

Borna Electronics
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Profil & Policy

Borna Electronics Company in compliance with the standards, ISO9001, ISO14001, OHSAS18001, HSE, and IMS is always consider providing services and producing Equipment with the highest quality and provide services in the field of consulting and services for after sales as well.

- Paying attention to human resources and creating growth fields
- Maintain the quality of products and services to increase satisfaction and Respect for customer's rights
- Design products tailored to customer needs
- Maintain and develop domestic market share and strive to improve the situation for export products
- Reduce production costs and increase productivity
- Develop and improve the organization's processes to protect and enhance the environment Complies with legal requirements and environmental pollution prevention
- Improve workplace conditions by properly identifying safety hazards and health in Professional way and preventive measures, with full coverage of relevant legal requirements





- Contractor Of EPC Cathodic Protection Projects
- Cathodic Protection Equipment
- Cathodic Protection Transformer Rectifiers
- Cathodic Protection Anodes
- Marine Services
- Reinforced Concrete Cathodic Protection
- Anodic Protection Systems
- Earthing and Lightning Equipment
- Cable Joint And Resin Type Splicing Kits
- Neutral Grounding resistors
- Industrial Power resistors
- Industrial Heaters
- Electronic Relays & Panel Meters
- High Current Rectifiers
- Especial Transformers
- Corrosion Monitoring
- Anti-fouling Systems
- Medium Voltage Drives & Soft Starters
- UPS & Industrial Battery Chargers

Field of Activities





Engineering, Procurement, Construction and Commissioning (EPCC) Cathodic Protection Projects

- Water, Oil and Gas Pipelines
- Pipelines (Transmission and In-Plant)
- Buried Drums and Vessels
- Storage Tank Internals and Externals
- Steel In Concrete
- Offshore structures (Platform etc.)
- Refinery and power plant pipes
- Ships body

Available Engineering Services

- Cathodic Protection including Feasibility Studies, Site Investigations, Design, Commissioning and Testing
- Consultancy, Specialist Advice & Training
- Materials Supply, Installation, Supervision & Commissioning
- Cost Estimation
- Specialist Surveys (DCVG, Pearson, Current Requirement, Coating Resistance, Pipeline Current Mapping, Isolation Checking)
- Corrosion Studies
- Design Reviews
- Soil Investigations (Resistivity, PH, SRB, Chloride and Sulphate Content)
- Stary Current Analyses and Mitigation of its Effects

Ente Certificazione Macchine

1. Manufacturer/Holder		2. Certificate of Compliance of Certification Mark	
Corporate Name: BORNA Electronics Co.		EC Type Examination of Compliance of Certification Mark	
Address: No. 3, Second Goldasht Alley, Goldasht St., Molla Sadra St., Vahak Sq, Tehran		No. EC.1282.0F150219.BE0083	
Country: Iran		Production factory: No. 181, Shahid Rajaei St., Tehran-Iran	
3. Certification Mark		4. Verification to Standard	
		EN/IEC 60079-0:2011, EN/IEC 60079-6:2007, EN/IEC 60529	
5. Product Type - Model(s)		Related to Directive: 94/9/EC (ATEX) annex II & IV	
Type: Transformer Rectifier for cathodic protection			
Model(s): 4131883			
6. Technical data			
7. Remark			
The product(s) has been verified on a voluntary basis. The product(s) satisfies the requirements of the Safety Compliance Mark of ECM (in reference to the above listed standards). The above Certification Safety Mark can be affixed on the product(s) according to the ECM regulation (see www.entecertmacchine.it) about its release and its use. Whereas, the manufacturer is responsible of the CE certification of the product(s) and not intended to perform all the necessary activities before placing the product(s) on the market, the manufacturer is also responsible to maintain efficient the internal production control to ensure the product(s) is in compliance with the Safety Compliance Mark. This certificate can be checked for validity at www.entecertmacchine.it			
8. Release date		ECM - Ente Certificazione Macchine Srl	
Place: Volkmaggia (BO) - ITALY		Date: 16/02/2015	
Expiry date: 16/02/2020			
		(Tim Mahdavi - Certification Manager)	

Ente Certificazione Macchine Srl
Via C.so Italia, 243 - Loc. Castello di Senoville - 40053 Volkmaggia (BO) - ITALY
☎ +39 051 6705141 ☎ +39 051 6705156 ✉ info@entecertmacchine.it ✉ www.entecertmacchine.it



Transformer Rectifier and Cathodic Protection Equipment



- Transformer Rectifier in oil and air cooled
- The first manufacturer of explosion-proof rectifiers in Iran, Certified by ECM Italy
- Switching rectifiers
- Cathodic protection solar systems
- Monitoring and Remote Control Systems
- Cathodic protection Junction boxes
- Testing equipment
- Cathodic protection portable testing and measuring instruments
- GPS Synchroniz Inrupter systems.
- Cathodic protection accessories

Verifica di Qualità della Produzione
Verification of the Production Quality Assurance
n. EC.1282.0F150226.BE0N03
Direttiva 1994/CE - Allegato IV
Direttiva 1994/CE - Annex IV

Ragione Sociale	BORNA Electronics Co.
Company Name	No. 3, Second Goldasht Alley, Goldasht St., Molla Sadra St., Vahak Sq, Tehran
Indirizzo	Iran
Località	No. 181, Shahid Rajaei St., Tehran-Iran
Site production	
Place of production	Transformer Rectifier for cathodic protection (Model 4131883)
Type of component or product	

ECM, secondo riferimento all'art. 8 della Direttiva 94/CE del ECM, con riferimento to the Article 8 of Directive 94/CE of the Council dell'Unione Europea del 23 Marzo 1994, ha verificato in riferimento to the European Union Council of 23 March 1994, has verified that the manufacturer has an internal quality assurance system of production of manufacturer has a production quality system with Annex IV of the Council dell'Unione Europea del 23 Marzo 1994.

I risultati delle eventuali verifiche periodiche del sistema qualità. The results of eventual periodic audits of the quality system shall be part of this document.

Questa Verifica di Qualità della Produzione è valida fino al 25/02/2015. This Verification of Quality Production Assurance is valid until 25/02/2015. It can be suspended if the eventual periodic audits show periodic results that the system of quality assurance of production is not in respect with the requirements of Annex IV.

I requisiti essenziali di sicurezza e salute sono soddisfatti dalla conformità alle norme applicabili. The essential health and safety requirements are satisfied by the compliance to the applied standards.

EN/IEC 60079-0:2011, EN/IEC 60079-6:2007, EN/IEC 60529 EN/IEC 60079-0:2011, EN/IEC 60079-6:2007, EN/IEC 60529

L'apparecchiatura è in conformità di protezione per riferimento ai seguenti contrassegni: The equipment shall refer to the following symbols:

EX od II 15

Data di prima emissione 26/02/2015

Date of first issue

Volkmaggia (BO)

Place - Date 26/02/2015

Scale: Expiry date 25/02/2019

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This certificate can be checked for validity at www.entecertmacchine.it

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➤ Anodes

Production of anodes and cathodic protection Reference Electrodes

⦿ Sacrificial Anodes

- Aluminum anode
- Zinc anode
- Magnesium anode

⦿ Impressed Current Anodes

- MMO Anodes
- High Silicon cast iron anode
- Lead - Silver anode
- Anti-fouling Anodes

⦿ Reference electrodes

- Cu/CuSO₄ reference electrodes
- Zinc reference electrode
- Ag/AgCl reference electrodes

◆ Cathodic protection accessories

- Coke Breeze
- Zinc Earthing cell



➤ MMO

Mixed Metal Oxide Anodes

- The first and most famous MMO anode Manufacture in Iran
- Certified by Research Institute of Petroleum Industry
- Certified by National Iranian Gas Company
- Certified by National Iranian Oil Company





➤ Reinforced Concrete Cathodic Protection Systems

Cathodic Prevention for New Reinforced Concrete Structures and Cathodic Protection for Existing Reinforced Concrete Structures

🕒 Applications

- Atmosphere Exposed Reinforced Concrete Structures (Buildings, Bridges, ...)
- Immersed Reinforced Concrete Structures (Jetties, Marine Structures, ...)
- Buried Reinforced Concrete Structures (Building Foundations, ...)





Engineering Services, procurement and Installation

- Corrosion coupons
- AC/DC coupons
- Ir-Free coupons
- Electrical resistance corrosion probes
- Smart test stations
 - Providing corrosion engineering services
 - Performing corrosion coupon processing and analysis after exposure
 - Performing root cause failure analysis
 - Providing advanced non-destructive testing
 - (CIPS, B-Scan, C-Scan, DCVG)



Corrosion Monitoring





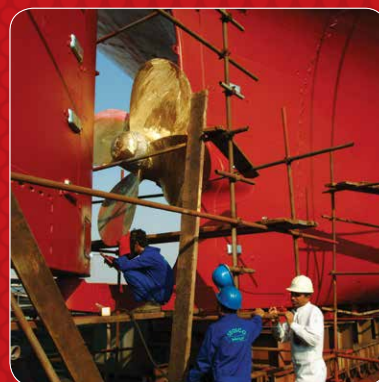
● Marine Cathodic Protection

- Jetties and Harbor Structures
- Jackets and Platforms
- Ships and Vessels
- Submarine Pipelines
- Offshore and Onshore Reinforced Concrete Structures

● Diving Services

- Anode Installation
- Inspection of Cathodic Protection Systems
- Trouble Shooting of Cathodic Protection Systems

➤ Marine Services



Impressed Current Anti-Fouling Systems

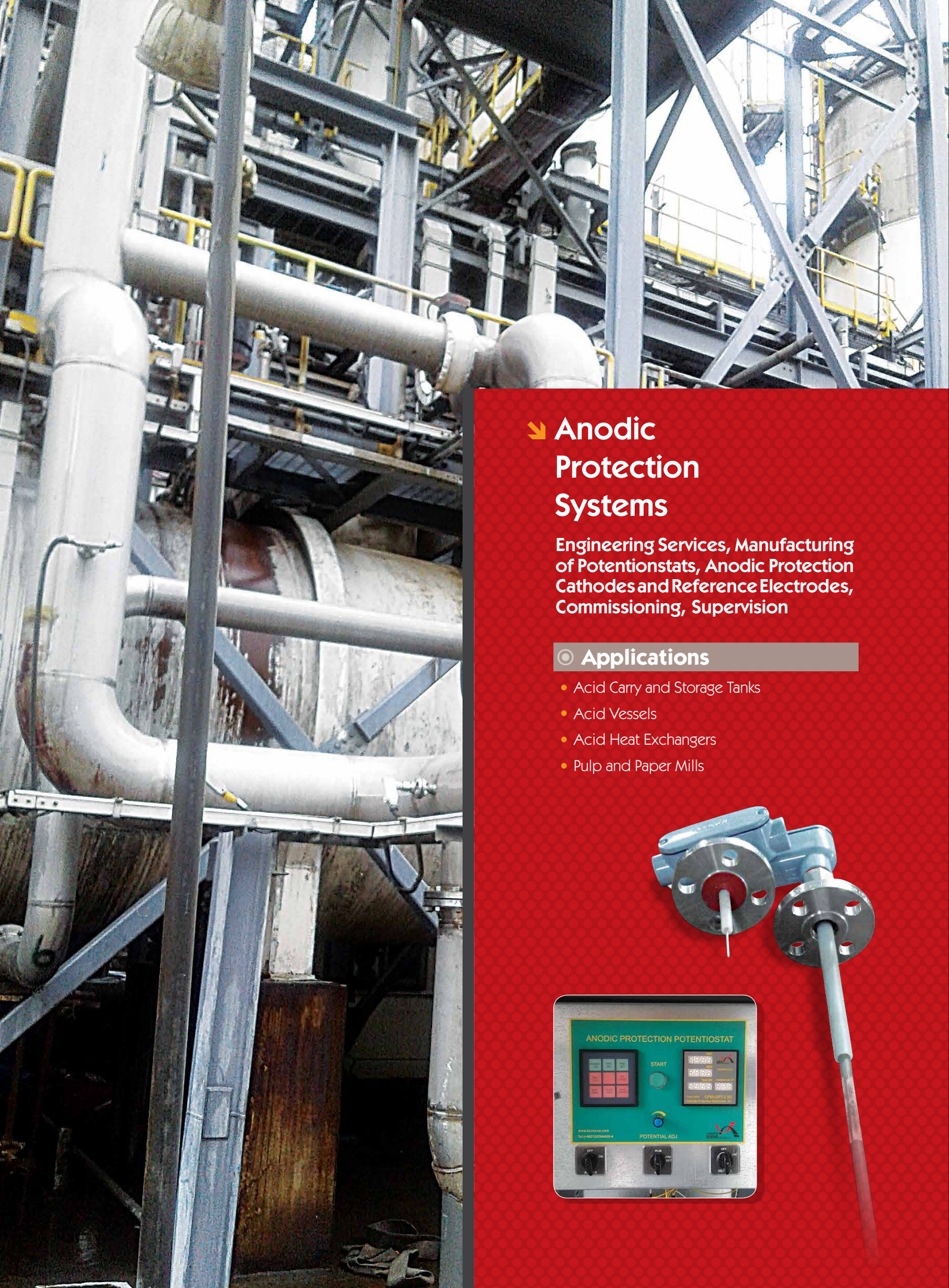


Engineering Services, Manufacturing of Control Panels, Anti-Fouling Anodes (Copper, Aluminum or Soft Iron), Commissioning, Supervision

● Applications

- Sea Chests
- Box Coolers
- Seawater Intake Pipes
- Seawater Pumps





➤ Anodic Protection Systems

Engineering Services, Manufacturing of Potentionstats, Anodic Protection Cathodes and Reference Electrodes, Commissioning, Supervision

◎ Applications

- Acid Carry and Storage Tanks
- Acid Vessels
- Acid Heat Exchangers
- Pulp and Paper Mills





➤ High current Rectifiers

⦿ Device Features

- Highest electrical efficiency and lowest Power Loss up to 200 KA
- The highest safety and the least damage and repair costs
- User friendly & longest device lifetime

➤ Transformers

- LV and MV transformers (dry, Oil & Resin type)
- Transformer for Rectifier
- Grounding Zig zag Transformer
- Isolated transformers
- Phase shifting Transformers for Mega Derive & other application





Earthing & ⚡ Lightning systems

Engineering services
Procurement,
manufacturing
Commissioning,
inspection



1. Earthing Materials

- Earth Rods and Accessories
- Copper Earth Plate
- Inspection Earth Pits
- Low Ohm Material
- Earth Busbar
- Bare & Insulated Copper conductors
- Earthing Copper Tape
- Flexible Copper Braid bond
- Conductor Clamps

2. Lightning Materials

- Surge Arrester
- Air Rod and Accessories
- Air Termination

3. Exothermic Welding System



- Compact dimensions
- Splice site visible before casting
- High – quality transparent shockproof plastic moulds
- Stabilized against UV rays
- Ready for immediate operation
- Waterproof
- Quick and simple assembly
- Wide opening for easy casting
- Resistant to Chemical agents like Chlorine
- Resistant to alkaline earth elements
- High electrical insulating values
- High mechanical strength
- Suitable for different Area

● Voltage Level

- 0.6~1 KV
- $V_m = 1.2 \text{ KV}$

● Standards

- EN S0393

➤ Cast Resin Splicing





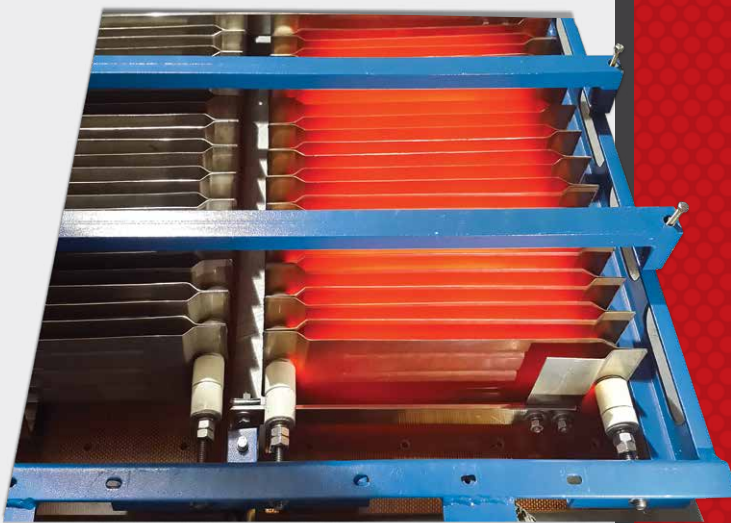
➤ Neutral Grounding Resistor

● Device Features

- Operating voltage up to 72.8 kV
- Rated current up to 4000 amps
- Type Test Certificate (Temperature Rise) from CESI Laboratory, Italy

➤ Industrial Power Resistors

- Dynamic Braking Resistor
- Motor Starting & Control Resistor
- Motor Starting & Control Resistor
- Dummy Load
- Load Bunk
- Resistor for Charging & Discharging a Capacitor or Battery
- Rheostat



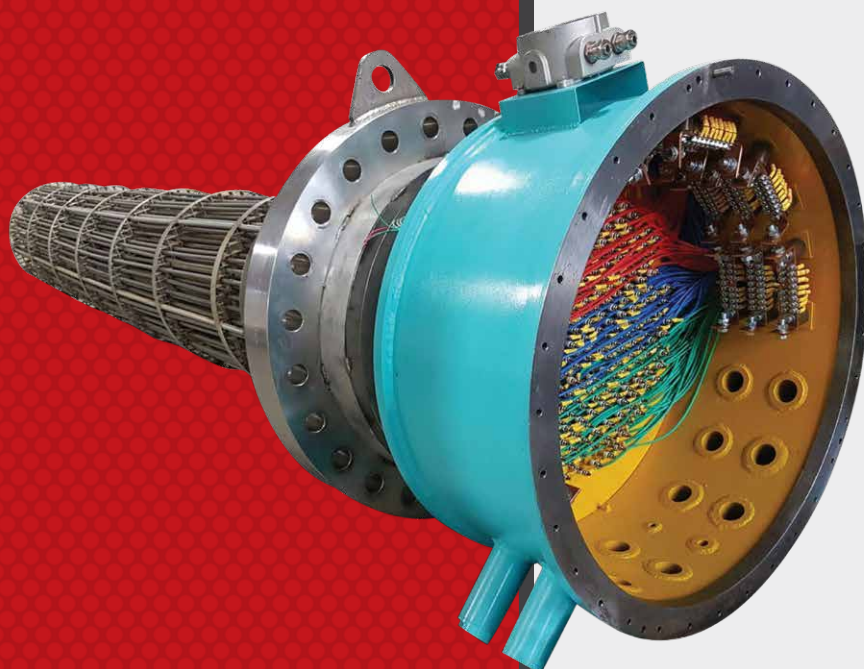


Industrial Heaters

Flanged Heaters & Band Heaters

Device Features:

- Power rating up to 3MW
- Capability of producing explosion-proof box.
- Ability to define different workstations
- Using seamless pipes to produce the elements



ENTRATA CERTIFICAZIONE MACCHINE		Check-list CL_16	Pag. 1 di 90
Preventivo/Commessa: Fabbricante / Manufacturer: BORNA Electronics Co. Via / Address: No. 381, Rayze Ave., Shahr-Ray, Tehran, Iran Telefono / Contactperson: Mr. Sayf Tel.: +98 (021) 5554400-3 Fax: +98 (021) 5554388			
Luoogo della verifica / Site under inspection: BORNA Electronics Co. Via / Address: No. 381, Rayze Ave., Shahr-Ray, Tehran, Iran			
TEST LABORATORIO/EX Test Lab: EPL Co. Via / Address: Unit 6, No. 5, Corner of Reza St., South Shahr Ave., Shahr Hamed Expressway Tehran, Iran Tel.: +98 (021) 8805974-5 Fax: +98 (021) 8805976		Test Report No.: EPL EXTR 04350-1	
Data/ Data: Aug 07, 2017 Preparato da / Prepared by: M. Asghar / AT&T Expert Approvato dal / Approved by: S. M. Mirzadeh / Vice President			
Apparecchiatura / Product: Junction Box of Flange Heater Identificazione del tipo di / Type identification: HE-EX-3-MB-1116 Gruppo / Category: EPL IC / Category: 26			
Elenco delle norme applicate oltre alla: EN 60079-0: IEC/EN 60079-1 IEC/EN 60529			
ISO 9001:2015 Accredited Lab <small>This report should not be reproduced in contracts without written approval by EPL.</small>		ISO 17025 Accredited Lab <small>Test results pertain to the tested sample only.</small>	
<small>Office: Unit 6, No. 5, Corner of Reza St., South Shahr Ave., Shahr Hamed Expressway Tehran, Iran Da Code: 1438554817 Tel: +98(021) 8805974-5, +98(021) 8805976-7 Fax: +98(021) 8805976 Lab: Karam Research City, Supa Bldg. 8th flr. Karam Research City, Tehran, Iran Tel: +98(021) 1110507-7 Mobile: +98(021) 1110508-8 Email: info@epl.com Website: www.epl.com</small>			

➤ Electronic Relays & Digital Panel Meters



● Protection Relays

- **TYPE:** DSN/C THREE PHASE MONITOR
- **TYPE:** ASN THREE PHASE MONITOR
- **TYPE:** ASN/K THREE PHASE MONITOR (ASN/K)
- **TYPE:** TPM THREE PHASE PROTECTION
- **TYPE:** TDP THREE PHASE PROTECTION (TDP)
- **TYPE:** SPR SUPER MOTOTR PROTECTION
- **TYPE:** TPR THREE PHASE MONITOR (6LED)
- **TYPE:** LMR LIQUID LEVEL MONITOR
- **TYPE:** SVR SINGLE PHASE MONITOR
- **TYPE:** SDR SINGLE PHASE PROTECTION
- **TYPE:** SDR/C SINGLE PHASE PROTECTION
- **TYPE:** MMP MINI MOTOR PROTECTION
- **TYPE:** DLM/C OVER LOAD MONITOR
- **TYPE:** OLM OVER LOAD MONITOR
- **TYPE:** OLS SINGLE PHASE OVER LOAD
- **TYPE:** EFZ EARTH FAULT RELAY
- **TYPE:** CT CT CORE BALANCE
- **TYPE:** BFR BATTERY EARTH FAULT
- **TYPE:** OVM OVER VOLTAGE RELAY
- **TYPE:** UVM UNDER VOLTAGE RELAY
- **TYPE:** OCM OVER CURRENT RELAY
- **TYPE:** UCM UNDER CURRENT RELAY

● TIMING RELAYS

- **TYPE:** MTT/C MULTI TIMER
- **TYPE:** MRT/C TIMER MULTI RANGE
- **TYPE:** DOT TIMER RELAY ON OPERATE
- **TYPE:** DOT 24 h TIMER RELAY ON OPERATE (24Hr)
- **TYPE:** ODT TIMER OFF RELAY
- **TYPE:** RCT TIMER RECYCLING
- **TYPE:** RST TIMER RE-START
- **TYPE:** YDS STAR-DELTA TIMER
- **TYPE:** DOT TIMER RELAY ON OPERATE (DOT/M)
- **TYPE:** AST/C ASTRONOMICAL TIMER
- **TYPE:** LST TIME LAG SWITCH
- **TYPE:** SWT/C TIME SWITCH
- **TYPE:** YDT TIMER DELAY ON OPERATE
- **TYPE:** ITR INTERVAL TIMER

● INSTRUMENTATION RELAYS

- **TYPE:** TRI TRANSDUCER (CURRENT)
- **TYPE:** TRU TRANSDUCER (VOLTAGE)

● PANEL METERS

- **TYPE:** MM3-6A 3-PHASE MULTIMETER (6 DISPLAY)
- **TYPE:** TC1-1A TEMPERATURE CONTROLLER
- **TYPE:** MM3-4A 3-PHASE MULTIMETER (4 DISPLAY)
- **TYPE:** TC1-1B TEMPERATURE CONTROLLER

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