



CORROSION CONTROL

PRODUCTS CATALOGUE

CATHODIC
PROTECTION
MATERIALS





CORROSION CONTROL

CATHODIC PROTECTION MATERIALS CATALOGUE INDEX

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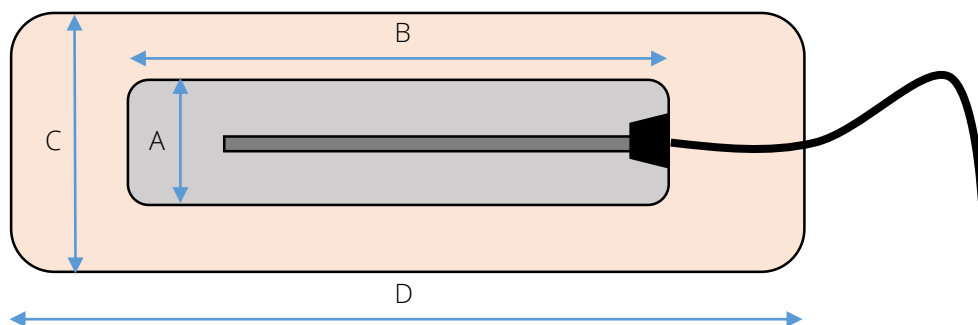
MAGNESIUM ANODES STANDARD TYPE

Magnesium Anodes are used to apply Cathodic Protection to a variety of structures. They are manufactured in a comprehensive range of shapes and sizes. The magnesium is available in two grades, BAC High purity ISOROD, and BAC ISOMAG.

The anode casting has a central steel insert to ensure even dissipation of the anode material over time. The cable connection is brazed to the steel insert and epoxy resin encapsulated.

DATASHEET 1.1

MAG ANODES



Anode Type	Net Weight		Nominal Dimensions		Packaged Dimensions		Total Packaged Weight
	Lbs	Kg	A mm	B mm	C mm	D mm	Kg
41	9	4.1	89	352	133	508	12.3
77	17	7.7	120	430	190	610	20.5
100	22	10	115	505	175	740	17.7
145	32	14.5	140	550	216	711	30.9
218	48	21.8	140	765	216	1100	46
273	60	27.3	120	1450	190	1680	50

Performance can be improved by retaining moisture thus reducing the resistivity of the electrolyte local to the anode. To help do this, pipeline anodes can be supplied packaged in a cotton bag containing a backfill of Gypsum, Bentonite and Sodium Sulphate.

Alternatively the backfill can be provided loose, in a variety of compositions, for site application.

Standard Backfill Composition:

Powdered Gypsum 75%
Granular Bentonite 20%
Sodium Sulphate 5%

The anode and backfill are contained in a cotton bag.



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MAGNESIUM ANODES STANDARD TYPE

DATASHEET 1.1

MAG ANODES



HOW TO ORDER

Specify Anode Weight or Model (i.e. 41)
Specify Anode Voltage (i.e. 1.5V or 1.7V)
Specify Cable Type (i.e. XLPE/PVC)
Specify Cable Length (i.e. 5m)
Specify Quantity Required

If you have any special requirements please do not hesitate to contact us if your desired option is not detailed.

ALLOY COMPOSITION

Specification ISOMAG (1.7V)

Manganese 0.5 - 1.3%
Aluminium 0.010% max
Copper 0.02% max
Iron 0.03% max
Nickel 0.001% max

Total any other single impurity 0.05% max
Total of all other impurities 0.30% max
Magnesium Remainder

Potential (Ag/AgCl reference) 1.7 volts
Capacity (Ampere hours) 1230 A/hr/Kg

Specification ISOROD (1.5V)

Aluminium 5.3 - 6.7%
Zinc 2.5 -3.5%
Manganese 0.25% min
Iron 0.005% max
Silicon 0.30% max
Copper 0.08% max
Nickel 0.003% max
Total of all other impurities 0.30% max
Magnesium Remainder

Potential (Ag/AgCl reference) 1.5 Volts
Capacity (Ampere hours) 1230 A/hr/Kg

CABLE

A range of cables are available with typical insulation and sheathing as follows :

- XLPE/PVC or XLPE/PVC/SWA/PVC
- HMWPE
- PVDF/HMWPE
- EPR CSP

Cable sizes are available between 4mm² and 25mm² as standard.

Outer Sheathing is generally available in Red or Black, custom colours available on request but can be subject to an M.O.Q.

Information provided is liable to change without prior notice.



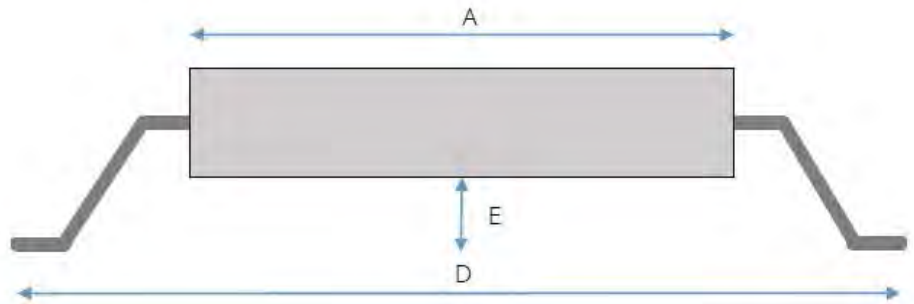
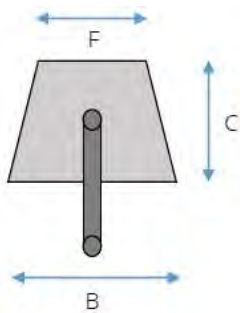
MAGNESIUM ANODES TANK TYPE

Magnesium Anodes for tank / vessel internal / external protection applications. Anodes can be supplied in a range of sizes, weights and chemical composition to suit your application. Typically a round or flat bar steel insert is provided with a double crank arrangement for direct welding to the structure.

Should you require an alternative design we can always offer against your specific requirement.

DATASHEET 1.2

MAG ANODES



ALLOY COMPOSITION

Specification ISOMAG (1.7V)

Manganese 0.5 - 1.3%
Aluminium 0.010% max
Copper 0.02% max
Iron 0.03% max
Nickel 0.001% max

Total any other single impurity 0.05% max
Total of all other impurities 0.30% max
Magnesium Remainder

Potential (Ag/AgCl reference) 1.7 volts
Capacity (Ampere hours) 1230 A/hr/Kg

Specification ISOROD (1.5V)

Aluminium 5.3 - 6.7%
Zinc 2.5 - 3.5%
Manganese 0.25% min
Iron 0.005% max
Silicon 0.30% max
Copper 0.08% max
Nickel 0.003% max
Total of all other impurities 0.30% max
Magnesium Remainder

Potential (Ag/AgCl reference) 1.5 Volts
Capacity (Ampere hours) 1230 A/hr/Kg

Specification:

Aluminium Alloy Net weight	kgs
A Length	mm
B Width	mm
C Height	mm
D Insert Length	mm
E Stand Off Height	mm
F Width	mm



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MAGNESIUM RIBBON ANODE



DATASHEET

MAG RIBBON ANODE



Magnesium Ribbon Anodes are used to achieve cathodic Protection of well coated buried pipelines, internal protection of water tanks, pipeline casing sleeves, AC Mitigation and temporary cathodic protection. Suitable for use in soils and fresh water.

SPECIFICATION

Coil Length :	305m
Weight of Ribbon :	0.337kg/m
Size Of Ribbon :	19.05mm x 9.52mm
Diameter of Steel Core :	3mm

CHEMICAL COMPOSITION

Manganese :	0.5 - 1.3%
Aluminium :	0.01% max
Copper :	0.02% max
Iron :	0.03% max
Nickel:	0.001% max
Total of any other single impurity :	0.05% max
Total of all other impurities :	0.30% max
Magnesium :	Remainder

ELECTRICAL PROPERTIES

Open circuit potential (Cu/CuSO ₄ reference) :	-1.75 Volts
Closed circuit potential :	-1.58 to -1.62 Volts
Capacity :	1,290 Amp.hour/kg

TYPICAL CURRENT OUTPUTS

In seawater (25 Ohm.cm) :	2.5 A / linear m
In Soil (5000 Ohm.cm) :	12mA / linear m
In Fresh Water (15000 Ohm.cm) ;	4mA / linear m

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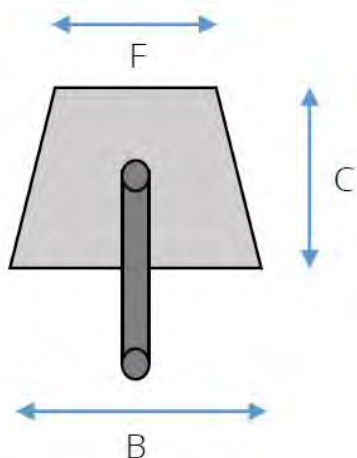
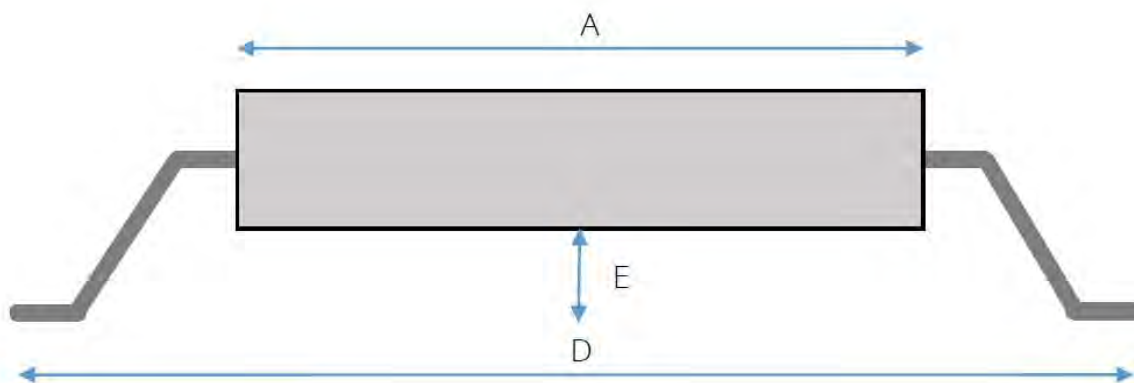
ZINC ANODES TANK TYPE

DATASHEET 1.4

ZINC ANODES

Zinc Anodes for tank internal protection applications. Anodes can be supplied in a range of sizes, weights and chemical composition to suit your application. Typically a round or flat bar steel insert is provided with a double crank arrangement (as shown below) for direct welding to the structure.

Should you require an alternative design we can always offer against your specific requirement



Chemical Composition

Grade	ASTM B418 Type 1	ASTM B418 Type II
Aluminium :	Balance	Balance
Cadmium :	0.02 – 0.07%	0.003% max
Iron (Fe) :	0.005% max	0.0014% max
Lead (Pb) :	0.006% max	0.003% max
Copper (Cu) :	0.006% max	0.002% max
Zinc (Zn) :	Balance	Balance
Other Impurities :	0.01% max	-

Specification:

Zinc Alloy Net weight	kg
A Length	mm
B Width	mm
C Height	mm
D Insert Length	mm
E Stand Off Height	mm
F Width	mm



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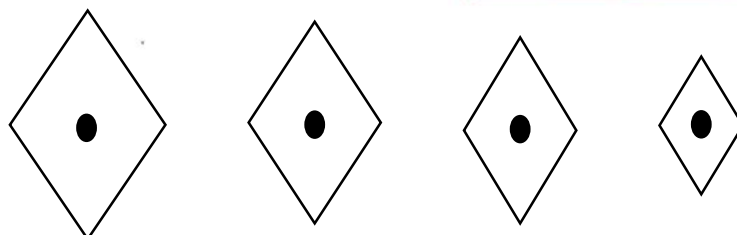
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ZINC RIBBON ANODES

DATASHEET 1.5

ZINC RIBBON

Zinc anodes provide a very simple, cost effective, maintenance free method of corrosion control for buried or immersed metals like iron, steel, aluminium, copper, etc. In a continuous ribbon from containing a steel wire core, zinc has been a highly effective and economical method of protecting a wide variety of underground and underwater metallic systems for over 20 years.



PRODUCT DATA	SUPER	PLUS	STANDARD	SMALL
Cross Section	25mm x 32mm	16mm x 22mm	13mm x 14mm	9mm x 12mm
	1" x 1 1/4"	5/8" x 7/8"	1/2" x 9/16"	11/32" x 15/32"
Weight	3.57kg/m	1.79kg/m	0.89kg/m	0.37kg/m
	2.4lbs/ft	1.2lbs/ft	0.6lbs/ft	0.25lbs/ft
Diameter of Galvanised Wire Core	4.7mm	3.5mm	3.3mm	3mm
	0.185"	0.135"	0.13"	0.115"
Standard Coil Length	30.45m	60.9m	152.5m	305m
	100ft	200ft	500ft	1000ft
Standard Coil ID	910mm	910mm	300mm	300mm
	36"	36"	12"	12"
Packing	Steel Banded Random Wound Open Coils	Steel Banded Random Wound Open Coils	Wood Reels	Wood Reels

All dimensions and weights and nominal

ALLOYS & COMPOSITION

Meets the chemical requirements of MIL-A-18001J

- ASTM B418-95A Type I for seawater or brackish systems
- ASTM B418-95a Type II for onshore / soils.

Grade	Al %	Cd%	Fe%	Pb%	Cu%	Zn
ASTM B418 Type I	0.1-0.5	0.02-0.07	0.005	0.006	0.006	Balance
ASTM B418 Type II	0.005 max	0.003 max	0.0014 max	0.003 max	0.002 max	Balance



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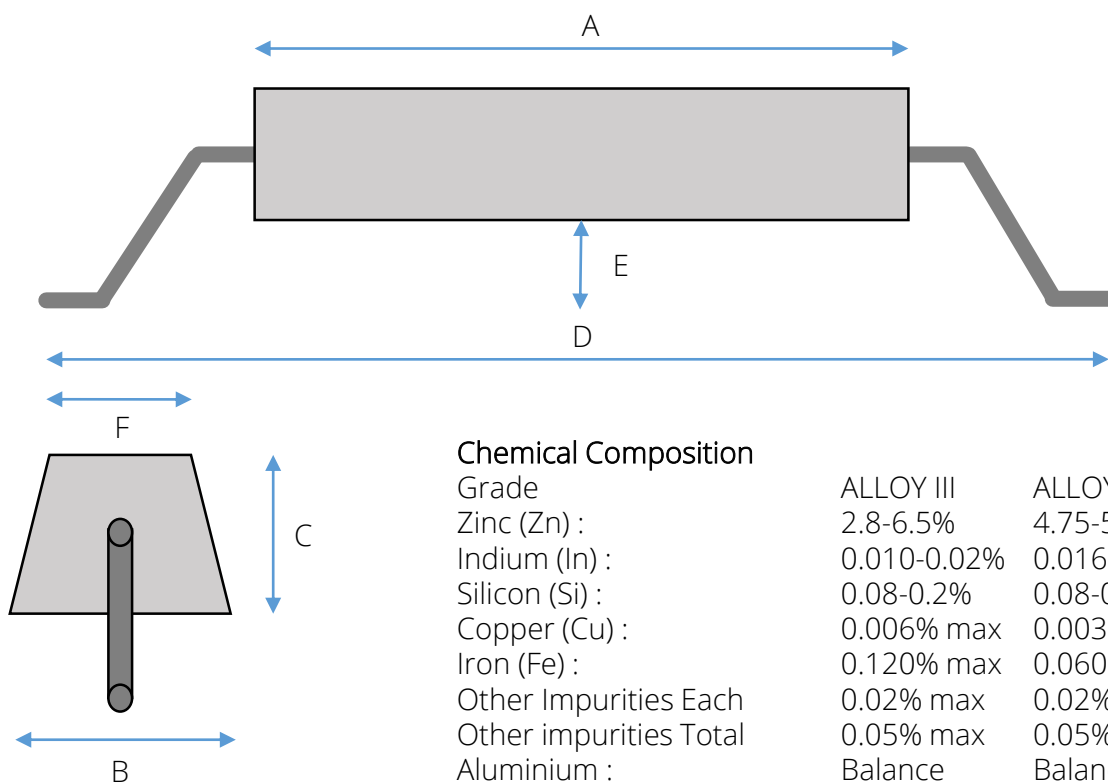
ALUMINIUM ANODES TANK TYPE

Aluminium Anodes for tank internal protection applications. Anodes can be supplied in a range of sizes, weights and chemical composition to suit your application. Typically a round or flat bar steel insert is provided with a double crank arrangement for direct welding to the structure.

Should you require an alternative design we can always offer against your specific requirement.

DATASHEET 1.6

ALUMINIUM TANK ANODES



Chemical Composition

Grade	ALLOY III	ALLOY CWIII
Zinc (Zn) :	2.8-6.5%	4.75-5.75%
Indium (In) :	0.010-0.02%	0.016-0.020%
Silicon (Si) :	0.08-0.2%	0.08-0.12%%
Copper (Cu) :	0.006% max	0.003% max
Iron (Fe) :	0.120% max	0.060% max
Other Impurities Each	0.02% max	0.02% max
Other impurities Total	0.05% max	0.05% max
Aluminium :	Balance	Balance
Capacity (Amp hr/kg) :	2,600	2,600

Electrochemical Properties

	ALLOY III	ALLOY CWIII
Electrode Potential :	-1.15V	-1.15V
Nominal Efficiency :	85%	85%

Specification:

Aluminium Alloy Net weight	kg
A Length	mm
B Width	mm
C Height	mm
D Insert Length	mm
E Stand Off Height	mm
F Width	mm



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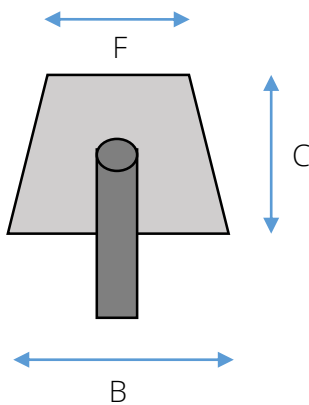
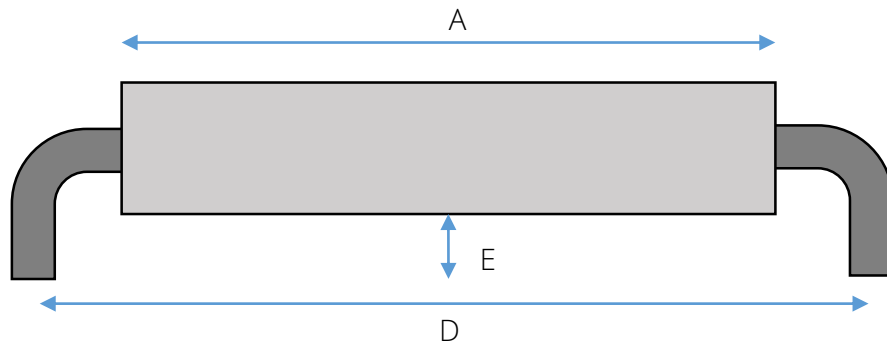
ALUMINIUM ANODES PLATFORM TYPE

Aluminium Anodes for platforms and large offshore structures. Anodes can be supplied in a range of sizes, weights and chemical composition to suit your application. Typically a steel pipe insert is provided suitable for direct welding to the structure.

Should you require an alternative design we can always offer against your specific requirement.

DATASHEET 1.7

ALUMINIUM
PLATFORM ANODES



Chemical Composition

Grade	ALLOY III	ALLOY CWIII
Zinc (Zn) :	2.8-6.5%	4.75-5.75%
Indium (In) :	0.010-0.02%	0.016-0.020%
Silicon (Si) :	0.08-0.2%	0.08-0.12%
Copper (Cu) :	0.006% max	0.003% max
Iron (Fe) :	0.120% max	0.060% max
Other Impurities Each	0.02% max	0.02% max
Other impurities Total	0.05% max	0.05% max
Aluminium :	Balance	Balance
Capacity (Amp hr/kg) :	2,600	2,600

Electrochemical Properties

	ALLOY III	ALLOY CWIII
Electrode Potential :	-1.15V	-1.15V
Nominal Efficiency :	85%	85%

Specification:

Aluminium Alloy Net weight	kg
A Length	mm
B Width	mm
C Height	mm
D Insert Length	mm
E Stand Off Height	mm
F Width	mm



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SILICON IRON ANODES ROD TYPE

DATASHEET 1.8

Si/Fe ANODES

A comprehensive range of BAC Silicon Iron Anodes is available in Rod & Tubular forms to suit impressed current Cathodic Protection of pipelines, tanks and marine structures.

Resistance to corrosion from a wide range of corrosive environments has resulted in the extensive use of standard 14.5% silicon iron alloy with 4.5% added chrome. More than 40 years of experience in the Cathodic Protection industry has given this material a fully proven performance record.

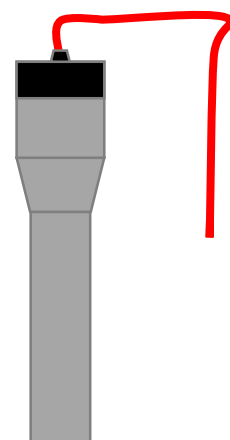


Alloy Composition

Specification Composition: Typical analysis by ASTM A518-86 Grade 3 and BS. 1591

Elements Compositions

Silicon (Si)	14.20 – 15.75 %
Manganese (Mn)	1.5 % Max
Carbon (C)	0.70 – 1.10 %
Chromium (Cr)	3.25 – 5.00 %
Molybdenum (Mo)	0.20 % Max
Copper (Cu)	0.5 % Max
Iron (Fe)	Balance



Consumption of Anode Material

In tests and real life installation, up to 99.8% of the anode material was consumed. Consumption figures of 88 % to 93.5% are common. The consumption rates are:

Environment	Current Density (Amp/m ²)	Consumption Rate (Kg/Amp-Year)
Coke Backfill	10 – 30	0.1
Fresh Water	10 - 30	0.15
Seawater	10 - 50	0.50
Soil	10 - 30	0.30

Suitable Installation

- Deep ground beds
- Shallow / Horizontal Groundbeds
- Seawater or Brackish water



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SILICON IRON ANODES ROD TYPE

DATASHEET 1.8

Si/Fe ANODES



Suitable for Installation in :

- Deep ground beds
- Shallow / Horizontal Groundbeds
- Seawater or Brackish water

Standard Sizes Of Solid Anodes

TYPE	Length (mm)	Dia (mm)	Weight (Kg)	Surface Area m ²
1.5"×60"	1520	38	12.7	0.20
2"×60"	1520	51	22.5	0.25
2.5"×60"	1520	63	34	0.32
3"×60"	1520	76	49	0.36

Dimensions and weights shown are nominal of +/- 5 per cent.
Non-standard sizes and weights of anode are available upon request.

Cable

The below mentioned cable are available upon customer's request.

XLPE/PVC, HMWPE, PVDF/HMWPE, EPR/CSPE

Assembly Method Cable to Anode

Taper Pin, Welding, or Lead Caulk available on request.

Canister Option

Anodes can be pre-packaged with metallurgical or calcined petroleum coke breeze backfilling a spiral wound galvanised steel canister on request.

Standard canister sizes are 200mm Dia x 2,000mm Length / 150mm Dia x 2,000mm Length.
Alternative sizes can be accommodated on request.

SILICON IRON ANODES TUBULAR TYPE

DATASHEET 1.9

Si/Fe ANODES

A comprehensive range of BAC Silicon Iron Anodes is available in Tubular form to suit impressed current Cathodic Protection of pipelines, tanks and marine structures.

Resistance to corrosion from a wide range of corrosive environments has resulted in the extensive use of standard 14.5% silicon iron alloy with 4.5% added chrome. More than 40 years of experience in the Cathodic Protection industry has given this material a fully proven performance record.



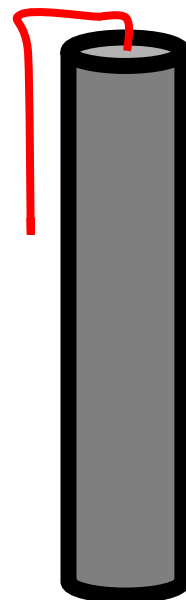
Alloy Composition

Specification Composition: Typical analysis by ASTM A518-86 Grade 3 and BS. 1591

Elements Compositions

Chemical Composition:

Silicon (Si)	14.20-15.75%
Manganese (Mn)	1.5% max.
Carbon (C)	0.70-1.10%
Chromium (Cr)	3.25-5.00%
Molybdenum (Mo)	0.20% max.
Copper (Cu)	0.50% max.
Iron (Fe)	balance



Typical Consumption Rates

Environment	Current Density (A/m ²)	Consumption Rate (Kg/A. Year)
Coke Backfill	10-30	0.1
Fresh Water	10-30	0.15
Seawater	10-30	0.5
Soil	10-30	0.3

Physical Properties

Tensile Strength	103 N/mm ²
Compressive Strength	689 N/mm ²
Brinell Hardness	520 HB
Density	7.0 g/cm ³
Melting Point	1300°C
Coefficient of Linear Expansion	1.86*10 ⁻⁵ /0C (0-1000C)



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SILICON IRON ANODES TUBULAR TYPE

DATASHEET 1.9

Si/Fe ANODES



Suitable for Installation in :

- Deep ground beds
- Shallow / Horizontal Groundbeds
- Seawater or Brackish water

Standard Sizes of Tubular Anode:

Type	Dimension (mm/inch)			Surface area (m ² /ft ²)	Weight (kg/lb)
	O.D	I.D	Length		
BAC-TS-1	56.0 (2.20)	37.0 (1.46)	2134 (84)	0.375 (4.04)	21.0 (46.3)
BAC-TS-2	66.0 (2.60)	42.5 (1.67)	2134 (84)	0.442 (4.76)	28.8 (63.5)
BAC-TS-3	68.6 (2.70)	42.5 (1.67)	2134 (84)	0.460 (4.95)	32.0 (70.5)
BAC-TS-4	96.0 (3.80)	76.0 (3.00)	2134 (84)	0.644 (6.93)	41.0 (90.4)
BAC-TS-5	122.0 (4.80)	88.0 (3.46)	2134 (84)	0.818 (8.80)	80.6 (177.7)
BAC-TS-6	122.0 (4.80)	100.0 (4.0)	2134 (84)	0.818 (8.80)	55.3 (121.8)
BAC-TS-7	56.0 (2.20)	37.0 (1.46)	1524 (60)	0.268 (2.89)	14.3 (31.6)
BAC-TS-8	66.0 (2.60)	42.5 (1.67)	1524 (60)	0.316 (3.40)	20.6 (45.5)
BAC-TS-9	96.0 (3.80)	76.3 (3.00)	1524 (60)	0.460 (4.95)	30.0 (66.1)
BAC-TS-10	122.0 (4.80)	88.0 (3.46)	1524 (60)	0.584 (6.29)	57.7 (127.1)
BAC-TS-11	122.0 (4.80)	100.0 (4.0)	1524 (60)	0.584 (6.29)	39.2 (86.4)

MIXED METAL OXIDE ANODES TUBULAR TYPE

DATASHEET 1.10

MMO ANODES



Mixed Metal Oxide / Titanium Tubular Anodes are manufactured using titanium, which meets ASTM B338 Grade 1 or Grade 2 standards, which has been coated with Mixed Metal Oxide coating.

The coating consists of IrO₂/Ta₂O₅ and is suitable for use in all cathodic protection applications.

Because mixed metal oxide anodes have an extremely low consumption rate, the titanium substrate remains constant throughout the design life of the anode.

COKE, SOIL AND FRESH WATER	CURRENT OUTPUT	DESIGN LIFE
3/4" x 48" (19mm x 1,220mm)	7 Amps	To be specified by client.
1" x 19.7" (25mm x 500mm)	4 Amps	
1" x 39.4" (25mm x 1,000mm)	8 Amps	
1" x 48" (25mm x 1,220mm)	3.5 Amps *	
1" x 60" (25mm x 1,500mm)	4.5 Amps *	
1.25" x 48" (32mm x 1,220mm)	12 Amps	
* Current outputs are de-rated for use in metallurgical coke breeze - 50Am ²		
SEAWATER	CURRENT OUTPUT	DESIGN LIFE
3/4" x 48" (19mm x 1,220mm)	45 Amps	To be specified by client.
1" x 19.7" (25mm x 500mm)	25 Amps	
1" x 39.4" (25mm x 1,000mm)	50 Amps	
1.25" x 48" (32mm x 1,220mm)	75 Amps	
ENVIRONMENT	MAX CURRENT DENSITY	DESIGN LIFE
CARBONACEOUS BACKFILL	4.6A/ft ² (50A/m ²)	To be specified by client.
CALCINED PETROLEUM BACKFILL	9.3A/ft ² (100A/m ²)	
FRESHWATER	9.3A/ft ² (100A/m ²)	
BRACKISH WATER	9.3-27.8A/ft ² (100-300A/m ²)	
SEAWATER	55.8A/ft ² (600A/m ²)	



BAC[®]

CORROSION CONTROL

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MIXED METAL OXIDE ANODES TUBULAR TYPE

DATASHEET 1.10

MMO ANODES



MMO/Ti Anodes can also be provided pre-packaged in canisters for ease of installation at site. Please specify as follows

- Size of canister
- Grade of backfill required
- Length of cable outside of canister

Tubular anodes are centre connected to the cable of your choice using either a compression interference fit connection, or BAC's centre crimp tube assembly, both of which give a low resistance and reliable connection.

Anodes can be design for a range of lifetimes and environments, the above figures are given for illustrative purposes. If you have a specific requirement please specify as follows :

Lifetime / Current Output / Electrolyte.



Strict quality control procedures are followed throughout the entire coating process, to guarantee proper coating adhesion and loading. Products are tested using to ensure production of the highest quality product, which is fundamental in every step of the manufacturing process.

APPLICATIONS

CANISTERED ANODES
ABOVE GROUND STORAGE TANKS
UNDERGROUND STORAGE TANKS
WATER STORAGE TANKS
HORIZONTAL GROUNDBEDS
TUBULAR AND SHEET PILES
VERTICAL GROUNDBEDS
DEEP WELL ANODE GROUNDBEDS



MIXED METAL OXIDE ANODES RIBBON TYPE

DATASHEET 1.11

MMO ANODES

A Mixed Metal Oxide / Titanium Ribbon Anode for Use In Fine Sand For Cathodic Protection Of Tank Bases. The anode is usually deployed in a Grid layout with Titanium Conductor Bars and Power Feed Connectors



Activation: Noble mixed metal oxides consisting of IrO₂ and Ta₂O₅.

Substrate material: Titanium to ASTM 265 Grade 1

Working environment: Evolution of O₂, Cl₂ or a combination of both

Nominal dimensions of solid ribbon:

- Width: 6.35 mm
- Thickness: 0.635 mm
- Standard coil length: 100m
- Standard coil weight: 1.51 kg
- Surface area of ribbon: 0.014 m² per linear metre
- Design life: In excess of 50 years when operating at an anode current density of 3 A/m².
- Current Output : 42 mA per linear metre maximum when operating at an anode current density of 3 A/m²

CONDUCTOR BAR

Conductor bar material: Titanium to ASTM 265 Grade 1

Nominal dimensions of Conductor Bar:

- Width: 12.7 mm
- Thickness: 0.9mm
- Standard Coil Length: 100m
- Standard Coil Weight: 5.12 kg



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MIXED METAL OXIDE ANODES RIBBON TYPE POWER FEED CONNECTION KIT

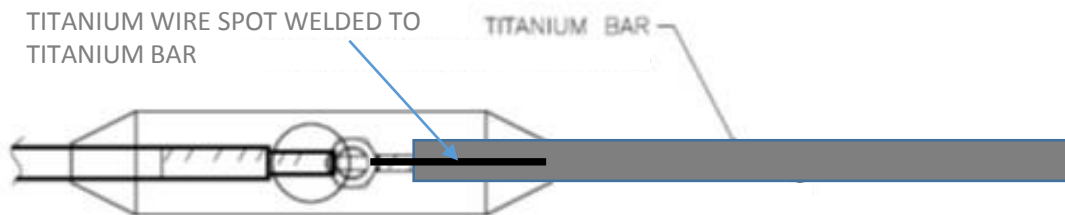
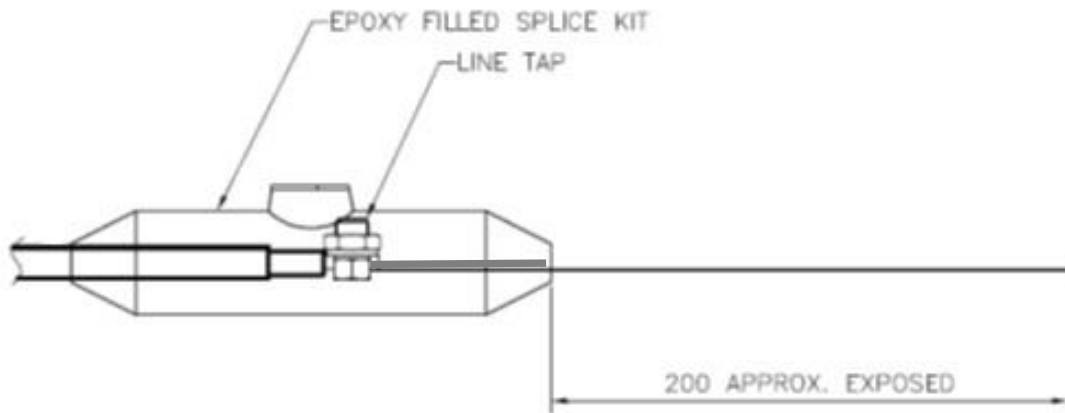
DATASHEET 1.11

POWER FEED
CONNECTOR



APPLICATION : For power feed connections on under tank grid anode system. The power feed connector connects the DC current feeder cable to the Titanium Conductor Bar.

Anode Power Feed Connector comprises 12.7mm width x 0.9mm Thickness x 200mm length Titanium Conductor Bar spot welded to a 100mm length of 3mm dia Titanium Wire. Encapsulation to the DC feeder cable is made by an epoxy splice kit and line tap connector generally as detailed below



SPOT WELDER

A portable spot welding kit that allows quick and easy connections between the MMO/Ti Tibbon Anode and Titanium Conductor Bar.

DATASHEET 1.11

SPOT WELDER



TECHNICAL SPECIFICATIONS

Max. Welding Thickness (mm)	1+1
Input Voltage	230 V
Dimensions	440x110x185 mm
Rated Power	1.2 kW
Max. Absorbed Power	6 kW



MIXED METAL OXIDE ANODES RIBBON MESH TYPE

Mixed Metal Oxide / Titanium Ribbon Mesh Anodes are used for the protection of steel reinforcing re-bar embedded in concrete. A range of Ribbon Mesh sizes are available according to the desired current output / lifetime required. Anodes are thoroughly tested and proven for long life applications.

DATASHEET 1.12

MMO RIBBON
MESH ANODES



MMO RIBBON MESH ANODE SPECIFICATIONS

MMO RIBBON MESH ANODE SPECIFICATIONS				
RIBBON MESH WIDTH	10mm	13mm	15mm	20mm
CURRENT RATING @ 110mA/m ²	2.8 mA/m	3.5 mA/m	3.9 mA/m	5.30 mA/m
EXPECTED LIFE	75 years in concrete			
CATALYST	Iridium / Tantalum Mixed Metal Oxide			
MAXIMUM ANODE / CONCRETE INTERFACE CURRENT DENSITY:				
FHWA LIMIT	110 mA/m ²	SHORT TERM LIMIT		220 mA/m ²
NOMINAL DIMENSIONS				
WIDTH	10 mm	13 mm	15 mm	20 mm
COIL LENGTH	100 m			
ANODE SURFACE PER UNIT LENGTH ANODE	0.025 m ² /m	0.032 m ² /m	0.036 m ² /m	0.048 m ² /m
APPROX. EXPANDED THICKNESS	1.30 mm			
DIAMOND DIMENSIONS	2.5 x 4.6 x 0.6 mm			
SHIPPING WEIGHT	1.4 Kgs per 100m coil	1.9 Kgs per 100m coil	2.85 Kgs per 100m coil	3.8 Kgs per 100m coil



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MIXED METAL OXIDE ANODES FLEXIBLE LINEAR TYPE

DATASHEET 1.13

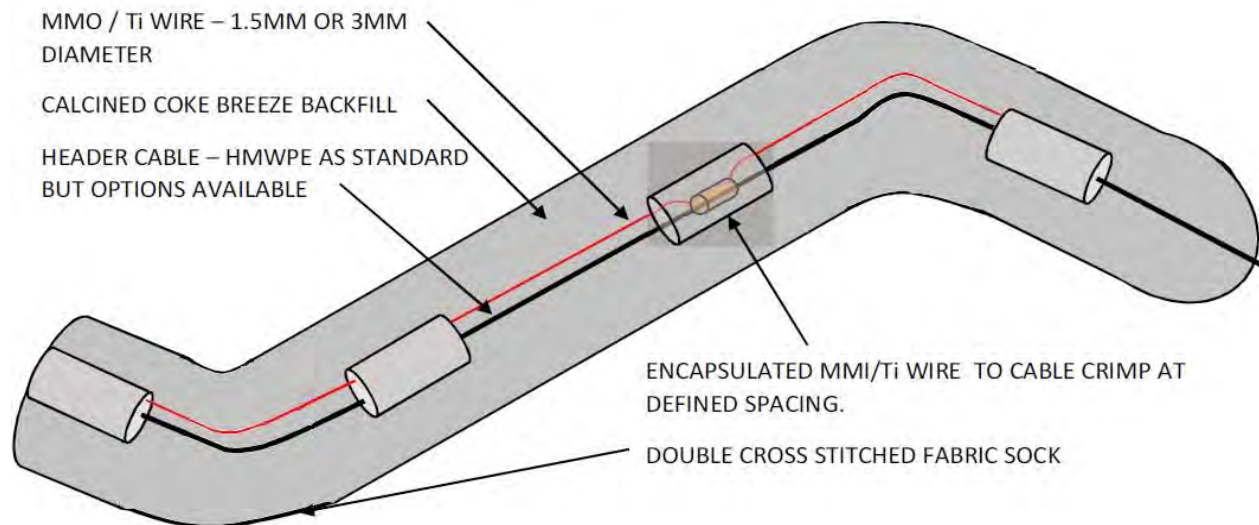
MMO ANODES

MMO Flexible Linear Anodes can be assembled using titanium Wire Anodes (ASTM B348), or Ribbon Anodes (ASTM B265) which have been coated with Mixed Metal Oxide Coating.

MMO Flexible Linear Anodes are a flexible, packaged linear anode assembly. The linear anode is packaged in a highly absorbent fabric sleeve. This sleeve is sewn using a double interlocking stitch, which prevents the seam from separating during installation, or when stored in high temperature conditions. The sleeve is filled using a high quality, calcined petroleum coke. The overall assembly is protected by a interwoven plastic braid to ensure the long term integrity of the product structure



LAYOUT OF FLEX ANODE PRODUCT



- ANODE TO CABLE CONNECTION IS RESIN FILLED AND HELIUM TESTED FOR AN EFFECTIVE SEAL OF CONNECTION
- AVAILABLE WITH OUTPUTS RANGING FROM 16mA/LIN. FT. TO 400mA/ LIN. FT.
- PACKAGED USING HIGH QUALITY CALCINED PETROLEUM COKE IN A HIGHLY ABSORBENT FABRIC SLEEVE.
- FABRIC SLEEVE IS AVAILABLE IN 1.5" to 3" DIAMETERS WITH A VARIETY OF LENGTHS AVAILABLE
- FLEXIBLE AND LIGHTWEIGHT MAKES FOR EFFICIENT INSTALLATIONS
- REDUCES REQUIREMENT FOR IN PLANT ISOLATION

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MIXED METAL OXIDE ANODES FLEXIBLE LINEAR TYPE

DATASHEET 1.13

MMO ANODES



TECHNICAL INFORMATION

Standard Current Ratings Available (output per linear meter / linear feet)	Lifetime (at full rated output) Lifetimes stated are nominal.
TYPE 52 – 52mA/m (~16mA/ft)	To be specified by client at enquiry stage or to be provided with 25 years life as standard.
TYPE 100 – 100mA/m (~30.5mA/ft)	
TYPE 250 – 250mA/m (~76mA/ft)	
Please note that FLEXIBLE LINEAR ANODES ANODES can be made according to client's custom specification. Please contact us for details stating current output required and design lifetime.	
Length (per sock):	Maximum 150m c/w 1m Of Cable either end.
Backfill :	Carbonaceous Backfill <ul style="list-style-type: none"> Type: Calcined petroleum coke Fixed Carbon: 99.8% Moisture: 0.07% Volatile: 0.02% Ash: 0.1% Particle Size: 1.0 mm (max.)
Anode materials :	Titanium Wire MMO/Ti Wire 1.5mm or 3mm ASTM B863 Grade 1 Or Titanium MMO/Ti Ribbon nominal dimensions: 6.35mm x 0.6mm ASTM B265 Grade 1
Sleeve Diameter :	38mm
Anode Cable :	To client specification but as standard #8 AWG(10mm ²) HMWPE with 1m free cable tail at either end for splicing/termination.
Custom Cable	Available as per client request in HALAR/HMWPE or PVDF/HMWPE
Cable To Wire / Ribbon Connection :	Every 10m as a minimum. Note that spacing will vary dependent upon several factors such as <ul style="list-style-type: none"> Anode used. Cable size Environment the Anode is placed in.

MIXED METAL OXIDE ANODES WIRE TYPE

DATASHEET 1.14

MMO ANODES

Product information

Mixed Metal Oxide (MMO) Wire is an anode designed for Impressed Current Cathodic Protection systems of steel structures. The MMO coating, with industrially proven lifetime characteristics, ensures an even current distribution.

The high purity Titanium metal substrate has proven chemical corrosion resistance, low system electrical resistance, and high mechanical integrity against breakage.

Uses

- Water and soil electrolytes
- Fresh, brackish or salt water
- Wide range of operating temperatures - 0 to <150°C

Technical Data

Substrate

Titanium ASTM B265 grade 1 Wire Catalyst Mixed Metal Oxides

Dimensions

External Diameter 1.5mm or 3mm
Length 100 m

Current Output Ratings

MMO Wire is coated according to your desired output / electrolyte / lifetime taking into account the recommended current densities stated below.

Environment	Max Current Density
Carbonaceous Backfill	4.6A/ft ² (50A/m ²)
Calcined Petroleum Backfill	9.3A/ft ² (100A/m ²)
Freshwater	9.3A/ft ² (100A/m ²)
Brackish Water	9.3-27.8A/ft ² (100-300A/m ²)
Seawater	55.8A/ft ² (600A/m ²)



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MMO DISCRETE ANODES

ISOMMO Discrete Anodes utilise an innovative mixed metal oxide and titanium composition with an integral gas venting system and are specifically designed for use in the cathodic protection of steel reinforced structures such as car parks, bridge decks and abutments and steel framed buildings.

ISOMMO Discrete Anodes prevent the build up of anodic gases with the integral venting system are versatile and have a 20 plus year service life at the specified current output.

DATASHEET 6.15

MMO DISCRETE ANODE



Anode Reference	Nominal Anode Diameter mm	Anode Length mm	Current Rating mA
ISO-D-10-100	10	100	2
ISO-D-10-150	10	150	3
ISO-D-10-190	10	190	4
ISO-D-13-220	13	220	6
ISO-D-16-240	16	240	8
ISO-D-19-250	19	250	10
ISO-D-25-575	25	560	30

ISOMMO Discrete Anodes are supplied in the above standard dimensions. Each anode is supplied with a 700 mm long titanium wire feeder. Other sizes are available to suit a required output. To order simply specify the anode reference as ISO-D-diameter-length. Sealed unvented anodes are also available to order with the reference ISO-DS-diameter-length



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TRANSFORMER RECTIFIERS OIL COOLED THYRISTOR CONTROL

BAC Corrosion Control Ltd design, manufacture and test a complete range of Transformer Rectifiers and Power Control systems under their Infinity Power brand name.



We cater for a wide range of specifications and functionality requirements and work with our clients to provide reliability, value and quality at every step of the process.

DATASHEET 1.16

TRS



The transformer rectifier is housed inside an oil tank and control box with the control and indication mounted on an internal hinged door. The control box is fitted with a viewing window to enable easy viewing of the control and indication of the rectifier. The user is protected from High voltages via door interlocked isolator

The power transformer, choke, diode assembly and shunt are mounted inside the oil tank. The primary MCB, DC fuses, thyristor firing PCB and AC/DC lightning arrestors are mounted on the back panel of the control box.

The DC voltmeter, DC ammeter, AC On lamp, door interlocked isolator, 4mm test points and controls are all mounted on the internal door.



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TRANSFORMER RECTIFIERS OIL COOLED THYRISTOR CONTROL

**DATASHEET
1.16**

TRS



Electrical Circuit

The transformer rectifier converts a three-phase or single phase AC power supply into a direct current which will be used for providing an impressed current for cathodic protection.

The AC input is supplied to the main transformer via the AC isolator and MCB. The transformer steps down the voltage and steps up the current to that required for the maximum DC output.

This reduced voltage is then applied across the thyristor assembly, which provides full wave rectification. The rectified voltage is then smoothed using an choke and capacitor network. Thyristor control is used to regulate the DC output voltage and current. To allow the thyristor circuit to produce the correct DC output it receives an input signal from the controller, it then ramps up/ramps down the output power until the desired output is reached.

To monitor the DC output the thyristor circuit receives a current feedback signal from the shunt resistor and a voltage feedback signal from the DC output terminals.

For the control and indication of the rectifier the voltmeter is feed directly from the DC output terminals and the signal for the ammeter is from a shunt resistor. The AC 'ON' lamp is fed direct from the power supply. Protection against high transient voltages is achieved using a varistor on both the AC and DC sides of the circuit.

Enclosure

The oil tank is constructed from 2 or 3mm (depending on size) thick mild steel sheet.

The oil tank is formed into shape and will be fully on outside seams.

The tank top will be Bolt down type. A single piece knock-on gasket shall be used to give an IP 65 rated seal between the oil tank and tank lid.

The oil tank and enclosure will be mounted onto a base frame that is constructed from 2 off 100mm U-channels. These channels will be welded to the oil tank and holes drilled into them to enable the tank to be fixed to a plinth.

All the components (diode assembly, transformer etc), which will be situated inside the oil tank, will be mounted onto a single chassis. It will be fitted with two lifting points and will be able to be unbolted from the oil tank above the oil level. All interconnecting wiring between the oil tank and control enclosures will be easily accessible from the top of the tank.



TRANSFORMER RECTIFIERS OIL COOLED THYRISTOR CONTROL

**DATASHEET
1.16**

TRS



Supply Voltage

Please state AC input rating as available at site.

Rated Output

To suit application, please request DC Voltage and Amperage as required.

Type

Outdoor, plinth mounting. safe area locations.

Control

Manual Thyristor Control as standard with option for automatic control available on request.

Temperature Range

Minimum: -10°C to Maximum: 55°C as standard. Lower and higher ambient temp on request.

Cooling

ONAN (oil immersed, natural convection air cooled)

Protection

The equipment is provided with the following devices as standard for protection against over voltage and over current conditions:

- Primary MCB
- Transient over voltage surge suppression on AC and DC sides of rectifier rated 8/20us waveform
- Semiconductor fuses on secondary of the transformer
- Voltmeter fuse
- Fuse fitted to the DC output
- Control circuit fuse
- Electronic over voltage & current limit

Optional features

- Remote monitoring and control equipment and software interface
- GPS timer interrupter
- RS485 telemetry
- Auto potential control from up to 8 reference electrodes
- Non synchronous timer interrupter
- Removable sunshade
- Datalogging
- 4-20mA transducers
- Volt free contact alarms

More features available on request.

Power Transformer

The transformer rectifiers are designed and built to BSEN 60076. The transformer has high conductivity copper windings on steel core and is varnish impregnated under vacuum after assembly. It is fitted with an earth shield situated between the primary and secondary windings.

Rectification

Silicon diodes / thyristors mounted on an aluminium heat sink and bridge connected for full wave rectification. Diodes and thyristors both have a reverse voltage of 1200V.



TRANSFORMER RECTIFIERS OIL COOLED THYRISTOR CONTROL

**DATASHEET
1.16**

TRS



Finish

A range of surface preparation and paint finishes are available, as standard we offer as follows:

Surface preparation: Shot Blast SA2.5
Interpon PZ790 zinc rich primer (75µm)
Interpon D1036 high performance polyester powder (75µm)
Finish Colour: Light Grey Shade (RAL 7035)

Cable Entry

The equipment is arranged to allow for bottom cable entry.

The AC cable enters the control box via a suitable rated gland and terminates at the AC terminals.

The DC cables enter the control box via a suitable rated gland and terminates at the M8 brass bolt DC terminals.

DC Ripple

Less than 5% from 5% to 100% of the DC output.

Meters

The equipment is fitted with HMI controller as Standard.

Optional digital or Analogue metering can be included as follows :

- DC voltmeter
- DC Ammeter
- AC Voltmeter
- Potential meter
- Hours run meter

Accessories

The equipment is supplied with the following as standard:

- Rating plate
- Operation and maintenance manual with circuit
- Test and inspection reports



TRANSFORMER RECTIFIERS OIL COOLED THYRISTOR CONTROL

**DATASHEET
1.16**

TRS



Tests

Insulation resistance test at 1000V DC between:

1. Input and earth
2. Output and earth
3. Input and output

No load test conducted at rated supply voltage and frequency:

1. No load input losses and current
2. Polarity
3. Operation of output voltage control

Load tests conducted at rated supply voltage and frequency, and at rated DC output voltage and current:

1. Full load input watts and current
2. Efficiency
3. Heatrun for a duration of 12 hours or until all temperatures have reached equilibrium

Function test to include test of the correct operation of the following:

- DC voltmeter
- DC ammeter
- mV meter
- Constant current operation
- Constant voltage operation
- Auto potential control

BAC Corrosion Control would be pleased to receive your valued enquiries and we look forward to being of assistance with your project.

Please email your enquiries to

sales@bacgroup.com



TRANSFORMER RECTIFIERS OIL COOLED VARIAC CONTROL

BAC Corrosion Control Ltd design, manufacture and test a complete range of Transformer Rectifiers and Power Control systems under their Infinity Power brand name.



We cater for a wide range of specifications and functionality requirements and work with our clients to provide reliability, value and quality at every step of the process.

DATASHEET 1.17

TRS



The transformer rectifier is housed inside an oil tank and control box with the control and indication mounted on an internal hinged door. The control box is fitted with a viewing window to enable easy viewing of the control and indication of the rectifier. The user is protected from High voltages via door interlocked isolator

The power transformer, choke, diode assembly and shunt are mounted inside the oil tank. The primary MCB, DC fuses, thyristor firing PCB and AC/DC lightning arrestors are mounted on the back panel of the control box.

The DC voltmeter, DC ammeter, AC On lamp, door interlocked isolator, 4mm test points and control dial are all mounted on the internal door.



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TRANSFORMER RECTIFIERS OIL COOLED VARIAC CONTROL

**DATASHEET
1.17**

TRS



The transformer rectifier converts a three-phase or single phase AC power supply into a direct current which will be used for providing an impressed current for cathodic protection.

The AC input is supplied to the main transformer via the AC isolator, MCB and variable transformer. The main transformer steps down the voltage and steps up the current to that required for the maximum DC output. The reduced voltage is then applied across the diode assembly which provides full wave rectification. To control the DC output a manually operated variable transformer is used.

For the control and indication of the rectifier the voltmeter is fed directly from the DC output terminals and the signal for the ammeter is from a shunt resistor. The AC 'ON' lamp is fed direct from the power supply. Protection against high transient voltages is achieved using a varistor on both the AC and DC sides of the circuit.

Enclosure

The oil tank is constructed from 2 or 3mm (depending on size) thick mild steel sheet.

The oil tank is formed into shape and will be fully on outside seams.

The tank top will be Bolt down type. A single piece knock-on gasket shall be used to give an IP 65 rated seal between the oil tank and tank lid.



The oil tank and enclosure will be mounted onto a base frame that is constructed from 2 off 100mm U-channels. These channels will be welded to the oil tank and holes drilled into them to enable the tank to be fixed to a plinth.

All the components (diode assembly, transformer etc), which will be situated inside the oil tank, will be mounted onto a single chassis. It will be fitted with two lifting points and will be able to be unbolted from the oil tank above the oil level. All interconnecting wiring between the oil tank and control enclosures will be easily accessible from the top of the tank.

TRANSFORMER RECTIFIERS

OIL COOLED

VARIAC CONTROL

Supply Voltage

Please state AC input rating as available at site.

Rated Output

Various to suit application, please request DC Voltage and Amperage as required.

Type

Outdoor, plinth mounting. safe area locations.

Control

Manual Variac Control

Temperature Range

Minimum: -10°C to Maximum: 55°C as standard.
Lower and higher ambient temp on request.

Cooling

ONAN (oil immersed, natural convection air cooled)

Protection

The equipment is provided with the following devices as standard for protection against over voltage and over current conditions:

- Primary MCB
- Transient over voltage surge suppression on AC and DC sides of rectifier rated 8/20us waveform
- Semiconductor fuses on secondary of the transformer
- Voltmeter fuse
- Fuse fitted to the DC output
- Control circuit fuse

Optional features

- Remote monitoring
- GPS timer interrupter
- Non synchronous timer interrupter
- Removable sunshade
- Datalogging
- 4-20mA transducers
- Volt free contact alarms

More features available on request.

Power Transformer

The transformer rectifiers are designed and built to BSEN 60076. The transformer has high conductivity copper windings on a steel core and is varnish impregnated under vacuum after assembly. It is fitted with an earth shield situated between the primary and secondary windings.

Rectification

Silicon diodes mounted on an aluminium heat sink and bridge connected for full wave rectification. Diodes and thyristors both have a reverse voltage of 1200V.

DATASHEET

1.17

TRS



TRANSFORMER RECTIFIERS OIL COOLED VARIAC CONTROL

**DATASHEET
1.17**

TRS



Finish

A range of surface preparation and paint finishes are available, as standard we offer as follows:

Surface preparation: Shot Blast SA2.5
Interpon PZ790 zinc rich primer (75µm)
Interpon D1036 high performance polyester powder (75µm)
Finish Colour: Light Grey Shade (RAL 7035)

Cable Entry

The equipment is arranged to allow for bottom cable entry.
The AC cable enters the control box via a suitable rated gland and terminates at the AC terminals.
The DC cables enter the control box via a suitable rated gland and terminates at the M8 brass bolt DC terminals.

DC Ripple

Less than 5% from 5% to 100% of the DC output.

Meters

The equipment is fitted with the following meters as standard:

- DC voltmeter
- DC ammeter

Optional metering can be included as follows :

- AC voltmeter
- Potential meter
- Hours run meter

Digital or Analogue meters can be specified as required.

Accessories

The equipment is supplied with the following as standard:

- Rating plate
- Operation and maintenance manual with circuit
- Test and inspection reports



TRANSFORMER RECTIFIERS OIL COOLED VARIAC CONTROL

**DATASHEET
1.17**

TRS



Tests

Insulation resistance test at 1000V DC between:

1. Input and earth
2. Output and earth
3. Input and output

No load test conducted at rated supply voltage and frequency:

1. No load input losses and current
2. Polarity
3. Operation of output voltage control

Load tests conducted at rated supply voltage and frequency, and at rated DC output voltage and current:

1. Full load input watts and current
2. Efficiency
3. Heatrun for a duration of 12 hours or until all temperatures have reached equilibrium

Function test to include test of the correct operation of the following as applicable:

- DC voltmeter
- DC ammeter
- mV meter
- Constant current operation
- Constant voltage operation

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sales@bacgroup.com



TRANSFORMER RECTIFIERS AIR COOLED THYRISTOR CONTROL

DATASHEET 1.19

TRS

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We cater for a wide range of specifications and functionality requirements and work with our clients to provide reliability, value and quality at every step of the process.



The transformer rectifier is housed inside a cabinet with the control and indication mounted on an internal hinged door. The control box is fitted with a viewing window to enable easy viewing of the control and indication of the rectifier. The user is protected from high voltages via door interlocked isolator

The power transformer, choke, diode assembly and shunt are mounted inside the cabinet. The primary MCB, DC fuses, thyristor firing PCB and AC/DC lightning arrestors are mounted on the back panel of the cabinet.

The DC voltmeter, DC ammeter, AC On lamp, door interlocked isolator, 4mm test points and controls are all mounted on the internal door.



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TRANSFORMER RECTIFIERS AIR COOLED THYRISTOR CONTROL

**DATASHEET
1.19**

TRS



Electrical Circuit

The transformer rectifier converts a three-phase or single phase AC power supply into a direct current which will be used for providing an impressed current for cathodic protection.

The AC input is supplied to the main transformer via the AC isolator and MCB. The transformer steps down the voltage and steps up the current to that required for the maximum DC output.

This reduced voltage is then applied across the thyristor assembly, which provides full wave rectification. The rectified voltage is then smoothed using an choke and capacitor network. Thyristor control is used to regulate the DC output voltage and current. To allow the thyristor circuit to produce the correct DC output it receives an input signal from the controller, it then ramps up/ramps down the output power until the desired output is reached.

To monitor the DC output the thyristor circuit receives a current feedback signal from the shunt resistor and a voltage feedback signal from the DC output terminals.

For the control and indication of the rectifier the voltmeter is feed directly from the DC output terminals and the signal for the ammeter is from a shunt resistor. The AC 'ON' lamp is fed direct from the power supply. Protection against high transient voltages is achieved using a varistor on both the AC and DC sides of the circuit.

Enclosure

The cabinet is generally constructed from 2 or 3mm (depending on size) thick mild steel sheet.

The cabinet is formed into shape and will be fully welded on outside seams.

The cabinet enclosure will be mounted onto a base frame that is constructed from 2 off 100mm U-channels. These channels will be welded to cabinet and holes drilled into them to enable the cabinet to be fixed to a plinth.

All the components (diode assembly, transformer etc), which will be situated inside the cabinet, will be mounted onto a single chassis. It will be fitted with two lifting points and will be able to be unbolted from cabinet.



TRANSFORMER RECTIFIERS

AIR COOLED

THYRISTOR CONTROL

DATASHEET
1.19

TRS



Supply Voltage

Please state AC input rating as available at site.

Rated Output

To suit application, please request DC Voltage and Amperage as required.

Type

Outdoor, plinth mounting. safe area locations.

Control

Manual Thyristor Control as standard with option for automatic control available on request.

Temperature Range

Minimum: -10°C to Maximum: 50°C as standard.

Lower and higher ambient temp on request.

Cooling

ANAN (Air natural convection air cooled)

Protection

The equipment is provided with the following devices as standard for protection against over voltage and over current conditions:

- Primary MCB
- Transient over voltage surge suppression on AC and DC sides of rectifier rated 8/20us waveform
- Semiconductor fuses on secondary of the transformer
- Voltmeter fuse
- Fuse fitted to the DC output
- Control circuit fuse
- Electronic over voltage & current limit

Optional features

- Remote monitoring and control equipment and software interface
- GPS timer interrupter
- RS485 telemetry
- Auto potential control from up to 8 reference electrodes
- Non synchronous timer interrupter
- Removable sunshade
- Datalogging
- 4-20mA transducers
- Volt free contact alarms

More features available on request.

Power Transformer

The transformer rectifiers are designed and built to BSEN 60076. The transformer has high conductivity copper windings on steel core and is varnish impregnated under vacuum after assembly. It is fitted with an earth shield situated between the primary and secondary windings.

Rectification

Silicon diodes / thyristors mounted on an aluminum heat sink and bridge connected for full wave rectification. Diodes and thyristors both have a reverse voltage of 1200V.



TRANSFORMER RECTIFIERS AIR COOLED THYRISTOR CONTROL

DATASHEET
1.19
TRS



Finish

A range of surface preparation and paint finishes are available, as standard we offer as follows:

Surface preparation: Shot Blast SA2.5
Interpon PZ790 zinc rich primer (75µm)
Interpon D1036 high performance polyester powder (75µm)
Finish Colour: Light Grey Shade (RAL 7035)

Cable Entry

The equipment is arranged to allow for bottom cable entry.
The AC cable enters the control box via a suitable rated gland and terminates at the AC terminals.
The DC cables enter the control box via a suitable rated gland and terminates at the M8 brass bolt DC terminals.

DC Ripple

Less than 5% from 5% to 100% of the DC output.

Meters

The equipment is fitted with HMI controller as Standard.

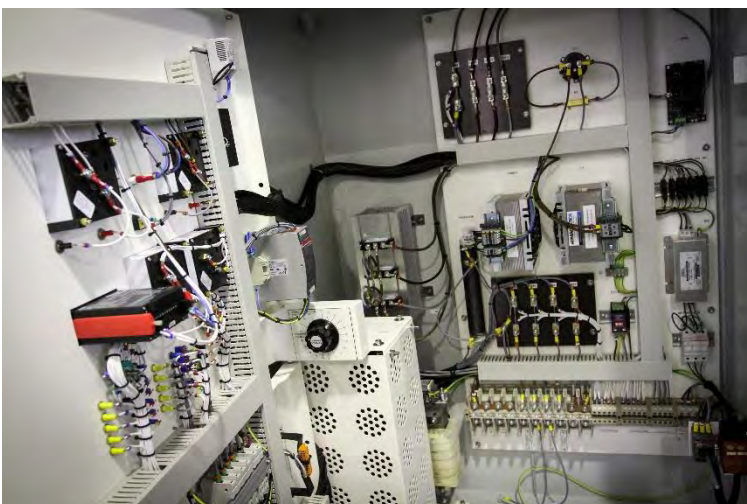
Optional digital or Analogue metering can be included as follows :

- DC voltmeter
- DC Ammeter
- AC Voltmeter
- Potential meter
- Hours run meter

Accessories

The equipment is supplied with the following as standard:

- Rating plate
- Operation and maintenance manual with circuit
- Test and inspection reports



JUNCTION BOXES

BAC Corrosion Control Ltd design, manufacture and test a complete range of Junction Boxes for Cathodic Protection applications under their Infinity Power brand name.



We cater for a wide range of specifications and functionality requirements and work with our clients to provide reliability, value and quality at every step of the process.

DATASHEET 1.25

JUNCTION BOXES



In order that you can simply specify a BAC Shunt / Resistor Junction Box we have prepared a table of options available overleaf, we would be pleased to advise you on material selection, sizing and spacing options in order to reach your optimum design.

Overleaf we have detailed the specifications of the junction boxes we will be providing. Should you require any further details then please do not hesitate to contact us.



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CORROSION CONTROL

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STANDARD TERMINAL JUNCTION BOXES

Typical image of a terminal junction box with cable entry via bottom entry conduits / hub arrangement. Enclosures are typically supplied with either a left hand hinged lockable door, or bolted lid arrangement. A wide range of shunts, variable resistors, diodes and layout arrangements can be accommodated,



DATASHEET 1.25

JUNCTION BOXES



JUNCTION BOX FRAMES AND MOUNTING

Typical image of a junction box c/w support frame and cable tray arrangement. BAC can accommodate different types of mounting arrangement and methods of securing the structure in situ at site.



COST EFFICIENT TERMINAL BOXES

Typical Image of a DIN Rail / SAK Terminal junction box with bottom entry gland plate. Please advise the cable size and quantity at enquiry stage so we can efficiently size your enclosure.

JUNCTION BOXES

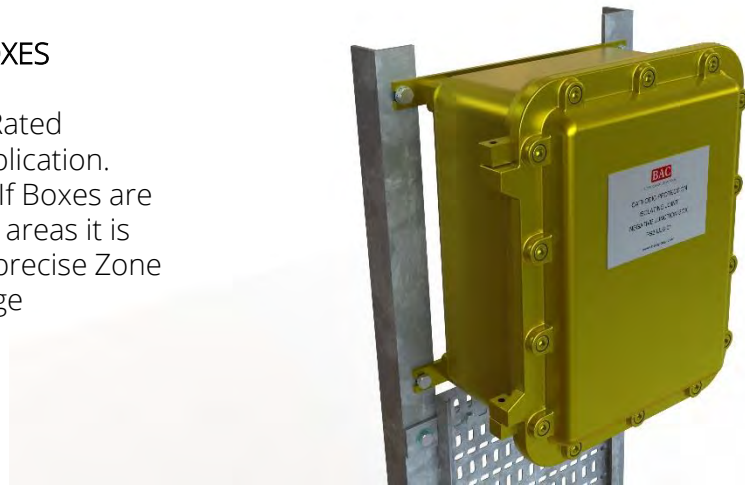
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ZONE RATED JUNCTION BOXES

Typical example of an Exd Rated Junction Box for Zone 1 Application. Cast Aluminium Enclosure. If Boxes are being located in Hazardous areas it is important to advise us the precise Zone classification at enquiry stage



CUSTOM SPECIFICATION JUNCTION BOXES

Meters can be incorporated into the box design to monitor system performance. If multiple outputs require monitoring a selector switch can be included to switch between channels during inspection.

DATASHEET 1.25

JUNCTION BOXES



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CORROSION CONTROL

 **MEMBER OF
MIDROC EUROPE**

JUNCTION BOXES

SELECTION CHART

As a useful guide at enquiry / quotation stage please state your preferences where known based upon the options below.

These are by no means exhaustive but will assist you in receiving the most accurate and cost competitive offer from us in the first instance.

DATASHEET 1.25

JUNCTION BOXES



SELECTION CHART						
ENCLOSURE MATERIAL	SS316L	SS304	GALV STEEL	GRP	ALUMINIUM	FRP
CABLE ENTRY	GLAND	CONDUIT / HUB	PIPE / LOCKING NUTS	IP RATING	IP	
CABLE SIZES TYPE AND QUANTITY	mm ² mm ² mm ²	Qty Qty Qty	mm OD mm OD mm OD	ARMOURED / UNARMOURED ARMOURED / UNARMOURED ARMOURED / UNARMOURED		
SHUNT TYPE	BRASS END	WIRE TYPE	ENCLOSURE DIMENSIONS	mm (H) mm (W) mm (D)		
SHUNT RATING	mV	A	i.e. 50mV/10A			
SHUNT QUANTITY	Qty	i.e. 10 No				
RESISTOR	VARIABLE WIRE WOUND TYPE	FIXED TYPE	VARIABLE ROTARY TYPE	DIODES		
RESISTOR RATING	Ω	WATTS	i.e. 10 Ohm / 50 Watts			
RESISTOR QUANTITY	Qty	i.e. 10 No				
METERS	AMMETER	POTENTIAL METER	VOLTMETER	SELECTOR SWITCH		
FRAME / SUPPORT	GALV STEEL ANGLE	SS316L ANGLE	SS304 ANGLE	GALV UNISTRUT	SS316L UNISTRUT	SS304 UNISTRUT
HEIGHT	mm FROM TOP OF BOX TO BOTTOM OF FRAME		FRAME LEGS SPLAYED		FRAME LEGS BOLTED	
SAFE AREA OR EX RATING / CLASSIFICATION			LABELS		SUNSHADE	

CARBONACEOUS BACKFILL METALLURGICAL TYPE

DATASHEET 1.29

BACKFILL



The performance of impressed current anodes is greatly affected by the choice of backfill they are deployed in.

An ideal backfill should have:

- Low resistivity to reduce anode to earth resistance.
- High porosity to allow gases produced at the surface of the anode to escape.
- Low density to provide high permeability with cost effectiveness.
- In addition, the backfill should flow easily, and be of high purity.

We supply a superior quality backfill, which is dried and screened for increased performance. :

Product: BAC- Metallurgical Coke

PHYSICAL

Size:	Nominally 0 – 10 mm(Typically 40% below 1mm) 5% max >10.00mm
Bulk Density :	700-850 Kg/m ³
Resistivity :	0.5 Ohm. m

CHEMICAL ANALYSIS

	SPECIFICATION	TYPICAL
Carbon :	86.5 % min	87.80 % min
Ash abt.	12.00 % max	11.00 % max
Volatile Matter	1.50 % max	1.20 % max
Moisture	10.00 % max	7 % max

PACKAGING

Packing: 25 kg bags, shrink wrapped on pallets.
Alternative packing available by prior arrangement.



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CARBONACEOUS BACKFILL CALCINED PETROLEUM TYPE

DATASHEET 1.30

BACKFILL



The performance of impressed current anodes is greatly affected by the choice of backfill they are deployed in.

An ideal backfill should have:

- Low resistivity to reduce anode to earth resistance.
- High porosity to allow gases produced at the surface of the anode to escape.
- Low density to provide high permeability with cost effectiveness.
- In addition, the backfill should flow easily, and be of high purity.

We supply a superior quality backfill, which is dried and screened for increased performance. :

Product: BAC- Calcined Petroleum coke

PHYSICAL

Size:	Nominally 0 – 1.0 mm 5% max >1.00mm
Bulk Density :	850 to 1,000 Kg/m ³
Resistivity :	0.1 Ohm.cm

CHEMICAL ANALYSIS

	SPECIFICATION	TYPICAL
Carbon :	98.5 % min	99.20 % min
Ash abt.	0.60 % max	0.40 % max
Volatile Matter	0.60 % max	0.30% max
Moisture	0.3 % max	0.10% max

PACKAGING

Packing: 25 kg bags, shrink wrapped on pallets.
Alternative packing available by prior arrangement.



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CABLE XLPE/PVC TYPE

BAC Corrosion Control Ltd supply a wide range of cables for Cathodic Protection systems.

We can advise you on the correct cable to use for your application and can cater for minimum order quantities, custom markings and insulation colour as required.

Our standard range of XLPE/PVC Cables are detailed as follows :



Conductor Size mm ²	Number of Strands	Nom O.D. (mm)	Approx Nett Weight (kg/km)
6	7	6.7	99
10	7	8.0	155
16	7	9.1	225
25	7	11.2	340
35	19	12.4	445
50	19	14.7	595
70	19	16.5	810
95	19	19.0	1110
120	37	20.6	1340

- **Insulation:** XLPE (Cross Linked Polyethylene) - Cross-linked polyethylene is a compound form of PE, which enhances the mechanical stability
- **Sheath:** PVC - is available in many compound forms but those used in cable manufacture are plasticized to allow extrusion techniques and subsequent flexibility. It has good ageing and mechanical properties. Can be supplied in Black or Red as standard.
- **Conductor:** Stranded or Solid Plain Annealed Copper.
- **Application:** Designed for use in cathodic protection systems. These cables are provided with PVC sheath for protection and are therefore suitable for external use and direct burial.
- **Technical Data:** Voltage: 600/1000V,
- **Temperature Range:** 20°C to +70°C
- **Relevant Standards:** Conductor: To BS6360 up to 35 mm²
To BS6346 above 50 mm²
- **Sizes and Dimensions**
All sizes and dimensions are approximate and for information only. BAC will confirm actual dimensions at time of order if required:

DATASHEET 1.31

CABLE



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CABLE

XLPE/PVC/SWA/PVC TYPE

BAC Corrosion Control Ltd supply a wide range of cables for Cathodic Protection systems.

We can advise you on the correct cable to use for your application and can cater for minimum order quantities, custom markings and insulation colour as required.

Our standard range of XLPE/PVC/SWA/PVC Cables are detailed as follows :



Conductor Size mm ²	Number of Strands	Diameter of Conductor (mm)	Nom. O.D. (mm)	Approx Nett Weight (kg/km)
16	7	5.1	13.5	435
25	7	6.4	15.3	575
35	7	7.7	17.4	805
50	7	8.9	19.1	1010
70	19	10.7	21.1	1210
95	19	12.6	23.4	1620
120	19	14.2	26.3	2100

- **Insulation:** XLPE (Cross Linked Polyethylene) - Cross-linked polyethylene is a compound form of PE, which enhances the mechanical stability
- **Bedding:** Extruded PVC - is available in many compound forms but those used in cable manufacture are plasticized to allow extrusion techniques and subsequent flexibility. It has good ageing and mechanical properties.
- **Armour:** Galvanised Steel Wire Armour - Steel wire stands between the layers of insulation for protection against mechanical damage.
- **Sheath:** PVC Black - is available in many compound forms but those used in cable manufacture are plasticized to allow extrusion techniques and subsequent flexibility. It has good ageing and mechanical properties.
- **Conductor:** Stranded or Solid Plain Annealed Copper.
- **Application:** Designed for use in cathodic protection systems. These cables are provided with mechanical protection are therefore suitable for external use and direct burial.
- **Technical Data:** Voltage: 600/1000V,
- **Temperature range:** -40 oC to +90 oC
- **Relevant Standards:** Conductor: To BS6360, Sheath: To BS6746 Type G

DATASHEET

1.32

CABLE



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CABLE PVDF/HMWPE TYPE

BAC Corrosion Control Ltd supply a wide range of cables for Cathodic Protection systems.

We can advise you on the correct cable to use for your application and can cater for minimum order quantities, custom markings and insulation colour as required.

Our standard range of PVDF/HMWPE Cables are detailed as follows :



Conductor Size mm ²	Number of Strands	Nom O.D. (mm)	Approx Nett Weight (kg/km)
6	7	7.4	94
10	7	8.3	141
16	7	9.4	203
25	7	10.6	290
35	7	11.8	388
50	7	13.1	504
70	13	14.9	711
95	17	16.8	962
120	18	18.5	1214

- **Insulation:** Special PVDF insulation. Minimum thickness 0.5mm
- **Sheath:** HMWPE acc. To ASTM D1248 Can be supplied in Black or Red as standard. Minimum thickness 1.65mm
- **Conductor:** Stranded Electrolytic Annealed Copper Wires (Class 2)
- **Application:** Designed for use in cathodic protection systems. These cables are provided with PVDF insulation with chlorine resistant properties. HMWPE sheath is for protection and therefore suitable for external use and direct burial.
- **Technical Data:** Voltage: 600/1000V,
- **Temperature Range:** -55°C to +105°C
- **Relevant Standards:** Conductor: To BS6360 up to 35 mm²
To BS6346 above 50 mm²
- **Sizes and Dimensions**
All sizes and dimensions are approximate and for information only. BAC will confirm actual dimensions at time of order if required:

DATASHEET 1.33

PVDF/HMWPE
CABLE



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CABLE HMWPE TYPE

Purpose: The single core unarmoured cable is for use in Cathodic Systems (for protection from corrosion) where risk of mechanical damage is minimal. The (HMWPE) Cathodic range of cables are used for protecting against electrolytic and galvanic corrosion of objects like underground tanks and pipelines and other submerged or buried metal structures.



DATASHEET 1.35

CABLE



Conductor Size mm ²	Number of Strands	Nom O.D. (mm)	Approx Nett Weight (kg/km)
6	7	8.75	120
10	7	9.70	146
16	7	10.70	171
25	7	12.10	249
35	7	13.20	374
50	19	15.30	464
70	19	17.10	782
95	19	19.00	1048
120	19	20.65	1295

- **Sheath:** HMWPE (high molecular weight polyethylene)
- **Conductor:** Stranded or Solid Plain Annealed Copper.
- **Application:** Designed for use in cathodic protection systems. These cables are provided with HMWPE sheath for protection and are therefore suitable for external use and direct burial.
- **Technical Data:** Voltage: 600/1000V,
- **Temperature Range:** -15°C to +90°C
- **Relevant Standards:** Conductor: To BS5467 and IEC 60502



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CABLE LUGS AND SPLICES

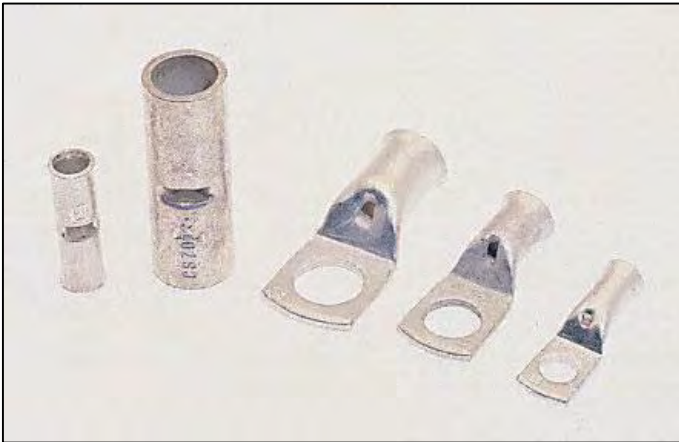
DATASHEET 1.37

CABLE LUGS AND SPLICES



Manufactured from soft drawn pure copper tube to BS2781 and meet the requirements of BS4579.

The Standard **BAC** range is provided with an inspection hole and sizes suitable for 10mm² to 120mm² have bell mouthed openings for easier cable entry



LUGS

Conductor Size mm ²	Stud mm
1.5	3
	4
	5
2.5	3
	4
	5
4	4
	5
	6
6	4
	5
	6
	8
10	5
	6
	8
	10
16	5
	6
	8
	10
25	6
	8
	10
	12

Conductor Size mm ²	Stud mm
35	6
	8
	10
	12
50	14
	6
	8
	10
	12
70	14
	16
	8
	10
	12
95	14
	16
	20
	8
	10
120	12
	14
	16
	20
	8

SPLICES

Conductor Size mm ²
1.5
2.5
4
6
10
16
25
35
50
70
95
120



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SPLICE KITS

CATHODIC PROTECTION JOINT - CPJ

Used on Cathodic Protection applications including pipelines, tanks and buried structures.

To suit mains cable single core max size up to 95mm² and branch single core up to 35mm²

DATASHEET

1.38

SPLICE KITS



- Strong clear plastic mould body with Snaplock connection for tight seal
- Stepped cable entry cut off points for all cable diameters
- Large mould shell enables crimp or split bolt / line tap connectors to be used
- High quality resin sealing compound has a high resistance to moisture absorption, is mixed in a clear pack and stored in an aluminium protective bag.
- The long term electrical properties of the resin sealing compound result in a more reliable connection without any associated maintenance costs
- Resin sealing compound is suitable for all climate conditions
- Designed to meet the requirements of BS 7888:1998
- Specified by leading oil, gas and water companies and consulting engineers



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SPLICE KITS

STRAIGHT CONNECTION JOINT

Straight cast resin cable joints are suitable for plastic and paper insulated LV cables. These joints are suitable for use in power, telecoms and signalisation. The joints are approved in accordance with the standard DIN EN 50393 (VDE 0278-393):2006-11

Designed for UK armoured cables to allow plenty of room to work.

DATASHEET

1.38

SPLICE KITS



- Type tested according to: EN 50393:2006-11
- Hydrolysis resistant polyurethane resin in a transparent 2 component bag
- Strong transparent shells
- Fully waterproof, no resin leakage
- Cable spacers included
- Complete kit, sealing tape, sandpaper, and protective gloves also included
- Installation instructions with clear drawings
- Quick and easy installation
- Connectors and earthing kits available on request
- Other shell size dimensions available on request



SPLICE KITS

STRAIGHT CONNECTION JOINT

SELECTION CHART

DATASHEET

1.38

SPLICE KITS



Item number	Description	Cable Diameter (mm)	Dimensions (mm)
CM0	Straight 6 (Injection Moulded)	Ø 5 - 20	L200 x Ø35
CM1	Straight 16 (Injection Moulded)	Ø 8 - 30	L250 x Ø45
CM2	Straight 25 (Injection Moulded)	Ø 10 - 34	L320 x Ø60
CM2.5	Straight 35/70 (Injection Moulded)	Ø 26 - 53	L355 x Ø72
CM3	Straight 95 (Injection Moulded)	Ø 30 - 48	L450 x Ø75
CM4	Straight 120 (Injection Moulded)	Ø 37 - 67	L547 x Ø108
CM5	Straight 185 (Vacume Formed)	Ø 62 - 68	L700 x Ø140
CM6	Straight 300 (Vacume Formed)	Ø 48 - 88	L800 x Ø160
CM7	Straight 400 (Vacume Formed)	Ø 70 - 105	L1345 x Ø155

SPLICE KITS

SPLIT VOLT CONNECTORS (LINE TAPS)

Suitable for connecting copper conductors.

DATASHEET

1.38

SPLICE KITS



- High electrical and mechanical characteristics with thread stamped that allows its application of high torque.
- High strength Cu alloy.
- Special Cu alloy corrosion and cracking resistant

Item number	Description	Order unit
KS20.UK	Tap-off connector 16mm ² / 2,5 - 16mm ²	100 pcs/carton
KS23.UK	Tap-off connector 35mm ² / 2,5 - 35mm ²	100 pcs/carton
KS26.UK	Tap-off connector 70mm ² / 2,5 - 70mm ²	25 pcs/carton
KS17.UK	Tap-off connector 10mm ² / 2,5 - 10mm ²	100 pcs/carton

CABLE WARNING TAPE

ELECTRIC CABLE – Material – Linear low density polyethylene Lead free pigments with virgin grade film Soil tolerance from pH 2.5 to pH 11.0 inclusive 100 micron grade is manufactured in accordance with ENATS 12-23 specification.

- Brightly coloured plastic identification tape
- Marks the position of buried utility lines
- 100% virgin plastic (acid & alkali resistant)
- Version : **ELECTRIC CABLE**
- Colour : **Yellow**
- Size : **150mm x 365M**
- Need a different colour, size or quantity? contact our sales team



DATASHEET

1.41

CABLE WARNING TAPE



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VENT PIPE AND SCREEN / CASING

DATASHEET 1.42

VENT PIPE AND SCREEN / CASING



Applications

- Venting of chlorine gas generated in deep well / vertical anode ground beds.
- Lining of deepwell ground beds
- Monitoring tube for undertank reference electrodes

CASING & SCREEN WITH SMOOTH SURFACE IN ACCORDANCE WITH DIN 4925						
NOMINAL DIAMETER	DIMENSION	OUTSIDE DIAMETER	INSIDE DIAMETER	WALL THICKNESS	WEIGHT	COLLAPSE RESISTANCE
ND (inch)	DN (mm)	DO (mm)	DI (mm)	S (mm)	Kg/m	bar
¾"	19*	27	22	2.5	0.3	102
1"	25*	33	25	4	0.5	70
1¼"	35	42	35	3.5	0.64	46
2"	50	60	52	4	1.0	23
3"	80	90	81	4.5	1.6	7
4"	100	113	103	5	2.5	6.4
4.5"	115	125	115	5	3	4.7
5"	125	140	126	7	4.05	7.4
6"	150	165	155	5	5.5	7.0
8"	200	225	203	11	10.0	6.5

- Manufactured to DIN 4925
- Produced to BS3505 & ASTM
- Diameters 27mm - 225mm
- Joints flush and BSP
- Slots 0.3 - 3mm
- Lengths 1.0, 2.0, 2.9, 3.0, 5.8m
- Colour blue
- Available with Geotextile Mesh



Collapse resistance

The maximum installation depth is determined by the collapse resistance and will vary up or down in accordance with actual ground conditions.

In solid unbroken strata, the suspended length equivalent to the joint strength can be approached or even exceeded if there is a high water table.

In unconsolidated formations, the installation depth is variable and consideration must be given to ground water and formation pressures and the presence, or otherwise, of a gravel pack.

During grouting, consideration must be given to temperature increase and density. Values for collapse resistance are determined using the minimum wall thickness and average modulus of elasticity and are based on testing and theoretical calculations in accordance With BS 879 Part 2 for casing.



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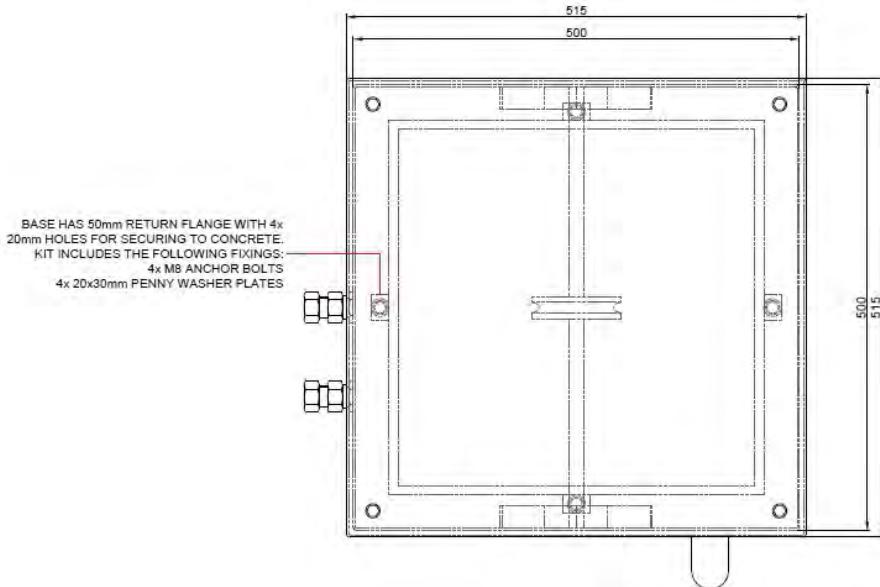
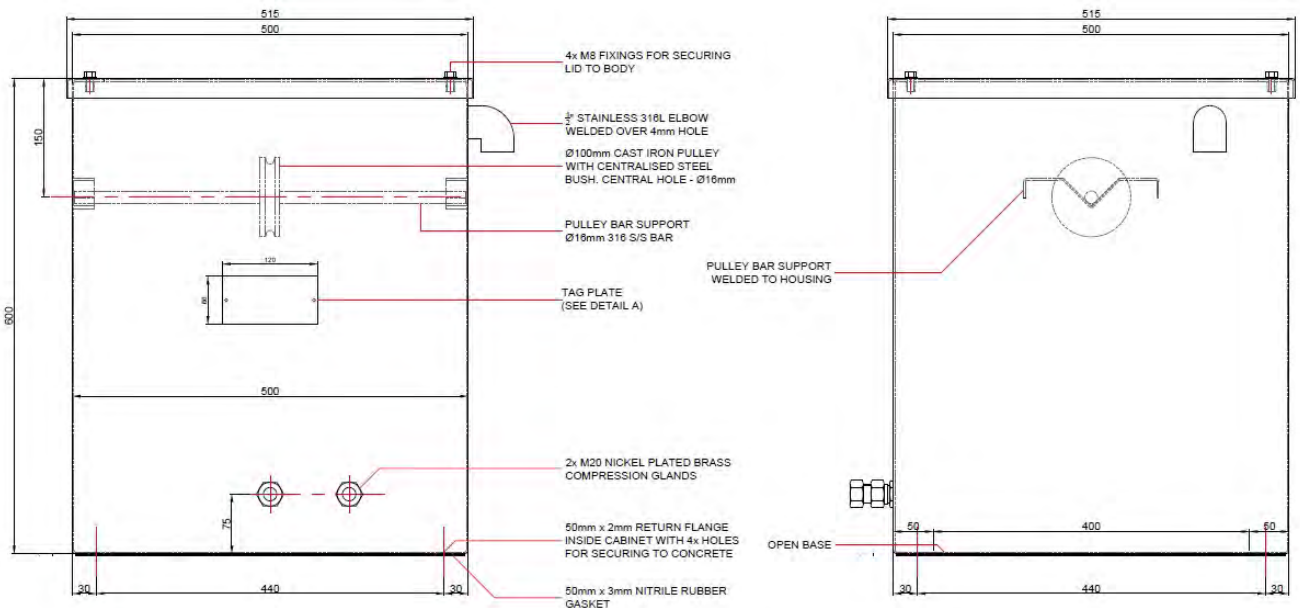
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WELLHEAD ASSEMBLY FOR ANODE GROUNDBED

DATASHEET

WELLHEAD ASSEMBLY

Stainless Steel wellhead structure for support of anode strings over a deepwell borehole grounded. Structure supplied with an internal roller assembly for tying up support ropes and anode cables and a vent system for dispersion of chlorine gas.



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TYPE CC TEST STATION

Materials Moulded in grey RAL 7040 coloured SMC (fiberglass). Characteristics sliding cover closed by an Allen screws in AISI 304 stainless steel.

Versions:.../F: with bottom fitting for non-threaded pole mounting. Applications For outdoor use in cathodic protection systems, potential connections, electric measuring points on metal pipelines.

Materials solely designed for use in systems with voltage ratings of less than 50 Vdc. Protection degree IP 44 in compliance with CEI EN 60529, IK 10 according to CEI EN 62262.

DATASHEET

1.41
TYPE CC
TEST STATION



Characteristics table

EXTERNAL DIMENSIONS: Height (mm)	266
EXTERNAL DIMENSIONS: Width (mm)	142
EXTERNAL DIMENSIONS: Depth (mm)	99
Pipe diameter	1"1/2 (49 mm)
IP	44
IK	10
"Type of terminal block"	MPE/PP4



BAC[®]

CORROSION CONTROL

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BIG FINK TEST STATION

DATASHEET 1.45

BIG FINK



The Big Fink® cathodic protection test station is a field proven, high strength, maintenance free terminal for monitoring electric currents and potentials.

Since 1976 the Big fink® CP test station has been utilised worldwide by gas, oil, chemical and water pipeline companies.

CP Test Station Cap, Terminal Board and Collect Nut made from Makrolon® polycarbonate. One of the toughest plastics in the world. Hardware Standard nickel plated brass or optional stainless steel for guaranteed long service life. Up to 11 terminals accessible from both sides of the board.

Accessories

All BigFink® terminal boards can accommodate COTTShunts®, Slide Resistors, COTTMeters® (Volt or Amp) Burndy connectors, Cott bonding/shorting straps, Banana Jacks, ZAPGard®, locking devices, lightning arrestors and flange mounting brackets.

Colors Red, Orange, Yellow, Green, Blue, White and Black are standard on BigFink® and COTTPipe®. Any color is available as an option.

Support Post

COTTPipe® PE (standard) polyethylene has over 20 years of proven durability. COTTPipe® PC (optional) polycarbonate is available for the toughest applications. Standard length 6 feet, available to 40 feet.

Sizes Available in models to fit 1-1/4", 2" and 3" pipe anchor.

Galvanised Steel Conduit / Post also available in 3" Diameter

COTTPipe® PE is easily installed and prevents pullout.



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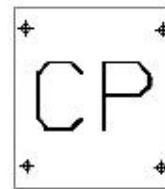
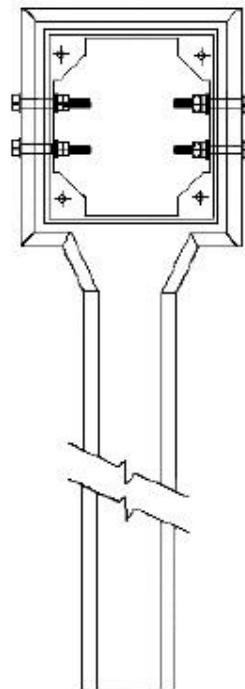
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M28 CONCRETE TEST STATION

A permanent durable test station is available which simplifies the measurement of pipe to soil potentials, current flow, testing of insulated flanges, resistance bonds, anode outputs etc.

DATASHEET 1.46

M28 CONCRETE TEST STATION



- EXTENSIVELY USED BY UTILITIES COMPANIES
- HIGH DURABILITY – LOW MAINTENANCE
- CUSTOMISED POLYCARBONATE OR TRAFFOLYTE COVER PLATES AVAILABLE
E.g. Your Company Name or Logo included

The test station consists of a preformed concrete post with a covered recess to contain a connection panel if required. Cables are brought into the recess via conduit inside the post, thus rendering the station completely weatherproof.

Insulated terminal panels may be fitted and shunts or resistors are available. Cover plates for the recess can be supplied with an external connection box, thus simplifying the process of taking measurements.

Identification can be supplied to customer requirements as an optional extra.



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M28 PLASTIC TEST STATION



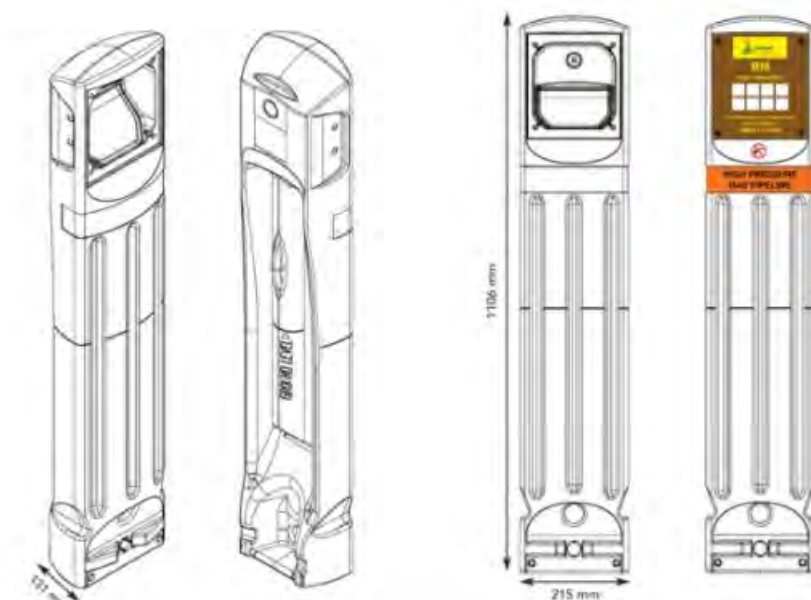
DATASHEET 1.46

M28 CONCRETE
TEST STATION



Lightweight construction, using recyclable white medium density polyethylene, means the M28 post is within manual handling guidelines.

- Moulded-in ground anchor features include a through hole for optional anchor bar.
- Unique interlocking features allow M28 and M4 posts to be stacked for easy transportation.
- Plate fixings provide additional security.
- Self-coloured UV stabilised plastic prevents colour loss and eliminates the cost of repainting and maintenance.
- Unique ribbed construction ensures maximum strength which prevents damage.
- Bright orange product label improves visibility in poor weather.
- Large moulded recess allows easy installation of remote logging equipment.
- Large diameter integral moulded tube, at the rear of the post, enables buried CP cables to be threaded through and attached to remote monitoring box.
- Four moulded side location holes allow CP tags to be attached to terminals for on-site monitoring by the engineer.
- Moulded-in ground level marker ensures installation at a consistent height.



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LIGHTING CONTROL PILLAR

A permanent durable test station used for the measurement of pipe to soil potentials, current flow, testing of insulated flanges, resistance bond and anode outputs. It's also large enough to comfortably house remote monitoring units or AC mitigation devices. All internals are accessible via the lock fitted aluminium faceplate

The 'Lighting Control Pillars' are manufactured from a glass reinforced cement.

Cables are brought into the recess via a hollow and empty base, with the above ground elements being completely weatherproof.



DATASHEET

LIGHTING CONTROL PILLAR



BAC[®]

CORROSION CONTROL

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FLUSH FINK TEST STATION

The Flush Fink® cathodic protection test station and terminal enclosure is a high strength, maintenance free, non-conductive, flush mounted below ground terminal. It's patented "Bell Jar" design keeps test leads dry even when the enclosure is covered by flood water.

Features

CP Test Station

Watertight Bell, Terminal Board and Housing are made from Makroblend® polycarbonate alloy, one of the worlds toughest plastics. Flush Fink® is impervious to impact, traffic loads and chemical spills common to street usage.

Support Post

CottPipe® PE (standard) polyethylene blend has over 20 years of proven durability. CottPipe® PC (optional) polycarbonate is available for the toughest applications. Standard length 1 foot - available to 40 feet with Cott's Telescoping Extender.

Colors

Red, Orange, Yellow, Green, Blue, White, and Black are standard on Flush Fink® and CottPipe®. Any color is available as an option.

Hardware

Standard nickel plated brass or optional stainless steel for guaranteed long service life. Up to 11 terminals accessible from both sides of the board. Accessories All Flush Fink® terminal boards can accommodate CottShunts® Slide Resistors, Rheostats, CottMeters® (Volt or Amp), Burndy connectors, Cott bonding/shorting straps, Banana Jacks, and lightning arrestors.

Dimensions

5-1/2" Diameter x 8" height fits 4" schedule 40 pipe.

DATASHEET 1.48

FLUSH FINK



BAC®

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STEEL TEST STATION

DATASHEET 1.49

DESCRIPTION

Test point for monitoring p/I potential formed from 101.6mm Dia x 1,500mm length galvanised carbon steel pipe coated with (2) component Epoxy Paint colour Yellow. The upper end of the post shall have a terminal board. Each terminal should be provided with eight stainless steel bolts & 2 nut, washer and spring washer & fixed on non conductive board measuring (70 x120 x6 mm) fixed inside the post. Board is accessible by a hinged, lockable door. The gauge of pipe shall be 6 mm as min. Thickness

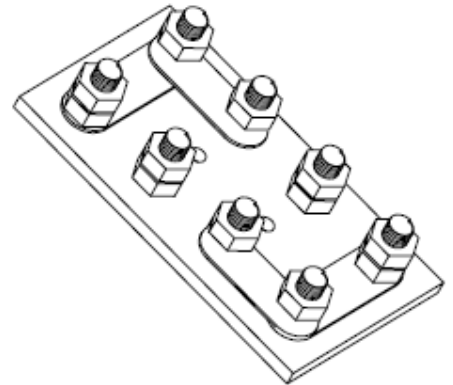
STEEL TEST STATION



GENERAL LAYOUT

101.6mm dia (post) 108mm dia (lid) x 1,500mm Length

Hinged Lockable Door Non Conductive Panel With stainless steel terminals comprising 6mm bolt, nuts, plain washer and spring washer. Copper Link Bars can be supplied as required.



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THERMIT WELDING

thermOweld® Cathodic Protection weld metal is the most reliable and consistently-performing weld metal available worldwide.

Our continuous-improvement manufacturing process is supplemented with multiple quality validation steps for every lot we produce. Upon final acceptance, our weld metal is specially packaged in moisture-resistant plastic cartridges with special closure caps.

Then the cartridges and required metal discs are packaged in moisture-resistant boxes with unique manufacturing lot codes. These lot codes are a thermOweld® innovation, providing complete traceability from raw material origination, through our multiple processing stages to shipment. Finally, thermOweld® applies special shrink-wrap plastic to every weld metal box, insuring reliable storage, positive field ignition and superior welds every time.

Every individual weld metal cartridge is marked with the size and weight in grams for easy identification, even when separated from the host box. thermOweld® weld metal is shipped worldwide to more than 50 countries via ground, air and ocean freight. All sizes of weld metal are available immediately with thermOweld's Same Day Service (SDS) shipment program.

Our engineers have formulated our weld metal for cathodic protection application use.

DATASHEET 1.50

THERMIT WELDING



Standard Cartridge Size	Cathodic Protection Cartridge Size	Cast Iron Cartridge Size	Packed Per Box
#15	#15CP, 15CPS*	—	20
#25	#25CP	#25CI	20
#32	#32CP	#32CI	10
#45	#45CP	#45CI	20
#65	#65CP	#65CI	20

thermOweld® Weld Metal is sold in box quantities only

* 15CPS includes: 20 sleeves.

BAC®

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THERMIT WELDING

CS-32 TYPE MOLDS
Cathodic Protection

Horizontal Cable to Horizontal Steel Pipe
For Metric Conductors



DATASHEET 1.50 THERMIT WELDING



MOLDS FOR METRIC CONDUCTORS						
Cable Size (mm ²)	Pipe Dia. In mm	Mold #	Price Key	Weld Metal	Handle Clamps	Lead Time
2.5 4 & 6	up to 125	M-4146‡	3†	15CP	Included Optional: Magnetic Mold Support, Catalog Number 40-7202-00, See Page 136	2
	over 125	M-4147‡	3†	15CP		2
10	up to 125	M-4148	3†	15CP		2
	over 125	M-4149	3†	15CP		2
16	up to 125	M-4146	3†	15CP		2
	over 125	M-4147	3†	15CP		2
25	up to 70	M-4152	3†	25CP		2
	70 to 165	M-4153	3†	25CP		2
	over 165	M-4154	3†	25CP		2
30	up to 70	M-2833	3†	32CP		4
	70 to 165	M-2834	3†	32CP		4
	165 to 250	M-2835	3†	32CP		4
	over 250	M-2836	3†	32CP		4
35	up to 70	M-4155	3†	32CP		2
	70 to 165	M-4156	3†	32CP		2
	165 to 250	M-4157	3†	32CP		2
	over 250	M-4158	3†	32CP	2	
50	up to 70	M-4159	3†	45CP	4	
	70 to 165	M-4160	3†	45CP	2	
	165 to 250	M-4161	3†	45CP	2	
	over 250	M-4162	3†	45CP	2	
70	up to 70	M-4163	3†	65CP	2	
	70 to 165	M-4164	3†	65CP	2	
	165 to 250	M-4165	3†	65CP	2	
	over 250	M-4166	3†	65CP	2	
‡ 38-4590 Sleeve/Weld Req'd						





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