentents to 70mm cross section area .



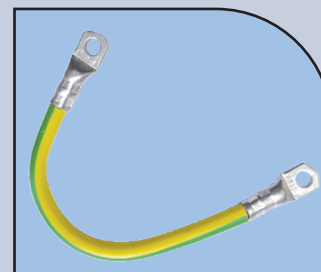
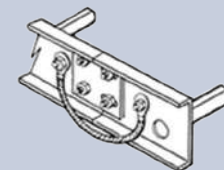
# BONDING JUMPER CABLE TRAY

Order Code :

**BJCS-L**

Coding Example :

**BJC16-20**



16mm<sup>2</sup> bonding jumper cable tray with 20cm length

Coding	BJC	S	L
Descriptions	Bonding jumper cable tray	Size (10,16,25,...) mm <sup>2</sup>	Length (20,25,30,...) cm

# O CLAMP

Wire to rod clamp

O clamps are manufactured by (cz112) copper based alloy with fairly high mechanical resistance . this product contains a body and a single bolt

Wire size range mm <sup>2</sup>	Rod diameter mm <sup>2</sup>	Coding
16-70	16	RWC16
95-150	20	RWC20



# WIRE TO STRUCTURE CLAMP

Wire-to-structure clamp is used for grounding metal structures such as poles or power substations, which connects a wire conductor with a bolt and nut connection .



Wire size range	Coding
16-35	WSC35
50-70	WSC70
95-150	WSC150

# TAPE TO ROD CLAMP

Order Code  
RTC**D-S**

Coding Example :  
RTC16-25x3

Rod to tape clamp suited for 16 mm<sup>2</sup> rod to 25x3 tape .

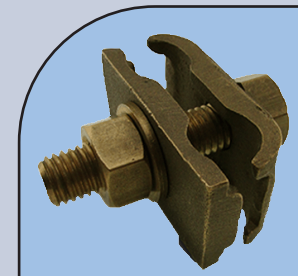


RTC	D	S
Rod to tape clamp	Rod diameter 16 ... 25	Tape size 25x3 & 30x3

# GROUNDING 2WAY CLAMP

Grounding 2 way clamps are used to create a parallel connection between 2 bare wires and also a equipotential bonding between ground and structures .

Wire size range	Coding
16-35	2WC35
50-120	2WC120
150-300	2WC300



# TAPE CLAMP

Tape to wall clamp

Order Code

**SPTCS**

Coding Example :

SPTC25x3

Tape to wall clamp suited for 25x3 tape



SPTC	S
Double hole wire or cable clip	Tape size 25x3,30x3 20x3

# CABLE CLAMP

Wire & cable to wall clamp

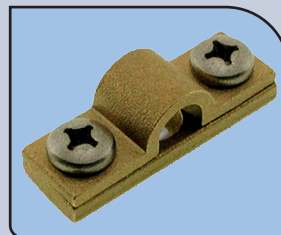
Order Code

**DWCC-S**

Coding Example :

DWCC50

50 mm<sup>2</sup> wire to wall clamp



DWCC	S
Double hole wire or cable clip	Wire size 16,25,35,50 70,95

# ONE HOLE CABLE CLIP

Order Code

**MWCCS**

Coding Example :

SWCC50

50mm<sup>2</sup> wire to wall clamp



M	Material (S) steel (C) copper
WCC	One hole cable clip
S	Wire size 16,25,35,50 70,95

# U CLAMP

Order Code

**UCMR-S**

Cable to rod clamp

Coding Example :

UCSS16-70

Stainless steel u clamp suited for 16 mm<sup>2</sup> diameter rod and 70mm<sup>2</sup> wire .



UC	M	R	S
U clamp	Material (SS) Stainless steel (SC) Copper coated steel (CD) Dacromar coated	Rod size 16 ... 20	Wire size 16 ... 300

# C CLAMP



Coding Example :

T-122 : C clamp suited for 70 to 50 mm<sup>2</sup> wires

Order Code

T-122

Main conductor	Secondary conductor												
	6	10	16	25	35	50	70	95	120	150	185	240	300
6	T-11												
10	T-16	T-20											
16	T-20	T-26	T-44										
25	T-44	T-44	T-44	T-44									
35	T-44	T-44	T-60	T-60	T-76								
50	T-60	T-75	T-75	T-75	T-98	T-122							
70	T-76	T-76	T-98	T-98	T-122	T-122	T-154						
95	T-98	T-98	T-120	T-122	T-122	T-154	T-154	T-190					
120	T-154	T-154	T-154	T-154	T-190	T-190	T-240	T-240	T-288				
150	T-190	T-190	T-190	T-190	T-190	T-240	T-240	T-240	T-288	T-365			
185	T-190	T-190	T-240	T-240	T-240	T-240	T-288	T-288	T-365	T-365	T-365		
240	T-240	T-240	T-240	T-240	T-240	T-288	T-288	T-288	T-365	T-365	T-450	T-450	
300	T-365	T-365	T-365	T-365	T-365	T-365	T-450	T-450	T-450	T-560	T-560	T-560	T-700
400				T-450	T-450	T-560	T-560	T-560	T-560	T-560	T-700	T-700	
500					T-560	T-700	T-700	T-700	T-700	T-700	T-700	T-700	

# EARTH ENHANCING COMPOUND

Order Code :  
 (MLO1 For Bentonit) (ML02 For Carbon base low ohm material)  
 (MLO3 For Conductive concrete)

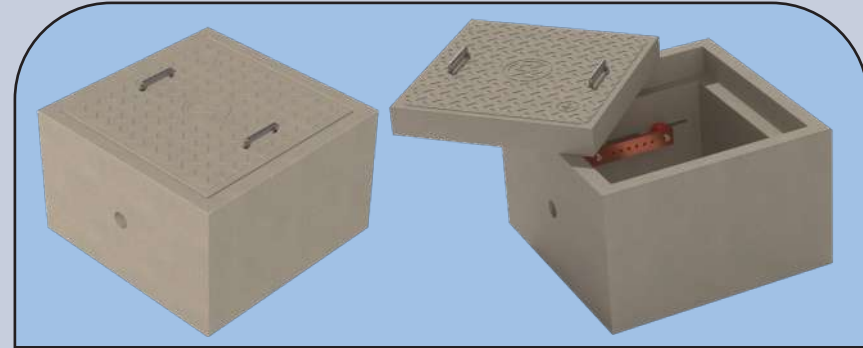


Product	Monthly maintenance (irrigation)	Application
MLO1	Mandatory	Fills the gap between earth and electrode
MLO2	Optional	Fills the gap between earth and electrode
MLO3	Not needed	concreting structures which need low resistance

Product	Ingredients	Weight	Dry density
MLO1	Bentonit	20kg	1002 kg/m <sup>3</sup>
MLO2	Carbon base low ohm material	15kg	1146 kg/m <sup>3</sup>
MLO3	Conductive concrete	15kg	2400 kg/m <sup>3</sup>

# INSPECTION EARTH PIT

Order Code **EIPDML**      Coding Example : **EIP333CL**      300x300x300 concrete inspection earth pit with disconnection link



EIP	D	M	L
Earth inspection Pit	Dimensions according to the table below	Material C : concrete H : hot dip galvanized	Disconnection link

Size	Dimensions	Weight
1	300mm(L)x300mm(W)x300mm(D)	38.5 kg
2	400mm(L)x400mm(W)x400mm(D)	80.4 kg
4	650mm(L)x650mm(W)x400mm(D)	255 kg

# LIGHTNING COUNTER

[SCHIRTEC.co](http://SCHIRTEC.co)



IP67 Suitable for Outdoor Installation , no power Supplies Required Max 6 Digits

Dimensions	Order code
11,3 x 7,0 x 4,8 cm	SLSC-10

# LIGHTNING TESTER

[SCHIRTEC.co](http://SCHIRTEC.co)

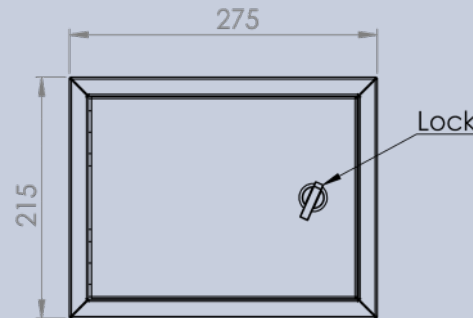
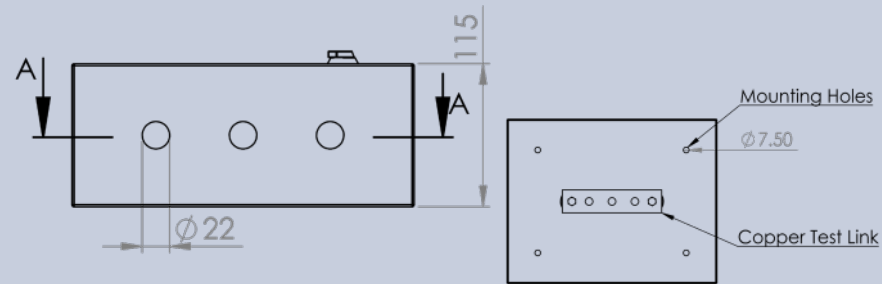


9V battery powered ,Special Port for Schirtec E.S.E

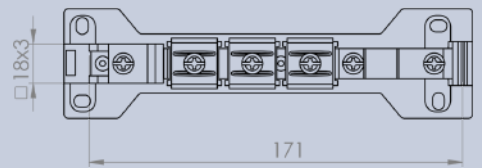
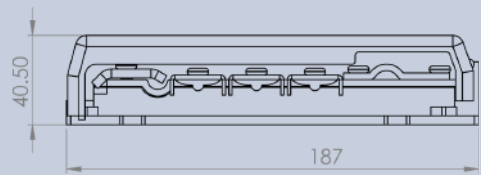
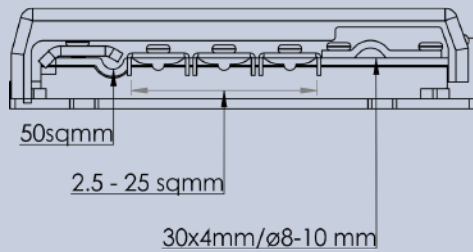
Dimensions	Order code
10,5 x 7,5 x 2,8 cm	SA-1T

# TEST BOX

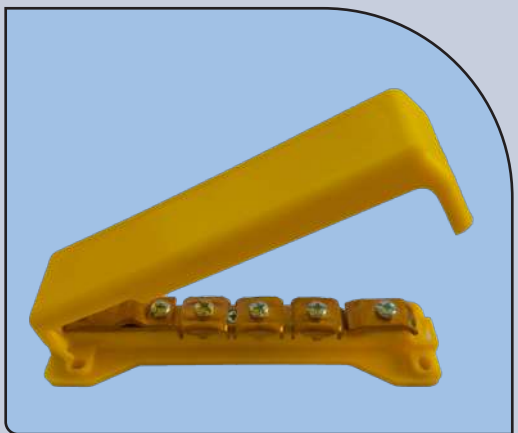
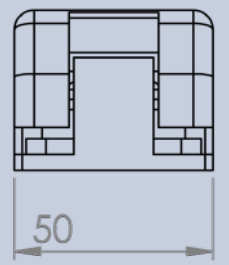
Test box places in between lightning protection & earthing systems down conductors  
 TSZ manufactured test box contains an additional door lock and exterior use capability



# EQUIPOTENTIAL BONDING BAR



Equipotential bonding bars contain a local terminal that can connect up to 12 branches for creating a local equipotential bonding center . This product has a polyethylene body which is installed by 4 screws and is suited for indoor use only . the included bonding tape inside the product is a copper tape which can be replaced by aluminum , copper coated steel and stainless steel



Order code	Dimensions	Wire terminals	Tape terminals	Material
EBB	187x50x40.5 mm	6x(2.5-25mm <sup>2</sup> ) 2x(Ø8-10mm)	30x2mm 30x25mm	Copper (contact bar)



# TAPE CLIP

Order Code : **MSTCS**

Coding Example : SPTC25x3

Stainless steel 25x3 tape clip



M	Material : C (copper) , S (stainless steel) A (aluminium) B (brass)
STC	Simple tape clip
S	Dimensions (25x3 , 30x3 ... )

# BRASS CONNECTOR

Dimensions	Order code
16-35	SB35
50-70	SB70
95-120	SB120

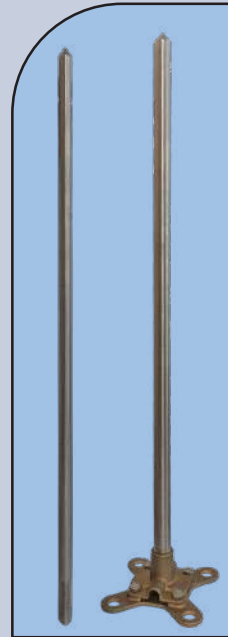
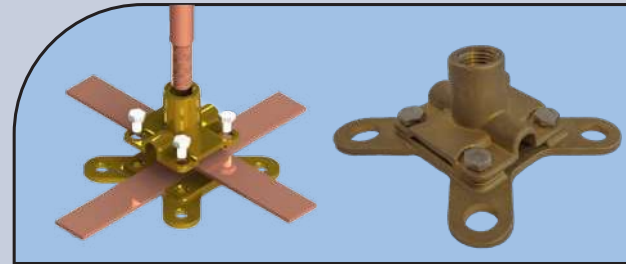


# AIR TERMINAL ROD AIR ROD BASE

Order Code  
**ATR-DMLS**

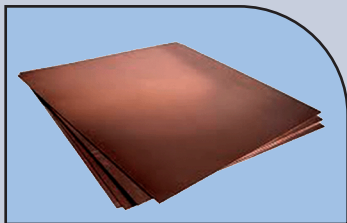
Coding Example :  
**ATR-16SST1500S**

16mm stainless steel single point 1500cm long air terminal rod



ATR	D	M	L	S
Air terminal rod	Diameter 16 & 20 mm	Material Stainless steel (SST) Hot dip galvanized (HDG) Nikel & chrome coated Copper (CNC)	Length 50 up to 1500 cm	Rod end type Single Point (S)

# EARTH PLATE

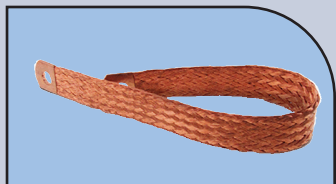


Dimensions	Order code
1000x500x20	CEP664
1000x500x20	CEP665
1000x600x40	CEP774
1000x800x30	CEP554

## FLEXIBLE BRAIDED COPPER EARTH BOND

Order Code  
**TFCTS-L**

Coding Example :  
TFCT25X3-20



Tin plated 25x3 flexible copper tape with 20cm length .

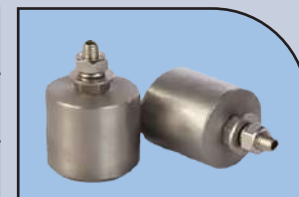
<b>T</b>	Tin plated
<b>FCT</b>	FCT : Copper tape FAT : aluminium tape
<b>S</b>	Size : 20x3 , 25x3 ....
<b>L</b>	Length : Starting from 100 mm

# EQUIPOTENTIAL BONDING EARTH BOSS

Order Code : BEB**SMDXL**

Coding Example : BEBM8SS40x50

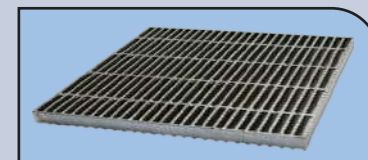
<b>BEB</b>	Equipotential bonding earth boss
<b>S</b>	Bolt size : M6 M8 M10
<b>M</b>	Material : ss (stainless steel), s (steel) h (hot deep galvanized)
<b>D</b>	Diameter : 40,50,60
<b>L</b>	Length 40,50,60



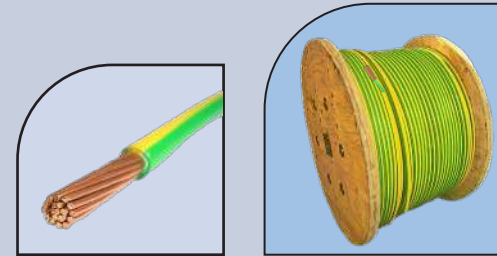
Stainless steel equipotential bonding earth boss with 40mm diameter , 50mm length and m8 bolt size

## GROUNDING EQUIPOTENTIAL MATS

Dimensions	Order code
1000x500x20	EM152
1000x500x20	EM153
1000x600x40	EM164
1000x800x30	EM183
1200x800x30	EM1283



# Y/G PVC COVERED COPPER CABLE



Order Code : **CPCWS**

Coding Example : **5PCW95**

Flexible PVC-insulated yellow/green stranded Copper Wire With Size 1×95 mm<sup>2</sup>

C	PCW	S
Class 5=Flexible pvc cable 2=Hard pvc cable	PVC covered cable	Cable size

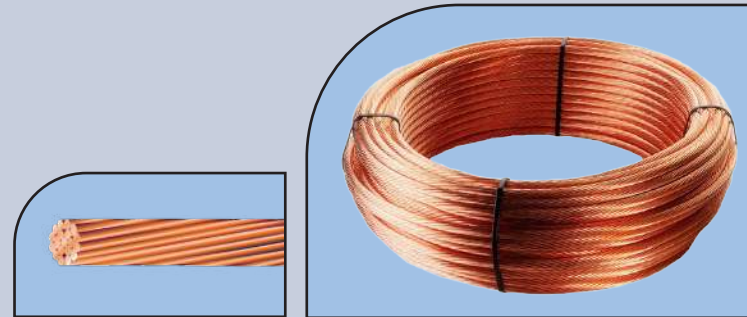
Nominal cross section (mm <sup>2</sup> )	Insulation thickness (mm)	External diameter (mm)	Weight kg/km	Allowable current (A)	Conductor electrical resistance		Voltage (v)	Standard length (m)	Order code
					@20°C	@70°C			
1x16	1	8	180	98	1.210	1.450	450/750	100	PCW16
1x25	1.2	9.8	280	129	0.780	0.933	450/750	100	PCW25
1x35	1.2	11.4	380	158	0.554	0.663	450/750	100	PCW35
1x50	1.4	12.8	540	198	0.386	0.462	450/750	1000	PCW50
1x70	1.4	15.3	740	245	0.272	0.325	450/750	1000	PCW70
1x95	1.6	18.2	1000	292	0.206	0.246	450/750	1000	PCW95
1x120	1.6	19.7	1240	344	0.161	0.193	450/750	500	PCW120
1x150	1.8	21.1	1500	391	0.129	0.154	450/750	500	PCW150
1x185	2	25	1905	448	0.106	0.125	450/750	500	PCW185
1x240	2.2	27.8	2460	528	0.080	0.096	450/750	500	PCW240

# BARE COPPER CONDUCTOR

Order Code : **CBWS**

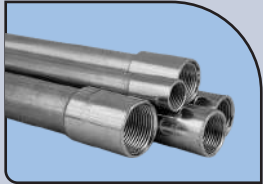
Coding Example : **CBW70**

70mm<sup>2</sup> bare copper wire



cross section (mm <sup>2</sup> )	Number of strands (mm)	Wire diameter (mm)	Breaking load (kN)	Weight	Normal added load (N/m)	Resistance @20°C	Order code
15.89	7x1.70	5.1	6.4	142.4	5.41	1.1280	CBW16
24.25	7x2.70	6.3	9.7	217.3	5.51	0.7391	CBW25
34.36	7x2.70	7.5	13.8	308	5.61	0.5215	CBW35
49.48	7x3.70	9	19.8	443.5	5.75	0.3622	CBW50
65.81	19x2.10	10.5	26.9	593.2	5.9	0.2738	CBW70
93.27	19x2.50	12.5	38.1	840.7	6.25	0.1932	CBW95
116.99	19x2.80	14	47.8	1055	6.4	0.1540	CBW120
147.11	37x2.25	15.7	60.1	1334	6.58	0.1233	CBW150
181.62	37x2.50	17.5	74.2	1647	6.75	0.0998	CBW185
242.54	61x2.25	20.2	89	2209	7.02	0.0753	CBW240
299.43	61x2.50	22.5	122.3	2725	7.25	0.0610	CBW300

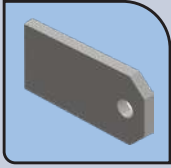
# HOT DIP GALVANIZED CONDUIT PIPE



**Coding Example : PG11** Hot dip galvanized conduit pipe with 18mm diameter and 1.2mm thickness

Length	Weight (Kg/m)		Thickness		Outer (OD) diameter		Pipe size		Order code	
	DIN49020	BS4568	DIN49020	BS4568	DIN49020	BS4568	DIN49020	BS4568	DIN49020	BS4568
6	0.53	0.318	1.2	1.6	18	16mm	11	16	PG11	M16
6	0.59	0.791	1.2	1.6	20.4mm	20mm	13.5	20	PG13.5	M20
6	0.65	1.007	1.2	1.6	22.2mm	25mm	16	25	PG16	M25
6	0.822	1.308	1.2	1.6	28.3mm	32mm	21	32	PG21	M32
6	1.127	2.044	1.4	2	37mm	40mm	29	40	PG29	M40
6	1.61	2.583	1.4	2	47mm	50mm	36	50	PG36	M50
6	3.0	3.281	2	2	60.3mm	63mm	48	63	PG48	M63

# WELDING STEEL EARTH LUG



<b>WSL</b>	Welding steel Earth lug
<b>H</b>	Hot dip galvanized
<b>S</b>	Cable lug hole size
<b>D</b>	Dimensions

Order Code  
**WSLHS-D**

Coding Example  
**WSLH8-120x80x5**

Hot dip galvanized 120x80x5 welding steel earth lug with 8mm diameter hole

# SELF ADHESIVE INSULATION TAPE (Black)

Length	10
Thickness	0.76mm
Width	19mm
Order code	VPT



# GREEN PLASTIC COMPOUND

- Solid protection Prevents moisture , fume and ingresson.
- Non toxic Manufactured from natural prouducts.
- Easy to use Shaped around Irregular surfaces with ease  
Simple to remove if necessary, Remains soft and plible indefinitely.

Order code	Weight
GPC	1 kg



# SELF ADHESIVE INSULATION TAPE (Yellow-Green)

Length	10
Thickness	0.13mm
Width	19mm
Order code	YGT





# Protecting your infrastructure 24/7



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ISO 9001  
Certificate no: 4796586

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