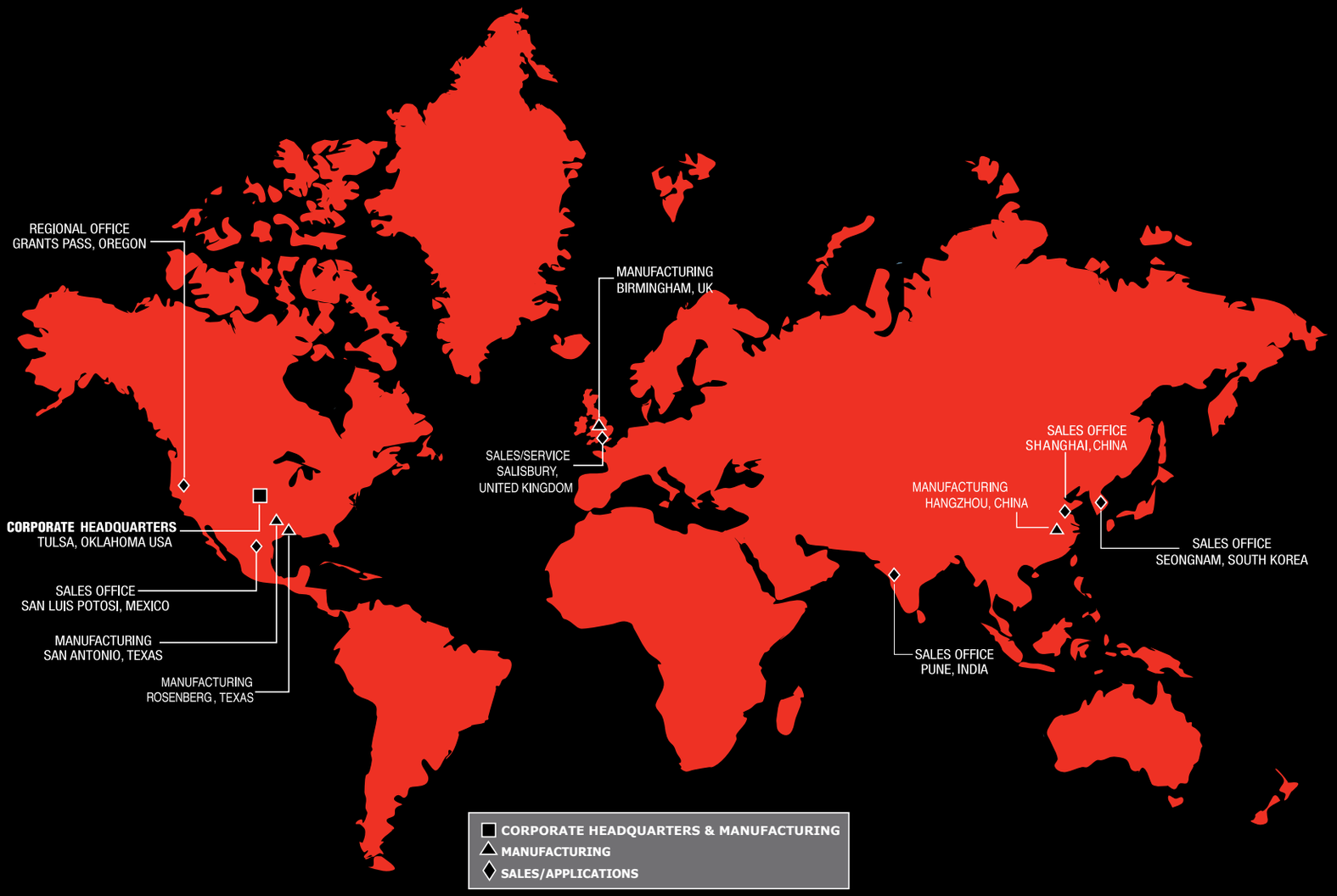
MURPHY®

by ENOVATION CONTROLS

POWER CONTROLS

Complete Solutions to Meet Your Needs.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MURPHY
EControls
by ENOVATION CONTROLS

WHO WE ARE

More than 70 years ago, our products started with a simple idea — identify an unmet need in the industry and provide a reliable solution. Since then our product offering has 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, battery chargers, expandable I/O modules and a whole array of electronic displays. We offer full solutions for challenging projects.

We Are Innovators.

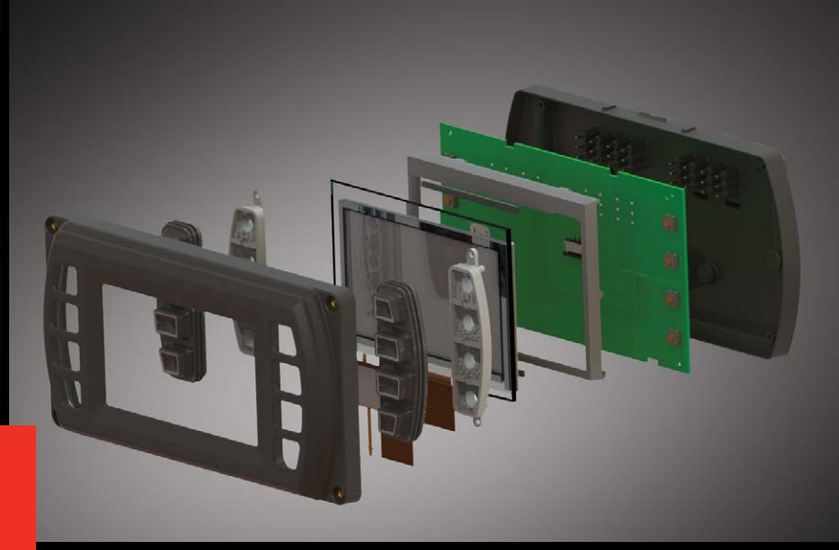
We led the way in helping to meet the latest engine environmental emissions regulations with instrumentation that eases the transition to electronic engines. We continue to explore new technologies and develop new products for emerging market needs. Murphy's innovations don't just apply to products. We have integrated a standard operating system which utilizes lean manufacturing and Six Sigma for maximum productivity.

We Are Customer Driven.

We pride ourselves on customer satisfaction and service. We work closely with our customers to design and deliver innovative and reliable products for specific applications. Our goal is to not only meet, but to exceed customer expectations in order to become your preferred partner.

We Are Global.

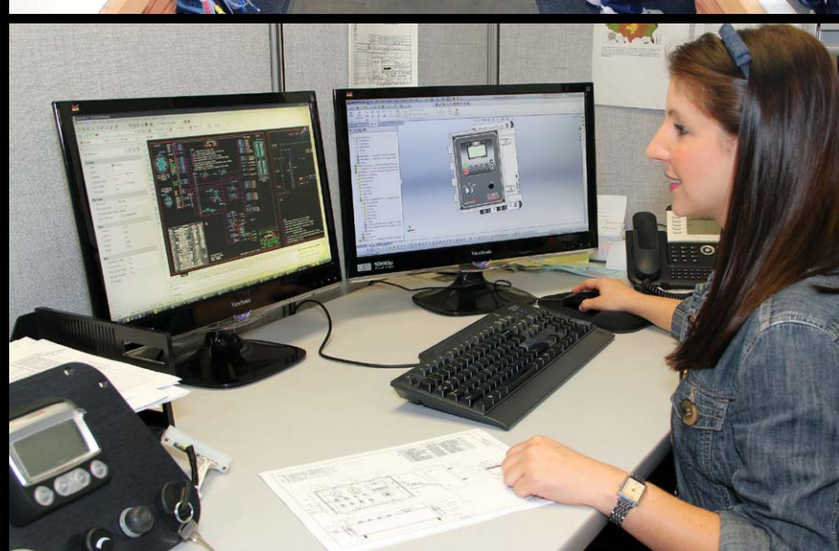
We are where our customers are. North American operations are centrally located in Tulsa, Oklahoma, with additional offices in San Antonio and Rosenberg, Texas. Our international manufacturing operations are located in Europe and China, with sales offices in India, South Korea and Latin America. Customer support is achieved through our extensive distributor and dealer networks available throughout the world.



State-of-the-art manufacturing capabilities – including Surface Mount Technology (SMT), X-Ray inspection and LCD bonding

Multipoint functional testing delivers higher quality products for our customers

ISO 9001:2008 certified manufacturer of engine instrumentation and control solutions



MORE SOLUTIONS

We offer a wide range of advanced manufacturing and engineering capabilities – including mechanical and electronic hardware design, software design, product testing, in-house LCD bonding, panel and harness engineering and more. Let us provide a complete turnkey solution to meet your needs.

In-House Engineering

Whether it's software or hardware development, our dedicated engineering team has the expertise to complete your project. We offer engineering and design support to provide the right solution for your industrial application. Our engineers are skilled in electronic and mechanical hardware design, embedded software, wire harness design, engine calibration and emissions testing.

In-House Manufacturing

We take pride in our world-class manufacturing which allows us to perform specialized processes for more reliable products. Our facilities feature focused in-house cells dedicated to specific product production, such as SMT, Panel, Wire and Sheet metal. As we expand our electronic product offerings, we have created future cells designated only for production of our electronic displays and operated by specially trained personnel. LCD bonding is performed in-house and allows for complete bonding of the LCD to the glass in order to provide long-term durability without yellowing, delamination or degradation.

Custom Panel Solutions

Our Industrial Panel Division provides quick delivery of standard or custom panels in a single one-stop solution for all industrial markets. The division offers a project-focused organization backed by vertically integrated manufacturing capabilities. Our application and panel design engineers work side-by-side with manufacturing to keep your project running smoothly. Our panel division offers customized instrumentation panels and packages, standard instrumentation panels and wire harnesses.

Quality and Technical Support

We are constantly looking for ways to improve communication between the integral parts of the manufacturing process to provide better teamwork and faster response to changes. That's why Murphy implemented a Global Operating System focused around Lean Six Sigma to identify and remove variables in our manufacturing and business processes. By pinpointing areas for improvement, we are able to provide our customers with faster delivery time and higher quality products. To better serve our customers, we also offer 24-hour customer service support and an in-house technical service department to answer all your questions.

Mobile Equipment Instrumentation

I/O Expansion Module

PowerCore™ Intelligent Xpansion Module

SAE J1939 CAN PowerView Gages

PV750 S Full-

For information about these Murphy products go to pages 14 to 23, also visit www.fwmurphy.com

MORE INTEGRATION

eries PowerView™
Color Display

PV450 Series PowerView™
Full-Color Display

PV300 Series PowerView™
Monochrome Display

I/O Module

MURPHY®
by ENOVATION CONTROLS

Engine Power Unit Instrumentation

MurphyLink™ Engine Control Panel

MurphyLink™ Enclosed Engine Control Panel

MPC-20 Controller

For information about these Murphy products go to pages 14 to 23, also visit www.fwmurphy.com

MORE INTEGRATION

LM500 Auto-Lube
Level Maintainer

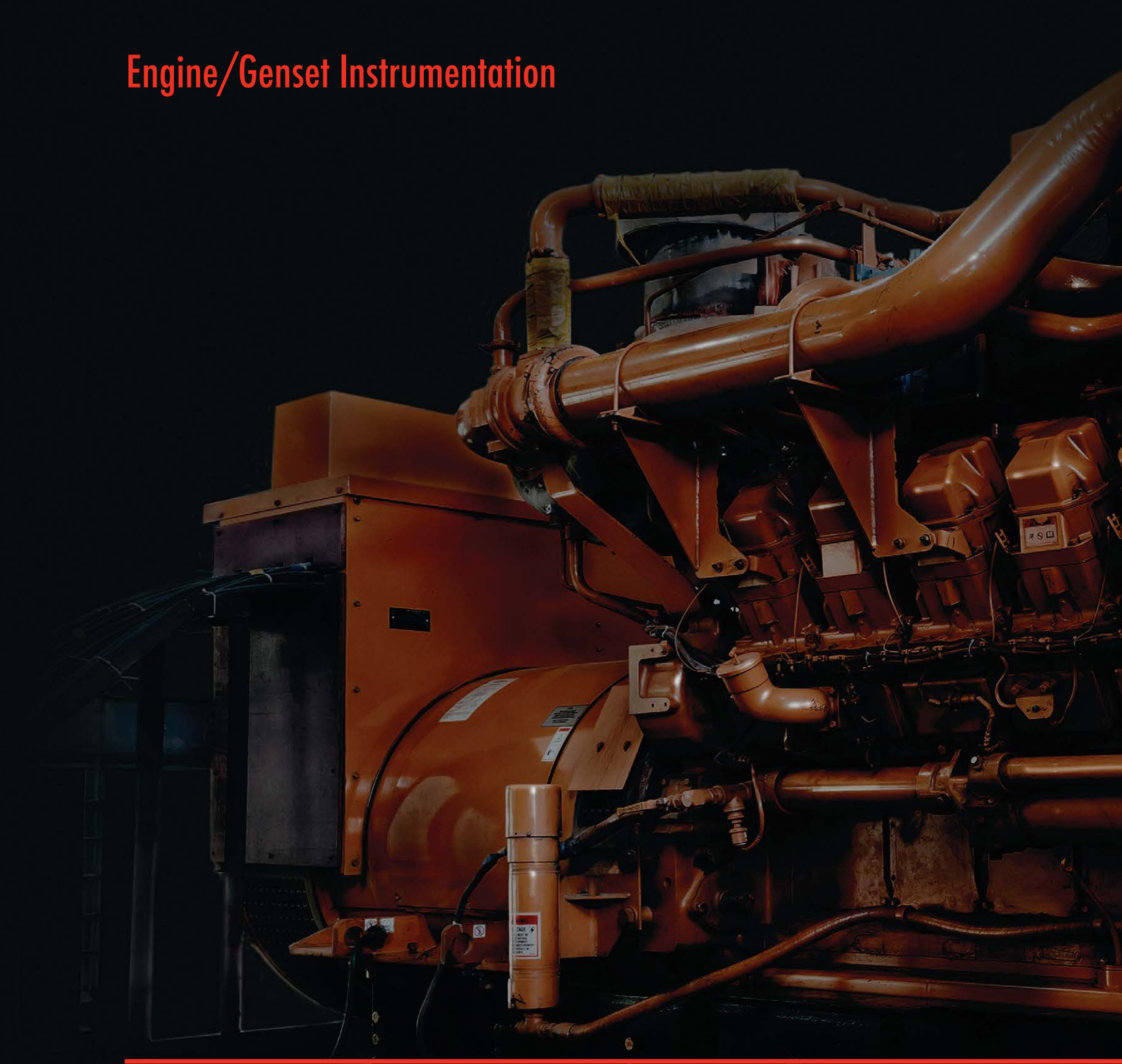
L129 Swichgage®
Fluid Level Switch

EL150 Swichgage®
Coolant Level Switch

Wire Harness

MURPHY®
by ENOVATION CONTROLS

Engine/Genset Instrumentation



Custom Solutions

EMS Series Genset Controller

MGC Series
Genset Control Panel

For information about these Murphy products go to pages 14 to 23, also visit www.fwmurphy.com

MORE INTEGRATION

Battery Chargers

Cascade Genset Controller

KeyStart Auto-Start Genset Controls

MURPHY by ENOVATION CONTROLS

Engine/Pump Instrumentation

MurphyLink™ Engine Control Panel

MurphyLink™ Enclosed Engine Control Panel

MPC-20 Controller

For information about these Murphy products go to pages 14 to 23, also visit www.fwmurphy.com

MORE INTEGRATION

LM500 Auto-Lube
Level Maintainer

L129 Swichgage®
Fluid Level Switch

EL150 Swichgage®
Coolant Level Switch

Wire Harness

MURPHY®
by ENOVATION CONTROLS

PowerView 780 • PowerView 450

PowerView 350/380 • PowerView 25 • PowerView 101

MORE POSSIBILITIES

Modern Electronic Displays

PowerView™ 780

A fully modular CAN display that integrates electronic engine, transmission and equipment information into a 7-inch, full WVGA flat screen. Customize the information for your application using our PowerVision Configuration Studio®.

PowerView 450

A smaller modular CAN display with a 4.3-inch screen. The PV450 has similar features and performance as our larger configurable displays but with a smaller footprint that uses less space.

PowerView 350/380

A configurable, multifunction display with a 3.8-inch screen designed for complete panel solutions. The PV380 monitors multiple engine parameters and is capable of displaying engine diagnostics as well as basic alarm/shutdown with integrated throttle control.

HelmView™ Displays

HelmView displays are variations of the PowerView display line and come preloaded with standard marine software configurations.

PowerView 101

A multifunction J1939 display that monitors multiple parameters and service codes on a single compact screen. The PV101 display has become an industry standard for electronic engines.

PowerView 25

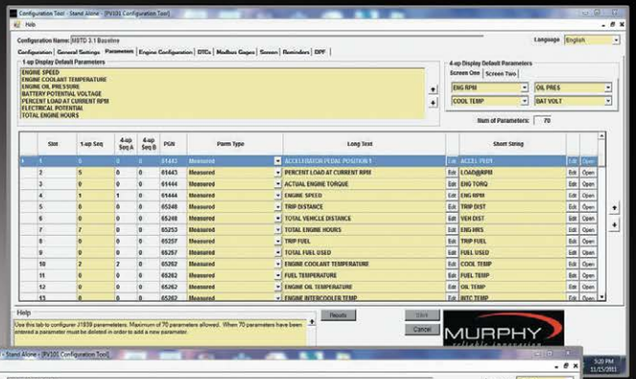
Basic J1939 electronic device that monitors and displays up to 20 primary engine parameters. The PV25 is an economical diagnostic display with Tier 4 emissions capability for lower horsepower electronic engines.

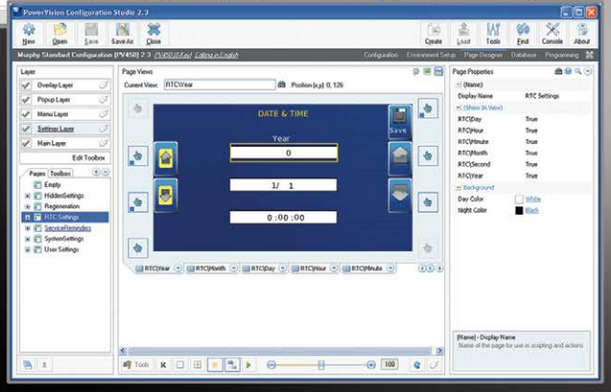
Tier 4 ready Stage IIIB/IV

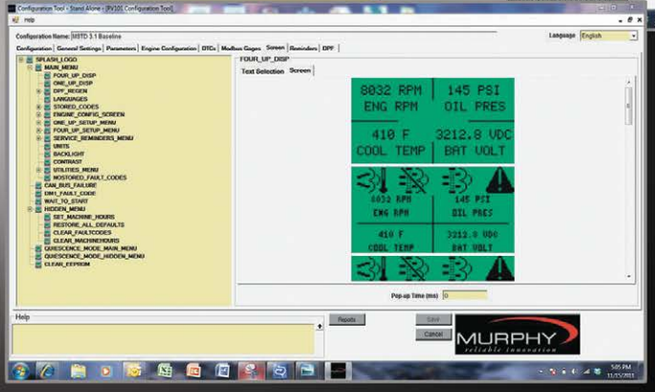
MURPHY® by ENOVATION CONTROLS

Power Distribution Module • SenderCAN • XM500

PowerVision Configuration Studio • PowerView 101 Configuration Tool







MORE POSSIBILITIES

We continue to provide traditional products such as gages, switches, controllers and panels for mechanical engines. Our latest products have been designed for the future of engine technology, including fully configurable electronic displays which offer a clear and concise look into modern electronic engines while allowing for ease of integration into any application.

Expandable I/O Modules

IX3212-24

Expand CAN bus control networks by replacing existing relay and fuse boxes with the Intelligent XPansion's more reliable solid-state switches that directly drive work lights, wiper motors, cooling fans, directional DC motors and other high-current loads. This power distribution module offers dependability while reducing the cost of wire harnesses for construction, heavy trucking and specialty vehicles.

XM500

The XM500 I/O module picks up additional digital or analog parameters not supported by the existing Engine Control Unit (ECU) and brings them into the display via J1939. When coupled with PowerView displays, the XM500 provides manufacturers with more advanced alarm and shutdown options for equipment.

SenderCAN™

The SenderCAN I/O module integrates analog and digital measurement, control and indicating devices into modern ECU-based engines and systems. The SenderCAN module has up to four inputs and two outputs which can be configured to meet OEM or application-specific measurement needs.

Software Configuration Tools

PowerVision™ is a powerful software development tool that provides OEMs with complete customization. Personalize the look and feel of equipment screens, customize parameters, edit troubleshooting data and upload company branding on the PowerView™ 780, PowerView 450, PowerView 300 and HelmView marine diplays.

PowerView 101 Software Configuration Tool

Configure custom parameters, create proprietary DTC warnings and shutdowns, designate screen layout and more on the PowerView 101 display.

XM500 Software Configuration Tool

Configure the software for the setup of incoming and outgoing parameters between the XM500 and the SAE J1939 CAN bus.

Cascade Software Configuration Tool

Customize parameters for the Cascade auto-start controller.

Sentinel Software Configuration Tool

Configure your battery charger quickly and easily for your specific application and battery type.

Tier 4 ready Stage IIIB/IV

MURPHY® by ENOVATION CONTROLS

PowerView Analog Gages • Electric Gages • PowerView CAN Gages

Battery Chargers

Oil Level Switches • Coolant & Diesel Fuel Level • Lube Level Mainteiners

Tachometers • Timers • Overspeed Sensors

MORE POSSIBILITIES

We have a long history with engine instrumentation, so it's no surprise that we offer the broadest range of durable and dependable products for industrial applications. From modern gages for electronic engines to traditional devices for mechanical engines, Murphy products offer the right solution for your application.

Gages - Analog, Electric and CAN

PowerView™ Analog Gages

Our PVA gages communicate directly with PowerView displays to provide additional engine information, such as oil pressure/temperature, coolant temperature, transmission oil pressure/temperature and more. The gages also feature smooth stepper motor operation as well as a variety of lens and bezel options.

PowerView CAN Gages

Our PVCAN gages are intelligent gages designed to display information broadcast over SAE J1939 communications. The gages communicate directly to the J1939 CAN bus without the need of another device to drive them. The gages also feature smooth stepper motor operation as well as a variety of lens and bezel options.

Electric Gages

The Electric Gage and Swichgage® instruments provide proven technology, quality and reliability. Our EG gages combine the ease of electric gage installation and the reliable switching of Murphy's famous Swichgage instruments. The Electric Swichgage offers visual indication for monitoring and provides shutdown for many engine functions, including pressure, temperature and fuel level.

Tachometers, Level Indication and Battery Chargers

Tachometers, Time & Overspeed

Our tachometers and overspeed devices indicate engine RPM and running time, as well as provide alarm and shutdown on overspeed and starter cranking disconnect. Time switches automatically start or stop an engine after a fixed amount of time for time-critical applications.

Battery Chargers

The Sentinel Series battery chargers provide economical, advanced multistage charging and control functions to ensure optimum performance. The Sentinel 150 and 300P are available for both 12- and 24-volt systems and can be configured using a PC-configuration tool.

Level Devices

Level devices help protect your industrial engine applications with visual indication and monitoring of low/high levels of oil, coolant and diesel fuel. By providing an easy visual indication, operators can check engine fluid levels without shutting down the engine.

PowerCore MPC-20

Key Start • Cascade

EMS PRO • EMS-GC10

MORE POSSIBILITIES

Every application is unique, which is why we provide an array of controller options suitable for a broad range of industrial applications. Pumps, grinders, power units and generators are just a few of the applications that utilize Murphy controllers. Find the right controller with the right mix of features for your particular application below.

Controllers

MPC-20

Developed to meet the needs of manual or automatic control, the MPC-20 can be used on mechanically or electronically governed engines supporting SAE J1939 CAN communications.

Cascade

The Cascade auto-start engine controller can fit any engine driven application requiring a simple and robust automatic start and stop sequence. The Cascade can be used on both mechanical and electronic engines.

Key Start

Our familly of compact keyswitch modules provide manual or automatic start/stop control and fault indication/shutdown.

Tier 4 ready Stage IIIB/IV

EMS PRO/EMS PRO Lite

The EMS PRO is a multifeature electronic monitoring system that combines flexible auto start/stop options with powerful throttling capabilities. Auto start/stop options include single contact, floats, momentary, transducer and clock.

EMS PRO Lite is a compact controller version with similar features to the EMS PRO including pressure, level and float start/stop options for dewatering and irrigation applications.

EMS-GC10

The EMS-GC10 genset controller monitors and controls both the engine and generator. It features a rugged, versatile design and is compatible with mechanical and electronic J1939 engines. The EMS-GC10 supports Automatic Mains Failure (AMF) and generator breaker control, and is available as a single controller or in an integrated genset panel solution.

MurphyLink® Panels • Industrial Wire Harnesses

MGC Genset Control Panels • Marine Panels

MORE POSSIBILITIES

Whether your application requires basic auto-start or more advanced control options, Murphy's line of panels perform a full range of functions to meet your application needs. Looking for a custom panel? Our Industrial Panel Division's application and panel design engineers can help you create a panel to your unique specifications.

Complete Panel Solutions

MurphyLink® Series Panels

The ML Series panels are designed for modern electronic engines and equipment applications using the SAE J1939 CAN network. The standard panels come equipped with our PowerView 101 display as well as a key switch and increment/decrement throttle and gage options. The panels are available in various models and feature offerings to provide the right level of support for your particular application.

Murphy Generator Control Panel

Our MGC panels feature our reliable controllers and are offered in a number of variations to meet your exact generator set application. The MGC control panels are fully compatible with mechanical and electronic engines.

Murphy Industrial Harnesses

With Murphy panel wire harnesses, installation couldn't be simpler. Our standard harnesses simplify installation and save hours of labor costs.

Local and Remote Marine Panels

Maximize the efficiency of your mechanical engine with Murphy's panel solutions designed specifically for commercial marine applications. Our local and remote panel solutions provide the durability, reliability and functionality essential for your engine. The MLP/MRP 300 Series panels provide advanced alarm and warning indication and multiple gages for monitoring of essential engine components. The MLP/MRP 100 Series panels feature a more condensed feature set for monitoring and alarm of primary engine variables critical for marine applications.

Tier 4 ready Stage IIIB/IV

MURPHY®

by ENOVATION CONTROLS

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