



Control Systems



Company Profile

EXHEAT is recognised as one of the world leaders in the design and manufacture of electric process heaters and control systems for both Non Hazardous and Hazardous Area equipment. EXHEAT has extensive global experience in Electrical, Mechanical and Thermal design.

From harsh offshore locations where anti-corrosion properties are of paramount importance, to desert locations where high and low ambient temperatures must be considered, EXHEAT has the expertise you require. Equipment can be supplied to meet both IEC and NEC requirements. Where it is to be installed within a Hazardous area, product certification can be supplied from all certification bodies.

For both onshore and offshore applications, EXHEAT has the knowledge and expertise to design and manufacture control systems suitable for installation within these environments.

In 2014, EXHEAT expanded its manufacturing area to 3,250m², resulting in three separate premises dedicated to bespoke heaters, standard heaters and control system manufacturing. This expansion is in line with EXHEAT's goals of achieving sustainable growth and providing industry leading solutions.

CERTIFICATIONS

EXHEAT holds approvals from North America, Europe, Brazil, China, India, Korea, Russia and globally through the IECEx scheme for the manufacture of electrical heating equipment for use in potentially explosive atmospheres:



Certificate No. FM26078

MISSION STATEMENT

EXHEAT endeavors to lead the global hazardous area electric heaters & control systems industry. We aim to achieve this through core focus on:

- Embracing new technologies and continuous improvement in our product range
- Offering innovative solutions and delivering the best quality
- Offering globally approved equipment certified for hazardous areas
- Serving customers with a high level of service in design, detailed engineering and project management
- Supporting customers worldwide with a team of support / service engineers

QUALITY ASSURANCE

EXHEAT is a Total Quality Environment committed to continuous improvement to ensure that customers' requirements are met and backed up by a level of service necessary to operate in today's global market place.

EXHEAT operates a Quality Management System in accordance with the internationally recognised benchmark standard ISO 9001:2008, which additionally meets the Quality Assurance requirements of both the European ATEX Directive (94/9/EC) & Pressure Equipment Directive (97/23/EC), as well as the international IECEx scheme. Products manufactured for the European market are CE marked and meet the requirements of the European Low Voltage, EMC and Machinery Directives. EXHEAT is also registered with both Achilles and Achilles FPAL, ensuring total quality in its products and systems.

INDUSTRIES SERVED

Oil & Gas
Processing Plants
Chemical
Marine
Power Generation
Medical
Utilities
Petrochemical
Refineries
Pharmaceutical
Food Processing
Construction
General Manufacturers



DESIGN & VERIFICATION

EXHEAT's consultative design process means we work alongside our clients, thereby ensuring we provide the best long term solution for the clients' needs. This solution may come in the form of a vastly complex bespoke system or that of a much simpler system.

Our in house design capabilities include:

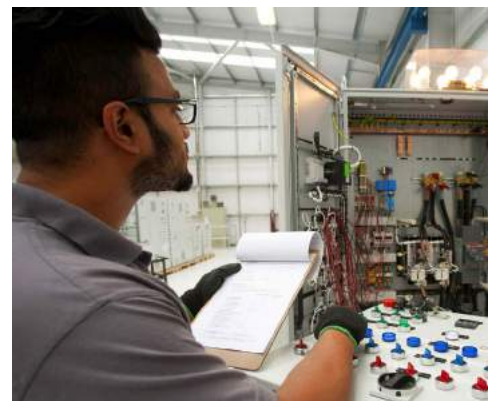
- Full design verification of busbar systems in accordance with IEC61439
- Control systems designed from 10A up to 3200A
- SIL level reports and verification
- Heat dissipation calculations



TESTING FACILITIES

EXHEAT has state of the art testing facilities, including a fully functional load test chamber which is capable of simulating and monitoring environmental conditions whilst testing the systems. Our testing abilities include full load testing, heat soak testing, harmonic analysis and waveform recording.

We have full facilities to accommodate clients throughout any specified test. All test results are logged using calibrated data recording equipment.



Safe Area Control Systems



EXHEAT safe area standard control systems are designed to offer a safe, accurate and cost effective solution for full control of all EXHEAT standard product heaters. Designed and manufactured in our ISO 9001:2008 accredited, purpose built facility; the standard range of control panels are built and tested in accordance with the mandatory IEC 61439 standard.

EXHEAT's safe area control systems are designed to give users precise control over the heating process. Our control systems are manufactured to include the following key features:

- Adjustable temperature controller to provide the user with a local adjustable interface as well as fully automated control
- Earth leakage protection as well as a fascia mounted emergency stop button to provide user protection
- All faults, including both protection facilities listed above, will be latched within the control system and will require manual reset by way of key before the system can be restarted

EXHEAT has more than 20 years of experience in the design and manufacture of safe area control systems, and this is shown in our ability to offer the highest quality product with the shortest possible delivery time.

Each safe area control system can be supplied for the following:

- Suitable for single-phase (up to 254V) and three-phase (380V to 480V)
- Operates at 50Hz or 60Hz
- Can operate any heater up to 70kW that has 2 RTD temperature sensors
- Installation in non-hazardous areas only

Flameproof Control Systems

EXHEAT flameproof control systems and display panels are engineered to the hazardous area concepts of Ex d and Ex de. Full heat dissipation calculations are performed on every Ex d and Ex de concept panel to ensure full certification rules are followed. EXHEAT can manufacture these systems in GRP, marine grade alloy or stainless steel.



Flameproof control systems are suitable for use in the following classified zones / areas:

- ATEX approved ⚡ II 2 G
- CENELEC, IECEx
- Ex d or Ex de IIB or IIC T1 to T6
- Suitable for both Zones 1 & 2
- Certified weatherproof to IP66
- Can be installed in conditions ranging from -20°C to +40°C

Purged Panel Control Systems

EXHEAT purged panel control solutions are engineered to the hazardous area concept of Ex p to IEC/EN60079-2. Full calculations are undertaken in-house. Where cooling systems are required, forced fan cooling systems are replaced by the use of vortex coolers.

EXHEAT has a range of purge units capable of pressurizing enclosures with a volume up to 12.7m³ without any additional calculations required. Larger systems are possible with the use of numerous purge systems and further heat dissipation calculations. Enclosures are available in stainless steel 316 or painted mild steel to the client's specified paint system. All enclosures are rated IP66.



Purged panel control systems are suitable for use in the following classified zones / areas:

- ATEX certified Ex px for Zones 1 & 21
- CSA certified Class I & II, Div 1
- ATEX certified Ex py and Ex pz, Zones 2 & 22
- CSA certified Class I and II, Div 2

Low Voltage MCCs and Modular Systems



EXHEAT engineers MCCs and modular systems for numerous applications to suit any client requirement. The frames used are of welded construction and all busbar sections are type tested and verification provided, in accordance with IEC61439 as required. All client specifications can be applied.

Due to its modular design, the system is able to be expanded up to 50% with minimum modification and system disruption. This enables for easy future system expansion.

- -20 to +40°C operational temperature
- Welded frame modular construction
- IP ratings to IP66
- IEC 61439, etc
- Full condition testing
- Single phase control 230VAC or 110VAC
- 3 phase mains 380VAC to 690VAC
- Customers' personalization
- On/off control
- Fine process control

Remote Control Units and Emergency Shutdown Stations

EXHEAT local and remote control units are designed to offer a local interface for equipment in the field, controlled by a remote source. These units can be manufactured for use in both hazardous and non-hazardous areas having the control facility for on and emergency stop with indications for on and fault status.

All products are supplied with full wiring schematics and hazardous area certification, as required. Suitable cable gland kits can also be provided to ensure a one-stop cost effective solution. All units are provided with our standard warranty and are built & tested in our ISO 9001 certified UK factory, ensuring that EXHEAT's unrivalled high standards are incorporated throughout all of our products.

All EXHEAT units can be manufactured for use in any of the below hazardous and non-hazardous areas:

ATEX / IECEx / GOST						
Zone	0	1	2	20	21	22
		✓	✓		✓	✓

NEC 505 Class 1			
Zone	0	1	2
		✓	✓

NEC 500						
	Class I		Class II		Class III	
Division	1	2	1	2	1	2
		✓	✓	✓	✓	✓



All units can be certified to any of the below international standards:

ATEX 94/9/EC

- II2 G Ex td T6
- II2 G Ex db IIC
- II2 D Ex tb IIIC (T85 °C – T150 °C)
- II2 G Ex ed II T6
- II2 D Ex tD A21 T85 °C

INMETRO

- Ex db IIB T6
- Ex tb IIIC (T85 °C – T150 °C)
- Ex ed II T6
- Ex tD A21 T85 °C

NEC505

- USL: Class 1, Zone 1
Ex db IIB Zone 21
Ex tb IIIC (T85 °C – T150 °C)
- CNL: Ex d IIB Class II, Groups E, F, G

IECEx

- Ex db IIB T6
- Ex tb IIIC (T85 °C – T150 °C)
- Ex ed II T6
- Ex tD A21 T85 °C

GOST-R (RTR-N)/K

- 1 Ex d IIB T6
- Ex tD A21 (T85 °C – T150 °C)
- Ex ed Gb IIC T6
- Ex t IIIC Db
- Ex tD A21 T85 °C

Experience List

- ADCO
- AGIP KCO
- Aibel
- AIOC
- Air Products
- Air Products & Chemicals Inc
- Al Khafji Joint Operations
- AMEC
- Apache North Sea Limited
- Athabasca Oil Corp
- ATP Oil & Gas
- Borasco Elektrik Uretim
- BP Angola
- BP Exploration
- Cabinda Gulf Oil Co
- Cabot
- Cardiff University
- Centrica Storage
- Chevron
- Chevron Australia Pty
- Chrysaor Holdings Limited
- ConocoPhillips
- Dana Petroleum
- Debswana Diamond Company
- DomGas
- EDF Energy
- Egdon Resources UK Limited
- Enap
- ENI & Statoil
- Enquest
- ExxonMobil
- Fairfield Betula Ltd
- Fiorentini UK
- GAIL (Gas Authority of India Limited)
- Gazprom Neft
- GDF Suez Group
- GEC
- Goteborg Energi
- GSI
- Hellenic Petroleum
- HOP
- INEOS
- INPEX
- ITER LN2
- Ithaca Energy
- KarpatyGas
- KPOC
- Kvaerner & Aker
- LG Chem Corporation
- LLP KazakhOil Aktobe
- Lukoil
- Lukoil Neftochim Bourgas
- Lundin Petroleum
- Marathon Oil UK Ltd

- Modec
- National Grid
- National Iranian Oil Company (NIOC)
- Newfield
- Nexen Petroleum
- North Caspian Sea Operating Company (NCSOC)
- OJSC Severo-Zapadny MN
- Oman Oil Company
- Oranje Nassau Energie BV
- Oryx Petroleum
- Pan American Energy
- PDO
- PEMEX
- Petrobras
- PetroChina Company Limited
- Petroleum Development Oman
- Petronas
- PETRORabigh JV Saudi Aramco
- Phoenix Park Gas Processors
- PKN Orlen
- Polish Oil & Gas Company
- Premier Oil / TEG package
- Process Group Pty Ltd
- PTT Public Company Limited
- PV Bien Dong Production & Operating Co
- Qatar Petroleum
- RAO UES of Russia
- Rolls Royce
- Rosneft
- RusVinyl - Sibur
- RWE Dea UK
- Sabic
- Sakhalin Energy Investment Company Ltd
- Saudi Aramco
- Saudi Electricity Company
- Shell
- Sibur
- Sibur Holdings
- Slavneft
- Sonatrach/CPF
- SPDC Nigeria
- Statoil AS
- Statoil Hydro
- Syzran Oil
- Talisman Energy
- Tarbagaty Munay (TBM)
- Teekay Shipping
- Tengizchevroil
- TNK-BP OrenburgNeft
- Total
- Total E&P
- Tractebel
- Transcorp
- Transfield Worley Limited

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