Public Address General Alarm
for harsh environments

E·T·N

Powering Business Worldwide

Hazardous Area Communications

MEDC   Oxalis   IMCOS™   Sonix™   HERNIS™   Yuhua   FHF

Eaton's Crouse-Hinds series hazardous area communications solutions are a comprehensive product suite for potentially explosive atmospheres, bringing together specialised products and systems solutions with trusted names such as MEDC, FHF, HERNIS™, Gitiesse and Oxalis. These products for harsh and hazardous environments bring together a range of world class specialist products and solutions for both safety and security in the fire & gas, telecommunications, PAGA and CCTV markets.

The oil and gas industry relies on Eaton's highly respected MEDC range of signaling, alarms and loudspeakers. Designed for potentially explosive atmospheres, harsh industrial and marine environments, Eaton offers a comprehensive range of innovative notification solutions.

The Oxalis CCTV camera stations are specifically designed for use in the demanding oil & gas and other extreme environments and use leading edge technology such as full High Definition (HD) over IP technology.

IMCOS™, Integrated Multimedia Communication System is tailor-made for your requirements. IMCOS™ is a world-class brand in the marine, offshore, and oil and gas industries offering integrated solutions for internal communications and the distribution of alarms and signals.

HERNIS™ is a world leading product range for high quality, durable and low maintenance Closed Circuit Television Systems (CCTV) for the oil and gas and marine industries. Designed for the extreme, our systems perform safely and reliably, increasing efficiency and providing safety to both people and equipment.

As part of the MEDC product line, a range of products and systems including the high integrity, fully monitored and highly efficient Sonix™ Public Address General Alarm (PAGA) system. In conjunction with the MEDC range of loudspeakers, flashing beacon and FHF telephones, this provides the most efficient and effective PAGA solution available.

Engineers, end users and employees in a wide range of industries rely on the innovative FHF range. Decades of experience in the fields of industrial communication and signaling backed up with the continuous drive for improvement and innovation, lead to products which are considered as best in class.

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About Sonix™ PA/GA

The MEDC Sonix™ PA/GA system supplies public address and general alarm, telephones, evacuation systems, intercoms and critical telecoms equipment to industries with challenging environments. Potentially hazardous atmospheres demand superior performance and our expertise, together with many years' experience encompass numerous hazardous area applications including oil and gas, marine, power, nuclear and critical infrastructure.

MEDC is an ISO9001, ISO14001 and OHSAS18001 certified manufacturer operating at the highest levels of product quality and reliability. All products meet stringent safety specifications and are approved and certified by leading international regulatory bodies and authorities.

As the world is moving to rely on a faster IP and wireless based architecture, our in-house research and development team enables us to respond to industry trends and to combine proven designs with new technologies.

The Sonix™ system has been designed to provide a common technical solution for onshore, offshore and industrial applications where high integrity, life safety applications are necessary. Sonix™ PA/GA is the most secure, highly monitored and flexible public address general alarm solution available today. To reinforce the physical PA/GA system, Sonix™ is Type approved by class societies to ABS, BV, and DNV with UL and CSA pending.

Let us introduce our patented revolutionary Sonix™ platform from MEDC

The Sonix™ PA/GA system has been developed and manufactured with inbuilt flexibility for oil, gas, petrochemical and power industries. Its flexibility comes from a universal communication format which allows information to be transmitted between the product, whether local or distributed. This information flow is transmitted via CAT6 cables which also provides a fast, secure and efficient interconnection system. To ensure reliability, these communication paths are fully duplicated, with auto switch over on data loss or corruption. As new products are developed, the new data generated can be easily integrated and targeted to units that need it.

At the heart of the system is a patent protected dual path 92% high efficiency amplifier, enclosed within a compact 1U case. This amplifier continues the flexibility out to the field by monitoring for both radial or loop speaker runs. The Sonix™ software adds further flexibility by allowing the system to be re-configured as the site develops throughout its life.

This software is completely passive and isolated from critical system operation, but provides a convenient way to monitor the detailed status of the system. This allows the software to be located offsite without affecting system performance or operation. Sonix™ is truly a plug and play solution for the harshest environments without compromising safety.

Rugged reliability

Public Address General Alarm system

Sonix™ PA/GA

Sonix™ has been designed to provide the most technically comprehensive and secure PA/GA solution available today. Sonix™ offers technical, commerical and operational value to integrators, EPCs and end users. Our design team has focused to ensure that Sonix™ adds true value to every level of the customer chain throughout all points of product development and execution.

The Sonix™ PA/GA System has been developed, manufactured and tested in line with the modern requirements of the oil, gas, petrochemical and power generation markets of today and tomorrow. Sonix™ is able to offer compliant communication solutions to meet the most demanding applications for onshore, offshore, marine and industrial installations. Designed to enhance modern communication philosophies, the Sonix™ PA/GA system includes a highly sophisticated yet simplified architecture that removes the need for lengthy engineering cycles, bespoke and costly software, custom field engineering or expensive on-site commissioning.

This results in a highly effective and flexible communications solution for the next generation. The Sonix™ system is rigorously designed for installation in both safe area or potentially explosive environments using latest protection philosophies including EExe, m, i and p to ensure the highest levels of safety without compromising operational features.

Sonix™ Hmi 5 ⟨Ex⟩

PA/GA Hmi access unit

Sonix™ Hmi 5 is a compact, ATEX/IECEx Hmi access panel designed to operate PA/GA equipment. The Hmi 5 has been specifically designed to operate in harsh environments; it's certified from -40° to +60°C and can be used within Zones 0, 1 and 2 Ex environments just as easily as it can be in safe area applications. Tested to IP66 the Hmi 5 offers the perfect solution for external applications. Type approved for offshore and marine use, the Hmi 5 connects to the Sonix™ system via a 2-pair armoured cable. The Hmi 5 has been specifically designed to work with the Sonix™ Hmi Br intrinsic barrier. The Hmi Br is designed to give the perfect balance of power within the I.S circuit. This permits the Hmi 5 to offer backlit buttons for low light conditions, on-board re-programmable features, and a local loudspeaker mute control.

High integrity communication between the Hmi 5 and partner equipment is achieved in such a way as to avoid transmitted "DTMF" bleed-through, sometimes found on similar equipment. Communication to and from the Hmi 5 is fully monitored at all times.

Sonix™ Hmi 26

PA/GA Hmi access unit

Sonix™ Hmi 26 is a compact, rugged Hmi access panel designed to operate Sonix™ PA/GA equipment. The Hmi 26 has been specifically designed to operate as a 19" chassis, wall, console or desktop mounted unit. Certified to exceed DNV and IMO SOLAS regulations, the Hmi 26 connects to the partner equipment via a 2-pair armoured cable. Sonix™ Hmi 26 enables operation of PA/GA to selected zones, selection of pre-recorded messages via the M512 unit and zoned alarms. High integrity data communication between the Hmi 26 and partner equipment is achieved in such a way as to avoid transmitted "DTMF" bleed through, sometimes found on similar equipment. Connected via copper or fibre, the data communication to the Hmi 26 is fully monitored at all times.

With a Vu Meter, shortcuts panel, choice of handheld microphone and 26 fully re-configurable, backlit buttons, the Hmi26 is the access panel of choice.

Sonix™ Hmi benefits and features

• State of the art technology
• 50% reduction in cable and installation costs for Hmi
• Local mute speaker bypass and control via Hmi access unit
• Fully monitored audio path
• Ease of installation and relocation once installed
• Back lit push buttons for low light conditions
• Fully reprogrammable button configurations
• Low profile design, reducing cabinet size
• Vastly simplified architecture
• Fully duplicated and monitored internal cables
• Full range of type approvals
• ATEX and IECEx certified

Control, manage and protect

Matrix manager

Sonix™ 2Mx
Matrix management unit

The Sonix™ 2Mx matrix unit provides an integral backbone for the structure of the Sonix™ PA/GA system, housed within an ergonomic and compact 1U case. Connectivity of this unit is via colour coded, rapid fit RJ45 patch cords to ensure efficient installation and maintenance. The unit provides a highly visible front panel and system activity status, along with status of the external GUI for remote users. The 2Mx internal data bus and field wiring is fully monitored, and multi broadcast on a hybrid data network. It operates on internal and external self-healing rings to ensure continuous service at all times.

Multiple speech paths, 12 address zones, 6 manual alarm tones and 24 zoned auto F&G alarms provide the 2Mx unit with powerful, flexible and secure field reprogrammable features. Real-time continuous monitoring of the PA/GA system and peripheral connectivity is controlled and managed within the 2Mx unit. Hmi access panel audio and data signals are independently monitored, while loudspeaker networks are monitored with an inaudible integrity signal. Beacon networks are monitored with a voltage test signal.

In addition to fully duplicated architecture, the 2Mx unit allows for auto switch over of all signals between A & B systems in the event of a local fault (A+B PLUS). This ensures that if either 2Mx unit is not operational, all amplifiers and beacons are controlled from the remaining 2Mx controller, which is done without the need for de-rating either system to manage the total load capacity. This results in zero loss of broadcast signal whilst maintenance is being carried out and can be achieved without overloading the remaining operation system.

Compact design

High efficiency amplifiers

Sonix™ 350-d
PA/GA parallel power amplifier unit

Sonix™ 350-d power amplifier is a compact 1U designed housing the 350W amplifier module, power supply, status panel and thermal management units. Sonix™ 350-d autonomously monitors and supervises the amplifier, loudspeaker cable insulation and loop integrity with an inaudible signal. The robust and industrial design of the 350-d amplifier ensures its protection against open circuit, short circuit, load deviation and abnormal loads sometimes associated with complex field loop faults. In the event of abnormally high ambient temperatures, the 350-d is fitted with a multi-stage, intelligent over-temp protection circuit that ensures the amplifier remains active at all times.

The on board power supply and fans are fully monitored to ensure reliable and continuous operation. Central to the Sonix™ PA/GA system efficiency is the patent protected 350-d parallel power amplifier. The 350-d has been specifically designed with Sonix™ parallel amplifier technology to offer the most efficient and compact amplifier and power supply available, at over 92%. The 350-d simply and securely connects to the PA/GA system via rapid fit RJ45 and standard IEC power receptacles to ensure quick installation and simple maintenance.

Designed as a self contained unit without the need for sub frames or cards, the Sonix™ 350-d reduces the risk of failure between distributed parts and dramatically reduces down time in the unlikely event of equipment replacement.

Constant performance

Power management

Sonix™ Pm 10
PA/GA power management unit

Sonix™ Pm-10 is a compact 1U device housing the circuitry for power distribution, switchover and integrity management for the Sonix™ PA/GA system components. The Pm-10 ensures that critical power is protected, monitored, and efficiently and securely distributed throughout the PA/GA system at all times. For highly critical systems requiring duplicated power inputs, the Sonix™ Pm-10 ensures that in the event of power loss, the system will seamlessly switch over to the standby power supply, without system outage or power loss.

Should the supply return to the system, the unit will automatically reinstate the primary supply and continue to monitor the secondary. The Pm10 device also monitors and indicates fuse condition as part of the critical path, resulting in fast and effective fault finding, speedy repair, ease of use and system repair. Rapid fit RJ45 power bus connection permits intelligent monitoring of incoming power, voltage, current, and distribution cabling.

Reporting both back to the 2Mx status panel, Sonix™ software interface and site wide DCS system ensures that the operator is aware of system status at all times.

Input power connection to the Pm-10 unit is via a shake proof industrial plug and socket, ensuring simple and quick connectivity of the unit and efficient maintenance.

Distributed intelligence

Digital messaging

Sonix™ Ms 12

PA/GA digital message store

The Sonix™ Ms12 is a compact 19″ 1U designed housing for the Sonix™ digital message store. It provides the user with the secure means to record and play back digital messages via the PA/GA system. Users can simply record either analogue or digital messages or routine announcements and load them to one of the Ms12 secure memory locations. Loading is carried out through either USB or line inputs. The required message can be inititated through either 12 volt free inputs on the rear of the Ms12 or programmable keys on the Hmi 26 access panel.

Through Sonix™ configuration software, the user can select if the messages should be broadcast to all zones (global) or to pre configured zones of address. The Sonix™ Ms12 provides fully duplicated and isolated synchronised outputs to ensure that both A and B PA/GA systems broadcast simultaneously. Connection to the host PA/GA systems can be carried out either through CAT6 or 2 pair twisted cable depending upon user selection. Zoned selection is available via CAT 6 and global is available via 2 pair connection.

To ensure a rapid warning of any system issues, all monitoring of Ms12, power supply, data communication network and field cabling is reported onboard the front status panel, the 2Mx matrix, on the Sonix™ software interface and out to the site wide distributed control system (DCS).

Broadcast

Private branch exchange interface

Sonix™ Pbx
PA/GA Pbx interface

Sonix™ Pbx is a compact 19″ 1U chassis, or IP65 ABS enclosure housing a compact and efficient circuit. It interfaces the PA/GA system to site Pbx systems, providing a means to record and play back Pbx messages via the PA/GA without risk of Larsen effects. Users can take advantage of the audio prompt feature to opt for either global (all zones) or zone select message playback ensuring only the required zones of address are selected. Upon completion of the message, the PA/GA system will broadcast the message as selected. If required the delay can be removed or cancelled to provide a direct live access to the PA/GA system.

The Sonix™ Pbx provides fully duplicated and isolated synchronised outputs to ensure that both A and B PA/GA systems broadcast simultaneously. A supervisor monitor and cancel feature is provided that allows all recorded messages to be monitored prior to broadcast is made. This ensures that any unwanted or inappropriate messages can simply and effectively be removed from the playback queue. Connection to the host PA/GA systems can be either through CAT6 or 2 pair twisted cable depending upon user selection. Zoned selection is available via CAT 6 and global selection is available via 2 wire connection.

Connection to the site/client Pbx is available through 2-wire audio and 2-wire E&M connectivity. To ensure rapid and early warning of any system issues, all monitoring of Pbx power supply, data communication network and field cabling is reported on the front status panel, the 2Mx matrix, Sonix™ software interface, and out to the site wide DCS.

The configurator

Configure, status, log

Sonix™ software

Sonix™ software is a dedicated software package that allows integrators, users and operators to log in to the Sonix™ PA/GA system for re-configuration, system status and activity logs. This ensures that the full control and flexibility of the Sonix™ system remains within our clients capable hands. The Sonix™ PA/GA system has been designed from the core to allow maximum hardware and firmware flexibility, as well as the highest levels of security and system operation. The Sonix™ software adds to this flexibility and control by providing an unrivalled solution for the most demanding and security sensitive applications. Sonix™ software can be used to monitor and configure the PA/GA system via a local or remote computer connected to the network.

This flexibility ensures that the system status is always known. For added security, Sonix™ software is provided with user log-in facility and operator restriction to ensure users are permitted defined access which can be determined by the owner. A detailed log of user, date, time and changes of access rights is also available to provide an auditable trace for safety analysis if needed. Configurations can be easily prepared in advance before being uploaded to the system.

Once connected and loaded, configurations can be overwritten, saved and modified as needed with backups saved from the host PA/GA system.

Monitors and protects

End of line units

Sonix™ Eol 8

PA/GA power amplifier end of line units

Sonix™ Eol 8 unit is a compact, high efficiency speaker loop monitoring device designed to work with the 350-d amplifiers. It securely houses the circuitry and management for loudspeakers connected to the Sonix™ PA/GA system and external field cabling. Sonix™ PA/GA autonomously monitors and supervises the amplifier, loudspeaker cable insulation and loop integrity with a high frequency inaudible out of band signal every minute. The robust and industrial design of the system ensures its protection against open circuit, short circuit, load deviation and abnormal loads associated with field loop faults.

In the event of such common field loop faults, the Eol 8 rapidly detects, reports and diagnoses the fault, reporting this information back to the amplifier, 2Mx controller, ICCS output and to the Sonix™ software. During this process, the amplifier automatically protects the output from permanent damage.

The unit is provided with loudspeaker loop blade terminals to securely and safely isolate the field cables for testing and fault rectification. The Eol 8 ensures that field speakers are driven with audio signals in both directions at all times. Additionally, the self-healing ring design feature ensures that in the event of an open circuit condition critical communications are made in full.

The Eol 8 is connected within the Sonix™ central cabinet via dual rapid fit RJ45 connectors. For additional safety, should either cable become disconnected then the amplifier will isolate its output to avoid electrical shock risk or cable overcurrent conditions. This is reported via the amplifier, 2Mx, and Sonix™ software.

This ensures a quick and fail-safe connection to the amplifier. For additional security, this internal connection can also be operated on a self-healing ring architecture. Each Eol 8 can manage 8 amplifiers or be easily configured to provide 8 common (series) outputs per amplifier to assist with field cable topology and reduce IDF requirements on larger loops.

Loop monitoring

End of line units

Sonix™ Eol

PA/GA power amplifier end of line units

Sonix™ Eol 1 is a compact designed unit, housing the circuitry for amplifier loudspeaker circuit monitoring. On systems where loudspeakers cannot be connected in "self-healing loop" topology, the Eol 1 can be located after or within the last radial speaker to monitor that radial/spur. For use in either safe or hazardous areas, the Eol 1 provides fault free and seamless speaker loop monitoring as if connected in a loop back to the PA/GA cabinet. The Sonix™ 350-d amplifiers regularly perform silent monitoring and interrogation of each amplifier loop connected to the system, checking for open circuit, short, earth and loudspeaker load deviations.

During this process, the Eol 1 will acknowledge the signal and handshake report back its status to the amplifier. Any loss of handshake or non-definitive results will trigger the amplifier and 2Mx to report a fault which will be displayed to the user via front status panels and out to the site wide ICCS system. The Eol 1 is supplied as standard in an industrial IP67 polycarbonate, or EExd explosion proof enclosure, ready to install.

Other enclosure options are available upon request. Connection to the Eol 1 is simply achieved by means of three 2.5mm² terminals; two for the speaker cable (non-polarised) and one bonded to earth.

Field device control

Termination units

Sonix™ termination units

Sonix™ Hmi Tu provides a secure and reliable means of terminating the Hmi field cable to the PA/GA cabinet whilst providing monitoring and management of up to 12 phantom powered Hmi panels on 2 pair cables.

Sonix™ Vw2 unit is a compact, high efficiency, beacon loop monitoring device. Designed to work with the 2Mx PA/GA matrix, the Vw2 can be configured to provide 12 independent 20A channels.

Sonix™ Io Tu unit is a compact, DIN mountable, high efficiency, input-output termination device. Designed to work with the 2Mx matrix, the Io Tu provides connection of all external interfaces inbound and outbound to the PA/GA system, F&G, ICCS, Entertainments, UHF radio, PBX and many others.

Sonix™ Eol 8 Tu manages up to 8 x 350w amplifiers, eliminating the use of high volt drop ribbon cables. It provides lightning protection, EOL line monitoring and adhoc re-configuration of field loop topology. The Eol 8 Tu provides the security and flexibility needed within PA/GA applications.

Sonix™ Io Ep Tu unit is a compact, DIN mountable, input-output expansion termination device. It is designed to work in conjunction with the Io Tu where large scale or zoned fire and gas or complex cause and effect inputs are required.

Keep talking

Telephony

Weatherproof telephone

This weatherproof telephone from FHF is as stylish for indoor use as it is resistant for outdoor use in safe areas. With an operating temperature of -20°C to +60°C, and an ingress protection rating of IP65, the FernTel 3 is suitable for many different applications.

The unit is offered in two variations; the 16 buttons without display or with 21 buttons with display.

Both variations are offered with spiral cord or steel armoured cord. Additionally, some models of the FernTel 3 come with additional features such as telephone directory (display version)

and hotline phone (ZB version).

The FernTel 3 is suitable for almost universal use thanks to its transformability and can be mounted to either a wall or desk.

Telephone protection hood

The telephone protection hood is an excellent aid to cut out extraneous noise and improve audibility in noisy surroundings when open telephones have to be installed for economic reasons.

The special shape of the hood and its inner lining of sound-absorbing material optimally reduces noise in the area of the telephone. Eavesdropping is also made difficult.

The best acoustic effect is achieved when the protection hood is mounted with its back facing the noise source or loudest noise source

Ex industrial telephone

The Ex ResistTel telephone from FHF is an Explosion-proof and weatherproof, industrial telephone, certified for use in hazardous dust and gas atmospheres. It is completely programmable, and has been equipped with a 21-piece stainless

steel (4VA) keypad, designed for use with industrial gloves.

This Ex telephone has been developed for operation in the petro-chemical industry, offshore plants, mills and harbours. It is build to withstand extreme

temperatures, air humidity, sea water dust and strong mechanical wear and tear.

See and hear the Sonix™ experience

Field equipment

Ex flashing beacon

The MEDC XB12 high output certified beacon has been designed for use in potentially explosive atmospheres and harsh environmental conditions. The enclosures are suitable for use offshore or onshore, where light weight combined with corrosion resistance is required. With a glass reinforced polyester body, the XB12 leads the way in signalling devices where the effects of harsh environmental conditions and extreme temperatures of -55°C to +70°C demand the highest quality and performance possible. With global certifications including ATEX, IECEx, Inmetro , cULus, ULC, CUTR & CQST, the XB12 can be specified and selected for all applications.

Sonix™ sound pressure meter

Sonix™ Spl 100 is a compact, ruggedized digital sound pressure meter. It is vital to ensure that any PA/GA installation produces the correct level and coverage of audio power to meet user specifications and regulatory requirements. The Sonix™ Spl 100 provides the latest features and benefits usually only reserved for far more expensive and complex devices.

Sonix™ mute tu PA/GA

The Sonix™ mute allows for direct connection of a mutable loudspeaker control to the local Hmi panel. Whilst control is local the audio is fed via the main amplifier loop. This feature removes the need for extensive, exposed mutable speaker cables back to the main PA/GA cabinets, and saves purchase, installation and maintenance costs. The mute unit ensures that all mutable speakers are part of a fully monitored amplifier loop and monitored at all times.

Audible and visual combination unit

This MEDC CU1 combination unit is intended for use in potentially explosive gas atmospheres providing a sound output of up to 116dB(A) and tube energy of up to 10 joules (beacon). With global certifcations including ATEX, IECEx, CUTR and Inmetro, it is suitable for use in the harsh environmental conditions found in the offshore and onshore, oil, gas and petrochemical industries.

The flamepaths, flare and body are manufactured from a UV stable glass reinforced polyester. Stainless steel screws and mounting stirrup are incorporated to ensure a corrosion-free product. A tapered flamepath is used to overcome the problems of assembly of parallel spigot flamepaths.

Ceiling-mounted loudspeaker

This MEDC ceiling-mounted loudspeaker, intended for use in potentially explosive atmospheres, has a power rating of up to 8 Watts (upon request) and is suitable for use in the harsh environmental conditions found in the offshore and onshore, oil, gas and petrochemical industries. The lightweight, patented design provides self-supporting and self-locking mounting onto a ceiling tile from 0.5 to 55mm thick.

The speaker is held in the mount via a twist-fit support and locking grille, giving access from above or below and allowing first fit of either ceiling or speakers.The DB20C's compact design will fit a ceiling cavity of limited space and its aesthetically pleasing appearance will enhance the surroundings.

Ex loudspeaker

The DB4B is a high power, explosion proof loudspeaker from MEDC. Certified for use in a wide range of temperatures (from -55°C to +70°C) the Ex enclosure is manufactured from GRP with a rugged thermoplastic flare providing a corrosion free and aesthetically pleasing product.

The SPL figure for sensitivity (1W @ 1m) is 113dB. At 1m, 25W unit produces a maximum SPL of 127dB, the 15W unit 125dB and the 8W unit 123dB.

Services

From simple Ex electrical enclosures through to complex PA/GA and CCTV solutions, the availability and reliability of Sonix™ equipment is down to how well it is installed and commissioned. To assist clients in all aspects of site work, Eaton offers a team of fully certified, qualified and experienced field engineers. Ensuring that equipment is installed to the latest regulatory standards, the system is commissioned fully and handed over for SAT in a compliant and expedient manner.

Hazardous Area Communications

Unit B
Sutton Parkway
Oddicroft Lane
Sutton in Ashfield
NG17 5FB
United Kingdom

Tel:+ 44 1623 444400
Fax: + 44 1623 444531

hacmarketing@eaton.com

www.crouse-hinds.com/hac

Italy Office
Via Al Ponte Polcevera 8/14
16161 Genova
Italia

T: +39 10 7416 801
F: +39 10 740 21 31

Norway Office
P.O. Box 791 Stoa
NO-4809 Arendal
Norway

T: +47 37 06 37 00
F: +47 37 06 37 06

Germany Office
FHF Funke + Huster Fernsig GmbH
Gewerbeallee 15-19
45478 Mülheim
a.d.Ruhr, Germany

T: +49 208 82 68 0
F: +49 208 82 68 286

Dubai Office
Techno Park, Jebel Ali (South)
P.O. Box 261768
Dubai,
United Arab Emirates

T: +971 4 8066100

USA Office
3413 North Sam
Houston
Parkway West
Houston, TX 77086
USA

T: +1 713 937 9772
F: +1 713 937 9773

Korea Office
7th Fl. Parkland Building
601, Eonju-ro, Gangnam-gu
Seoul
Korea

T: +82 2 6380 483
F: +82 2 3484 6778

Singapore Office
No.2 Serangoon
North Avenue 5
#06-01. Fu Yu Building
Singapore 554911

T: +65 6645 9888

Saudi Arabia Office
Middle East LLC - Dammam
K.S.A.
PLANT AT 2ND
Industrial City Dammam
111, Jubail Street
PO BOX: 70160
Al Khobar, Pin:31952.
Kingdom of Saudi Arabia

T: +966 3 812 2970