




# MURPHY®

by **ENOVATION** CONTROLS

## PRODUCT OVERVIEW

### CONTROLS & INSTRUMENTATION



More than 75 years ago, Murphy products began with a simple idea – identify an unmet need in the industry and provide a reliable solution. Since then our offerings have grown to more than 3,800 products.

Our ever-expanding product breadth includes sophisticated engine control and monitoring systems, electronic and mechanical controls, custom engineered control panels and systems, intelligent ignition control systems, air-fuel ratio controllers, battery chargers, expandable I/O modules and an array of electronic displays. We offer full solutions for challenging projects.

Murphy products are rugged, reliable, innovative and focused on meeting the needs of our customers. With a proven history of reliability, our products are designed and built to meet the highest standards and operate in the most demanding applications.

For more information on any of our products or to discuss a custom solution, contact your Murphy representative. ▲

# PowerView® & HelmView® Displays

The Murphy PowerView and HelmView line of electronic displays give operators a clear, concise look into modern engines allowing for ease of integration into any application. A range of display options are available, from basic diagnostic to more advanced multifunction and customization capabilities.



## PV780 and PV450 Displays

- Electronic multifunction, fully customizable displays
- Full color, ultra bright, daylight visible with nighttime mode
- Configurable via PowerVision Configuration Studio®
- Service reminder and data logging capability
- Great solution for all types of environments
- PV780, 7" WQVGA screen; PV450 4.3" WQVGA screen



## HV450 and PV350 Displays

- J1939 and NMEA 2000 capable
- Ultra bright screen, daylight visible with nighttime mode
- Great solution for all types of environments and applications
- HV450 4.3" WQVGA screen; PV350 3.8" monochrome screen



## PV380 Displays and MLC380

- Additional I/O allows for both electronic (ECU/CAN J1939) and mechanical engine monitoring and control
- 3.8" QVGA monochrome LCD display
- Integrates standard J1939 parameters and fault codes
- Customizable through PowerVision Configuration Studio
- MLC380 panel features the PV380 display, ignition key switch and fuse, all within a CRS enclosure



## PV101 and PV25 Displays

- PV101 displays SAE J1939 standard parameters and diagnostic trouble codes in a compact monochrome dial
- Customizable screens and multiple language capabilities
- Tier 4 compliant
- PV25 displays up to 20 standard J1939 messages
- Standard and proprietary diagnostic codes
- Hourmeter and tachometer in a compact, 2" dia. dial

## PowerVision Configuration Studio® Software

### For PowerView Instruments

- Powerful software development tool
- Provides complete customization
- Change the look and feel of the equipment screens
- Customize parameters, edit troubleshooting information
- Upload company branding on displays



See Murphy General Catalog for complete details

# MurphyLink® J1939 Expandable I/O

## XM500 I/O Module

- Adds I/O to existing J1939 network
- Wide operating temperature range
- Inputs for digital (switch) or analog signals (0-5V; 4-20mA)
- Durable, sealed enclosure for Deutsch connectors



## Other J1939 I/O Modules

- Compact modules to connect CAN J1939 to I/O switches, etc.
- SenderCAN® - Adds I/O to ECU; 4 switch inputs, 2 control outputs
- CANdrive™ - Interface to drive electric gages
- FuelCAN™ - Fuel sender to CAN
- MeCAN™ - Magnetic pickup and analog inputs to CAN



# PowerCore® Control

## PowerCore® IX3212 Intelligent Xpansion Module

- Power distribution and I/O for CAN J1939 displays and systems
- 8 analog; 12 digital inputs; 12 high-power, protected FET outputs
- Solid state electronics, no fuses, relays or moving parts
- Fully sealed case for vehicle/equipment exposed mounting



## PowerCore® Controllers

- Automatic start and stop controllers with backlit graphical display
- Configurable via easy-to-use configuration software
- Compatible for both mechanical and J1939 electronic engines
- Customize and save default settings for specific applications
- Modbus® RTU Internet ready and Tier 4 compliant
- Rugged, fully sealed design is ideal for many environments



## PowerCore® Control Panels

- Full-control, PowerCore panels for auto start/stop applications
- Compatible for both mechanical and J1939 electronic engines
- Available within a sealed CRS or Polycarbonate NEMA 4 enclosure
- Available ECU-compatible wiring harness options



## EMSPRO Engine Monitoring System Controller

- Automatic start and stop controller with backlit graphical monochrome display
- One panel is compatible for both mechanical and J1939 electronic engines
- Modbus RTU Internet ready
- NEMA 4 enclosure – Tier 4 compliant





# Controls & Instruments

We offer the broadest range of durable and dependable products for industrial applications. From modern instrumentation for electronic engines to traditional devices for mechanical engines, Murphy products offer the right solution for your application.



## Cascade Auto Start/Stop Controller

- Simple auto-start engine controller
- Fits simple and robust engine-driven applications
- Set point alarm and shut-down control
- For use on both mechanical and electronic engines

## Other Engine Controllers

- Keystart – manual start/stop and automatic fault protection on mechanical engines
- CANstart™ - start/stop and auto fault protection on J1939 engines, drives electric gages such as Murphy EG21 and EGS21 series



## Sentinel Battery Chargers

- Dependable battery protection offers superior features
- Intelligent charging to maximize battery power and lifetime
- Advanced design optimizes battery performance
- Automatic float and boost charging
- Temperature compensated charging
- Option for analog metering, backlit display, control/ alarm I/O and RS485/CAN J1939 datacomms
- Compliance: UL1236, CSA, CE, NFPA110 on selected models



## Push/Pull Solenoid & Rack Puller for Diesel Engines

- RP75 Rack Puller models for 12- or 24-volt systems feature 30 lbf pulling force for injection pump or air intake shut-off lever
- RP2300 Pull/Push operation solenoid models for Diesel engines
- These models operate from Murphy Swichgage® instruments signal via Tattletale® Annunciator



## Tattletale® Magnetic Switch Annunciators

- Load carrying switches convert pilot duty Swichgage® contacts
- Tattletales are the force to translate Swichgage® contact operation into engine control to operate alarms and shutdowns
- Models available for engines and electric motors

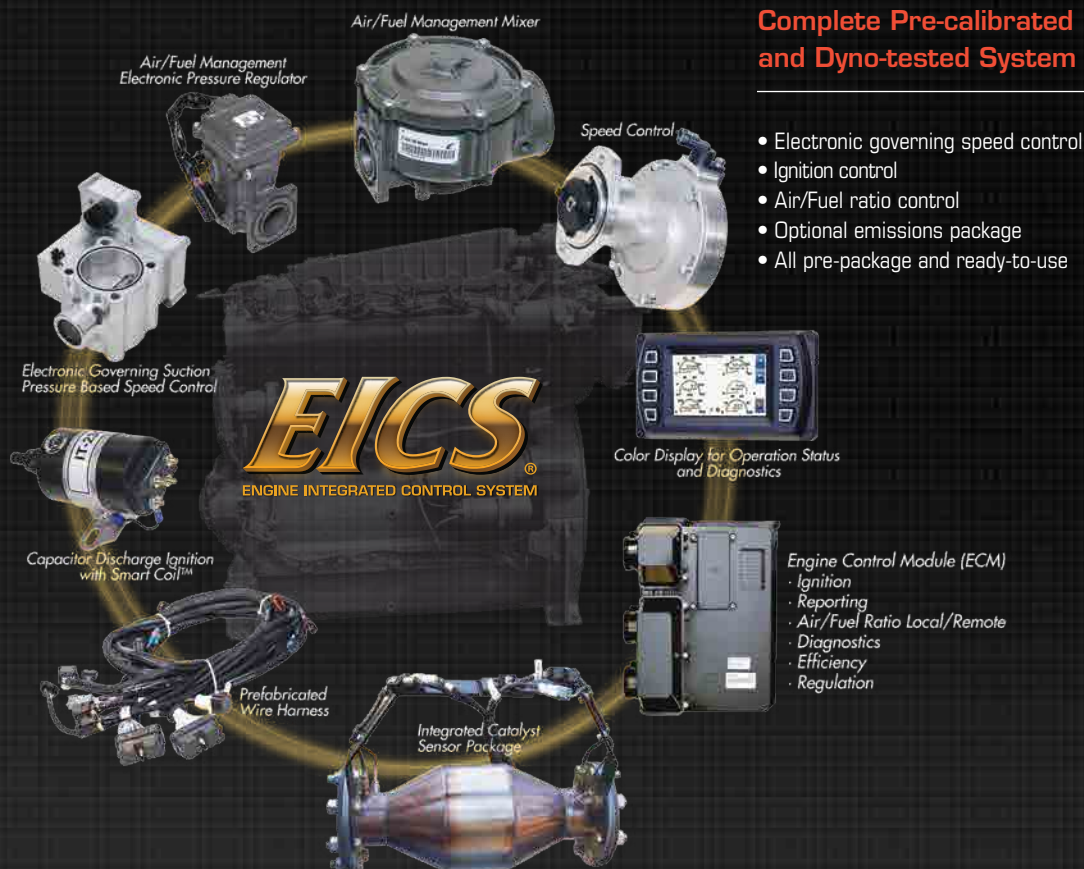


## Engine Throttle Controller

- Automatically adjusts engine throttle to meet speed, load, fluid level
- Universal 12 VDC or 24 VDC power supply
- Fully adjustable travel, from 30 mm up to 57 mm
- 25 inch pound torque

# Engine Integrated Control System

The pre-packaged system breathes new life into stationary engines such as increased performance, fuel economy, emissions control and diagnostics. This turnkey engine integration package quickly and easily brings old engines up-to-speed saving the time and hassle associated with sourcing and installing separate components.



## Air/Fuel Ratio & Ignition Control

### AFR Series Air/Fuel Ratio Controllers

- Simplest Air/Fuel Ratio controllers for lean or rich burn
- Models available for 1, 9, and 64 air/fuel targets for load levels
- Configuration via menu driven HMI/display, no laptop required (applicable to 1 or 9 target models only)
- Feature pre and post catalyst oxygen sensor feedback
- Streamlined menu-driven navigation, on-screen help and set-up tips



### IntelliSpark® 16D Ignition Controller

- Crankshaft-referenced microprocessor-based system
- True primary and secondary diagnostics
- 5 timing reference options, including camless operation
- 16-bit microprocessor controller
- Field-programmable front panel full-color display





# Gages and Monitoring Instruments

Since Murphy introduced the Swichgage® in 1939, the product line has expanded to include many gages for monitoring of engine critical applications. All Murphy instruments were designed to provide highly accurate, long-lasting monitoring in even the harshest environments.



## PowerView® CAN-Direct Instruments

- Displays J1939 parameters: pressure, temperature, speed, voltage, fuel level, load
- CAN-Direct gage without the need for a driving device
- 270° sweep readout with adjustable LED backlighting
- Wide selection of lens and bezel styles and colors



## PowerView® Analog Instruments

- Displays SAE J1939 parameters using Stepper Motor Technology
- Microprocessor driven for high accuracy
- Wide selection of lens and bezel styles and colors
- Available for: pressure, temperature, time, speed, volts, fuel
- Driven by PV101 and PV380 displays



## Electric Gage and Swichgage® Instruments

- EG21 analog display electric gage features air core movement
- Rugged design exceeds SAE J1810 standards
- EGS21 Swichgage® models feature adjustable set point and solid-state switch output



## AT and ATH Tach and Tach/Hourmeters

- Reads from a magnetic sensor (pickup) signal, from battery charging alternator signal or ignition speed signal
- High visibility analog readout 3.5" display (270° sweep)
- Hourmeter models feature LCD hourmeter
- For 12/24 VDC power supply
- Features through-dial lighting



## Mechanical Gage & Swichgage® Instruments

- Combination indicating gage and adjustable limit switch
- Limit switch can activate alarms and/or shut down equipment
- Available in 2", 2.5", 4.5" dial sizes for Pressure, Temperature, and Level Swichgage® and Gage (no limit switch) instruments
- Standard normally open switch outputs
- Hazardous area certified options available

Selected products covered in this overview comply with one or more of the following requirements. For detailed approval information, see the complete product specifications:



# Process Monitoring Instruments

## L150, EL150K1 Series Fluid Level Controls

- Level switch and indicator for oil, coolant or diesel fuel
- Low level contacts for warning and shutdown
- Grounding contact or SPDT switch available
- Float adjustment for testing contact and alarm



## LM Series Engine Oil Level Maintainers

- Automatic lube oil level maintainers correct engine oil level
- LM500 for mid to small engine; LM300 for large engines
- Oil level indication with large sightglass
- Low level switch with optional warning/shut-down test feature
- Positive sealing Thumb-Valve™ operation
- Hazardous area certified options available



## L129 Series Low Oil Level Indicators

- Lube oil level indicator with large sightglass
- Adjustable high and low level contacts can signal a warning and activate engine shutdown
- Grounded or insulated contact options
- Engine-mounted design



## MLS Series Scrubber Liquid Level Switches

- Designed for harsh, gas compressor scrubber applications
- 304 stainless steel float, ANSI 12.27.01 single seal
- Rated up to 2000 psi (13.8 MPa) (138 bar) working pressure
- Dependable design with fewer moving parts



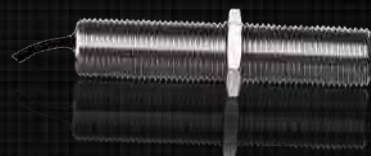
## ES Series Resistive Senders

- For use with: EG21 – EGS21 Gages – MeCAN™ FuelCAN™ – SenderCAN® – Displays – Controllers
- Senders available for oil pressure, coolant temperature, fuel level



## Magnetic Sensors (Magnetic Pick Up)

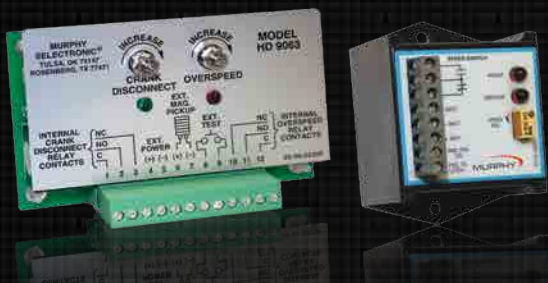
- MP sensors read pulses from the engine flywheel rim gear teeth
- Provide RPM data to tachometers and electronic speed switches
- 3" or 4-1/2" lengths, 5/8-18 UNF or 3/4-16 UNF thread sizes





# Process Monitoring Instruments

Monitoring your equipment is critical to keeping optimum performance. Our complete line of process monitoring instruments can help you protect the life of your engine by providing easy indication of critical engine functions.



## Electronic Speed Switches

- Models SS300, HD9063, OS77D
- Magnetic sensor (pickup) or charging alternator driven
- Models available with one, two or three relay outputs
- For starter release, load control or overspeed shutdown



## VS Series, 20 SS, Vibration/Shock control

- For monitoring equipment vibration and/or shock
- Can be mounted at any angle and includes local or remote resets
- Rugged design available as sealed case or hazardous areas options



## SV Series Diesel Fuel Valves

- Solenoid operated fuel valves
- Versions available for 12 and 24 V
- 3/8BSPT, 1/4 NPT, 14 mm fittings



## DVU Series Scrubber Dump Valves

- For Separators/Scrubbers to 2000 psi
- Hex union allows plug-and-seat replacement without piping removal
- Operates on 30-70 psi control pressure



## M50 Series Fuel Shutoff Valves

- Fuel shut-off valve with instantaneous response to shut-off signal
- Models available for natural gas
- Positive valve closure features open valve indicator
- Vents trapped gases after shutdown
- Manual close valve feature



# Process Monitoring Instruments

## PXT-K Series Pressure Transmitters

- 4–20 mA output signal, features high accuracy and stability
- Precision etched silicon sensor
- Corrosion resistant construction



## Thermocouples Tube Type or Thermowell Cased

- 316 braided armor with Teflon overlay
- K type, 6" and 10" long 1/4" insertion probes
- Can be bent anywhere along its length to a 90° angle
- Tip sensitive to minimize fluctuations from ambient temperatures
- J or K Types thermocouple/thermowell assemblies also available



## RTD and RTDT Transmitter Assemblies

- RTD and RTDT assemblies with 316L stainless steel thermowell
- 100 ohm platinum element, 3-wire RTD; -2 or -3 wire leads RTDT
- Loop powered transmitters, linearized 4-20 mA DC outputs
- Models available in 2.5", 4.5" or 7.5" insertion lengths



## Direct-Mounted Fault Switches

- For all applications, SPDT switch activates alarms, lights, shutdown
- PSB direct-mount switch for critical pressure points
- TSB direct-mount switch for temperature sensing
- Steel housing and factory preset to your specifications



## Exhaust Pyrometers for Diesel Engines Discharge Temperature Switchgag® SDB Series

- Exhaust pyrometers monitor excessive exhaust temperatures
- 10705146 pyrometer with dual scales (2-temperature channels)  
10705147 pyrometer with single scale (1-temperature channel)
- SDB Series direct-mount discharge temperature Switchgag® for gas compressor, cylinder discharge temperatures.
- SDB Series features an adjustable temperature limit switch knob
- Ranges available from 100° up to 700°C



## Connections and Fittings/Check & Relief Valves

- Deluxe oil line, thread adaptors, hose fittings, check valves available for diesel fuel



# Control Panels & Systems

We offer a complete selection of custom and standard panels to fit your unique application requirements. Our staff of dedicated panel engineers design and build customized panel solutions complete with custom programming and configuration perfectly suited for your application. Backed by many years of expertise, our standard panel offerings are available for both electronic and mechanical engines.



## MurphyLink® ML Series Engine Control Panels

- Panel systems for electronically controlled engines
- Designed based on standard or customized Murphy controllers and instruments
- Standard panels for many modern CAN-based engines
- Designed for pump control and power units
- Standard wiring harnesses available for most manufacturers' ECUs
- Deutsch connectors for easy installation
- Controllers are available for optional engine automation

**Murphy Industrial Harnesses (MIH) make panel installation quick, easy and simple. See bulletin 1211030 for full details.**



## MLP Series Local / MRP Series Remote Commercial Marine Control Panels

- Panel systems for mechanically controlled engines
- Standard panels with remote and local monitoring stations
- Both panel series offer multiple visual and audible alarm points
- Panels monitor essential engine parameters
- Single and dual pyrometer options available



## WD Series Panels for Mechanical Engines

- Panels for mobile and stationary engines and pumps
- Manual or auto start/stop with start override option
- Switchgag® and indication for oil pressure, coolant temperature and option for pump pressure
- Automatic fault warning light and delayed shutdown
- CRS construction and powder-coated panels for prolonged field life
- Models feature enclosed or open-frame options



# Annunciator Panels & Systems

We offer a complete line of fully configurable fault annunciator and shut-down panels. TTD panel systems are designed to protect your engine, compressor and associated equipment. They are easy to operate and offer a simple interface. Its controller display head is common to all configurations.

## Basic Annunciation/Shutdown Panel Featuring The TTD™ Fault Annunciator

- Features the TTD configurable solid-state fault annunciator
- Accepts 48 inputs configurable for N.O. or N.C. sensors
- The 48 inputs can be configured for alarm or shutdown only
- Selectable Modbus RTU slave RS232/RS485 serial communications
- Retains the last 10 shutdowns and the last 4 alarms associated with run hours
- Selectable baud rates
- Pre/Post lube timed function optional
- Tachometer with overspeed/underspeed set point and running hours option
- Lubricator no-flow detection for up to 4 proximity switches



## The One Single-Source Package Vapor Recovery Control System

Specifically designed for tank battery vapor recovery compressors, the VRU Pro controller offers comprehensive signal monitoring and control with manual/automatic start and speed/recycle/capacity control through three-way PID monitoring of suction pressure, discharge pressure and drive load. Additional features include:

- Fit for purpose, multifunction I/O including analog I/O and thermocouple inputs
- Engine / motor monitoring and protection features selectable
- CAN J1939 engine communications
- 12/24 VDC and AC powered versions (AC versions require additional hardware)
- Setup configurable through keypad
- Serial communications (RS485)



Selected products covered in this overview comply with one or more of the following requirements. For detailed approval information, see the complete product specifications:



# Control Panels & Systems

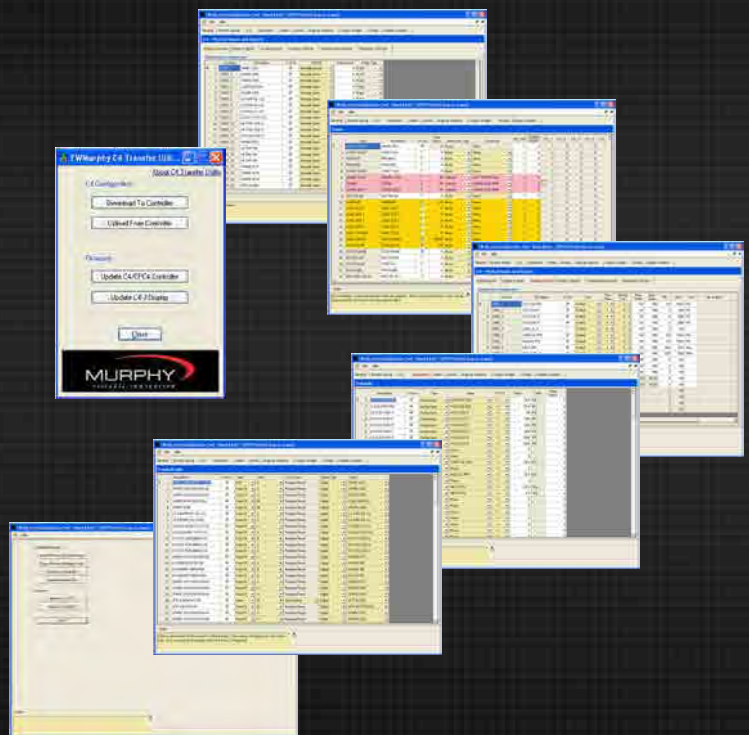
The Murphy full line of control panels covers a wide range of applications – from engines and motors to pumps and compressors. Our panels have a standard common platform, giving you the ability to choose the instrumentation, layout and software to create a one-of-a-kind solution for your application. Experience reliable control backed by full customer service.



## CENTURION™

### Basic Shutdown/Autostart Panel Featuring the Centurion™ Controller

- Configurable panel system for equipment monitoring and protection with available autostart and process control
- A hybrid of annunciator and configurable controller
- Digital monitoring system, alarm and shut-down features with autostart option
- Sequential state logic control with up to 6 closed loop controllers
- Software configuration tool option





## Full-Featured Control Panel

The Centurion PLUS™ control panel is the latest evolution in Murphy's controller technology. This full-featured control panel provides the stability of proven technology combined with the latest HMI touch screen for greater expandability and user interface. The Centurion PLUS panel features custom application programming, full-time data logging and expandable communications capabilities.

# CENTURION™ PLUS

### Top-of-the-line Control Panel Featuring Centurion PLUS™ Programmable Controller

- Custom programmed to meet exact requirements
- Complex valve logic and sequencing support
- Real time data via two RS485/RS232 ports
- Expandable I/O up to three expansion modules
- Capable of complex calculations, including rod load and temperature deviation



Selected products covered in this overview comply with one or more of the following requirements. For detailed approval information, see the complete product specifications:



# Compressor Controls

Whether you are in need of basic shutdown, temperature scanning or full-featured control, we have a full line of controllers designed to provide the right balance of control features for a variety of applications. Determine the level of control needed for your application, and we will match you with a controller with just the right mix of features.



## TTD™ Configurable Fault Annunciators

- Digital annunciators with shut-down capabilities
- TTD models can monitor up to 48 user-configurable sensor inputs
- Additional options available, such as tachometer, pre/post lube and lube no-flow detection



## TDXM Temperature Scanner

- Scans up to 24 channels
- Three adjustable trip points per channel
- Accepts any combination of J- or K- type ungrounded thermocouples
- Exhaust and bearing temperature grouping capabilities



## SHD30 Tach/Hourmeter and Overspeed

- Digital tachometer/hourmeter with overspeed trip point
- Normally open and normally closed overspeed alarm and shutdown
- Approved for Class I, Division 2 Groups C & D hazardous areas

Selected products covered in this overview comply with one or more of the following requirements. For detailed approval information, see the complete product specifications:





# Compressor Controls

## CENTURION™

### Centurion™ Controller

- Fully configurable control and monitoring system
- Expandable to meet most 3-stage compressor applications
- No programming experience required – off-the-shelf configuration handles the most commonly used control sequences
- See I/O and communications specs. on chart below



## CENTURION™ PLUS

### Centurion PLUS™ Controller

- Full-featured controller with custom application programming
- HMI full-color touchscreen, 6 or 10 inch display
- Custom application programming
- Full-time data logging
- Expandable communication capabilities





by **ENOVATION** CONTROLS

ENOVATION CONTROLS CORPORATE HEADQUARTERS  
5311 S 122ND EAST AVENUE  
TULSA, OK 74146

ENOVATION CONTROLS - SAN ANTONIO OFFICE  
5757 FARINON DRIVE  
SAN ANTONIO, TX 78249

ENOVATION CONTROLS - HOUSTON OFFICE  
105 RANDON DYER RD  
ROSENBERG, TX 77471

ENOVATION CONTROLS LTD. - UNITED KINGDOM  
CHURCH ROAD LAVERSTOCK  
SALISBURY SP1 1QZ UK

MURPHY ECONTROLS TECHNOLOGIES (HANGZHOU) CO, LTD.  
77 23RD STREET  
HANGZHOU ECONOMIC & TECHNOLOGICAL DEVELOPMENT AREA  
HANGZHOU, ZHEJIANG 310018 CHINA

#### DOMESTIC SALES & SUPPORT

ECONTROLS PRODUCTS  
PHONE: 210 495 9772  
FAX: 210 495 9791  
EMAIL: INFO@ENOVATIONCONTROLS.COM  
WWW.ECONTROLS.COM

MURPHY PRODUCTS  
PHONE: 918 317 4100  
FAX: 918 317 4266  
EMAIL: SALES@ENOVATIONCONTROLS.COM  
WWW.FWMURPHY.COM

MURPHY CONTROL SYSTEMS & SERVICES  
PHONE: 281 633 4500  
FAX: 281 633 4588  
EMAIL: CSS-SOLUTIONS@ENOVATIONCONTROLS.COM

MURPHY INDUSTRIAL PANEL DIVISION  
PHONE: 918 317 4100  
FAX: 918 317 4124  
EMAIL: IPDSALES@ENOVATIONCONTROLS.COM

In order to bring you the highest quality, full-featured products, we reserve the right to change our specifications and designs at any time.

Specifications and performance data subject to change without notice. Certified specifications and performance data available upon request.

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#### INTERNATIONAL SALES & SUPPORT

##### UNITED KINGDOM

PHONE: +44 1722 410055  
FAX: +44 1722 410088  
EMAIL: SALES@ENOVATIONCONTROLS.EU  
WWW.FWMURPHY.EU

##### CHINA

PHONE: +86 571 8788 6060  
FAX: +86 5711 8684 8878  
EMAIL: APSALES@ENOVATIONCONTROLS.COM

##### LATIN AMERICA & CARIBBEAN

PHONE: 918 317 2500  
EMAIL: LASALES@ENOVATIONCONTROLS.COM

##### SOUTH KOREA

PHONE: +82 70 7951 4100  
EMAIL: SKOREASALES@ENOVATIONCONTROLS.COM

##### INDIA

PHONE: +91 91581 37633  
EMAIL: INDIASALES@ENOVATIONCONTROLS.COM



FM 28221 (Tulsa, OK - USA)  
FM 620667 (San Antonio, TX - USA)  
FM 28221 (Rosenberg, TX - USA)  
FM 29422 (UK)



FM 523851 (China) TS 589322 (China)

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