



# Faria Industrial Instruments

With some of the most sophisticated information and instrumentation systems in the industry, and a range of products that are rugged enough to survive on military Humvee and heavy construction equipment, or with innovative styling for your boat or RV, Thomas G. Faria Corporation has the right products to meet future global needs for rugged, reliable, and innovative instrumentation.



### An ISO9001-2008 Registered Company

For more than 50 years Faria has been dedicated to the principle of supplying our customers with the highest quality product at the most competitive prices.

All Faria instruments are performance proven under the most demanding conditions. They are factory installed original equipment with major manufacturers worldwide. You can rely on Faria Instruments for world class quality, dependability and ease of installation.

Our years of manufacturing experience and knowledge of the industries we sell to have taught us to listen to the market place. Our in-house product design and development, component manufacture and instrument assembly allow us to respond quickly to your needs.

The company-wide use of Statistical Process Control (SPC), not only for ourselves but by our vendors as well, allow us to maintain a consistently high standard. In 1998, our efforts were recognized by the world as we became an ISO9001 registered company. We continually reaffirm our commitment to this standard and are now registered as a ISO9001:2008 company.

With the recent purchase of Beede Instruments of Penacook, NH, Faria has expanded our manufacturing capabilities to offer a broader product offering, unsurpassed value and design for all of our markets, including the US Military, industrial, recreational and majority of the world's leading boat manufacturers.

We support our products with a comprehensive Limited Warranty. Should you need them, our dedicated Customer Service Technical Experts are ready to provide installation, troubleshooting and warranty assistance.

Instruments for  
**Automotive**  
**Commercial**  
**Industrial**  
**Performance**  
**Recreational**  
**Marine**  
**Military**



**Rugged • Reliable • Innovative**  
**Gauges**



# Stand Alone J1939 Gauge Sets



Faria offers a complete line of J1939 standard and Stand Alone monitoring solutions for your CAN Bus engines.

With some of the most sophisticated vehicle information and instrumentation systems in the industry, Faria Corporation has the right products to meet future global needs for rugged, reliable and innovative instrumentation with Engineered Excellence™.

- J1939 CAN Bus Instruments
- **Stand Alone technology** - Each instrument receives information directly from the J1939 Bus
- Can be connected in standard J1939 harness configurations
- Available in a wide variety of styles.



## Military grade

- J1939 CAN Bus Instruments
- Stand alone technology - Each instrument receives information directly from the J1939 Bus
- Available in a wide variety of styles
- Designed and manufactured to MIL-STD-1275, MIL-STD-465, MIL-STD-464, MIL-STD-810 and SAE J113-13 specifications
- Multiple Analog and Digital Inputs to reduce system costs
- Manufactured in Uncasville, CT USA
- Wide variety of instruments including 3-1 and 4-1 multi-function gauges, 4-inch and 5-inch Speedometers and Tachometers and a complete suite of 2-inch discreet instruments i.e, Fuel Level, Temperature, Volts and Oil Level



# MG1000

The MG1000 is the stepping stone of digital instrumentation. This innovative digital gauge system requires no LCD's, no system initialization, no menu setups and no user manual interaction for use - ever! Just install and go!

The MG1000 gauge system displays engine ECU data and alarms. Installation is simplified by reducing wiring and setup time. Our instruments communicate with the engine ECU for the most accurate information and error codes.

This system is the lowest cost, most user-friendly digital product in the market for customers installing digital technology. Multiple analog inputs and warning lights reduce cost while still providing the customer with everything they need.

Upgrade to the MG3000 system for an even wider variety of options and features. The Faria product suite offers a multitude of accessory gauges available to connect to the MG1000 system including a 2" fuel flow gauge to show fuel economy. The combinations are limitless!!

Specifically designed to work with the leading engine manufacturers.

Compatible with MG3000 systems.



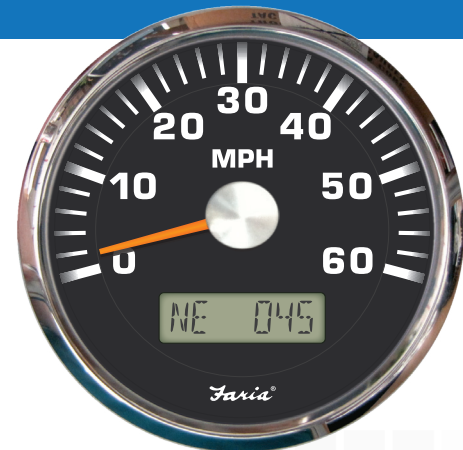
**SAE J1939**

## Features and Benefits

- Can be directly connected to J1939 CAN Bus systems
- "Daisy Chain" connections, add additional features, connect the MG3000 with the same harness
- NMEA0183 input for GPS Speed
- A single Tachometer can monitor up to 4 analog signals
- Utilizes both analog and digital inputs to reduce system cost
- Stepper motor gauges (for greater accuracy and durability)
- Deutsch and Packard water tight connectors
- LED lighting is standard
- Custom cosmetic options upon request
- Multiple 5"/4"/2" discrete instruments are available

## GPS Speedometer

- Available in multiple Speed ranges to 80 MPH, 130 KPH, 50 and 70 KNOTS
- Premium LED back-lit dials
- **No external GPS antenna required**
- Available LCD displays Compass Rose heading and Actual heading (COG)
- Ultra fast Satellite acquisition time (TTFF)
  - 1 second from Hot start
- Speed Accuracy of +/- 1 MPH
- Heading Accuracy of +/- 1 Degree
- Digital stepper motor driven pointers
- Deutsch connectors available
- Custom OEM styles and ranges available



The GPS Speedometer is a drop in replacement for your current speedometer to match your existing instrument dash.

GPS information is gathered from an internal GPS antenna. No external antenna required. The Faria GPS Speedometer uses a highly accurate 48 channel GPS receiver. You can be sure that the Faria GPS Speedometer is giving you the most accurate GPS information available on the market today.

Course Over Ground (COG) and actual heading (compass heading over ground) are displayed on the optional digital LCD.

# J1939 Control Panels

The M150L Series Control Panels are a universal platform of products designed to control J1939 electronically governed engines. With a family of panel configurations ranging from panel mount to single gauge to multi-gauge and a NEMA 4X enclosure virtually any installation can be met. If a panel or enclosure is not required the M150L series offers a kit containing all necessary parts that can be mounted in a customer specific panel design.

With a full featured J1939 interface the M150L series panels provide a complete interface for virtually any SAE J1939 data. With standard features such as "TSC1 Throttle Control", "Fuel Level Input", "Engine Oil Pressure" and "Engine Shutdown", the M150L provides the most features in the price range. The gateway interface is available in a 4" or 5" configuration. The M150L15 configuration can be shipped with variety of gauge configurations including; oil pressure, engine temperature, voltage and fuel expansion gauges.

Using the traditional look of a round gauge and the latest microprocessor technology the M150L series products provide the user with a traditional "look and feel" for controlling the latest electronic engines. Incorporating the latest technology allows the M150L products to be fully scalable from a single gauge solution to a full feature multi-gauge applications.



# J-1939 CAN Bus Panels, Clusters and Instruments



New designs, including the popular MG3000 digital LCD display, adds the features of our best selling digital instrument in a single panel cluster design. Customize your panel with warning lights and discrete gauge functions.

# MG3000

The digital gateway systems, available in the Speedometer or Tachometer, is a feature-rich, intuitive engine monitoring solution for the instrument market.

The digital instrumentation communicates directly with the J1939, NMEA2000 and SmartCraft protocols used by the engine ECU providing an important link between the operator and the engine ECU. With just a push of a button the operator can tell the status of the health of the engine including diagnostic messages, fault alerts, and parameter information.

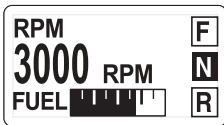
With a full featured J1939 interface the MG3000 series instruments provide a complete interface for virtually any SAE J1939 data.

Connect to analog and digital signals to reduce installed costs significantly.

The MG3000 and other digital instruments from Faria are fully scalable from a single gauge solution to a full feature multi-gauge applications.

## Display

The 128x64 color LCD display, available on the MG3000, provides an easy to read viewing area for system configuration and virtually any data reported by the ECU. The new daylight readable LCD is visible even in direct sunlight.



The display is available with multiple RGB colors.



## Interface

The MG3000 can be configured with or without the three front-mounted push button function selectors. These buttons control the user configurable software and provide access to variable menus and selections.

The MG3000 also allows for remote input device for control of the screens and data viewing.

## Graphics

Faria can help design your own custom graphics. Many dial ranges and scales are available including lens type, bezel color, pointer color and back-lighting.

## Enclosure

The enclosure is molded from Polycarbonate plastic with integrated Deutsch style connector shells (sockets) and is sealed against water intrusion in accordance with Ingress Protection (IP) rating IP67. Wires terminate to a sealed Deutsch weatherproof connector.

The case is available in three water tight configurations from fully waterproof to vented.

Depending on instrument type the case is available in 2, 4 and 5 inch standard hole sizes.

## Accuracy

A digital stepper motor drives the pointers in Faria's digital instruments. The stepper motor increases the accuracy and reliability of the instrument while reducing jittery pointers and providing longer life with a lower power requirement.

## Connectors

A water tight 12-pin and 6-pin connector is used for plug-in installation.

## Maintenance Interval

User configurable maintenance interval. When programmed system provides warning message when maintenance interval has expired.



SAE J1939  
SAE J1708



**A user friendly digital engine monitoring solution.**

## Features and Benefits

- Tier 4 Compatible
- LCD data are available in 5 languages.
- Seasonal and Trip Data.
- Pop-Up screens for quick information display and warnings.
- Alarm codes with suggested actions.
- Data log for fault codes.
- A single Gateway instrument can monitor up to 5 tanks or other analog signals.
- Calibrate Fuel Level and Speed in gauge.
- Initialization mode to assist in gauge set-up.
- Superior Sunlight readable display.
- Units can be displayed in US standard or Metric
- Gear position indicators

## Inputs

- CAN Bus (J1939, NMEA2000 and SmartCraft)
- Direct Pressure (30 PSI -200 kPa) and (145 PSI - 10000kPa)
- Analog Inputs  
5 Analog inputs are available (Customer specific)

## Multiple Discrete Gauges Available



**Customize to fit your needs. Available in 4 and 5 inch. With or without buttons.**

# BEEDE®

## CAN-based instrument system



### The NexSysLink® Advantage

**NexSysLink®**, as its name implies, is the next generation instrumentation system from Beede that connects you with critical operating data transmitted by CAN (Controller Area Network) based apparatus. Suitable for a wide range of industries and applications, these instruments combine the best of analog and digital display technologies that provide the ability to quickly and accurately read industry standard CAN protocols.

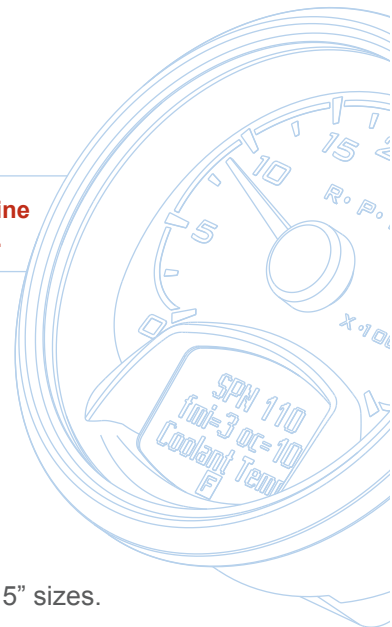


Thoughtful, expert design fills **NexSysLink®** instruments with practical and functional features users expect and appreciate. An intuitive menu driven user interface allows you to quickly configure and use the instruments according to your needs. Three discrete inputs give users the freedom to choose the style and location of interface menu switches (Mode/Enter, Up, Down) to improve the ergonomics of panel designs such as eliminating the awkwardness of reaching through a steering wheel. Configurable alert notification settings are easily tailored to prevent costly breakdowns or repairs of your equipment. Simple system wiring features a rugged, sealed and widely used connector to significantly reduce installation time and costs.

#### In addition to all the above, users will appreciate these rich design features:

- CAN Protocol support for: SAE J1939, NMEA 2000®, SmartCraft®, Indmar (MEFI-4)
- Eliminates the need for a translation “Black Box”
- Large transfective dot matrix LCD display
- Advanced stepper motor technology
- 250° pointer deflection on all instruments for increased resolution
- Master Node Instrument supports up to three discrete analog sender inputs including NMEA 0183 (GPS/Smart Transducer)
- Bright LED illumination
- Visual alert indicators standard on all minor node instruments
- Bold, easy to read graphics
- 50% shallower case design compared to air-core instruments and available in 2, 3 and 5” sizes.
- Single clamp design used to mount all instrument sizes
- Real glass lenses available as domed or flat

**MNI displays engine diagnostic codes.**



Specify **NexSysLink®** instruments for your application’s dash or control panel needs and realize the benefits expertly designed CAN based instrumentation provides.

# NexSysLink® product family & implementation

## Your Application. Your Choice.

NexSysLink® family of instruments give you the option of choosing between a fully integrated daisy chain approach or a group of discretely wired stand-alone instruments. Adding additional instruments, regardless of the approach, always remains an option.

### Fully Integrated

This configuration consists of a Master Node Instrument (MNI) that will read and process CAN data from the apparatus' ECU or discrete analog sender(s). The MNI will display and transmit the processed data to complementary minor or slave node instruments to provide an analog readout of the desired operating data. The instruments are connected via a simple three-wire daisy-chain style harness. This approach significantly reduces dash or control panel wiring yet still offers the ability to easily expand the number of minor gauge nodes to a maximum of sixteen.



#### Master Node Instruments (MNI)

Reads and processes CAN and/or analog sender data then transmits to all slave node instruments using a three-wire daisy-chain harness.

- Available in 3 or 5" sizes.
- LCD displays operating parameters
- Lockable menu options
- Up to three analog input channels

#### Slave Node Instruments (SNI)

Receives and displays data transmitted by MNI.

- Available in 2, 3 or 5" sizes.
- Multi-gauge configurations available
- Engine fault and warning indicator standard on all SNI's

#### Fault-Warning-Alarm (SNI)

Receives and displays data transmitted by an MNI

Provides users with additional fault and warning.

- Available in 2 or 3" sizes.
- Relay outputs
- Audible alarm output with mute option.

#### 2" Analog SNI (ASNI)

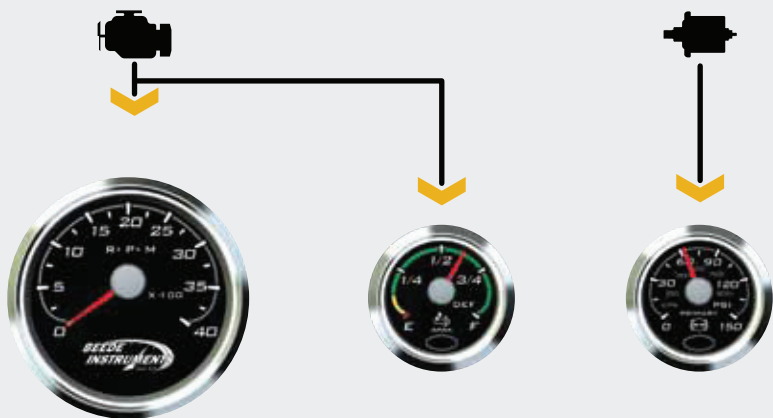
Receives data directly from analog senders and transmits information back to the MNI for display on the LCD.

A perfect way to expand analog inputs beyond the those found in the MNI.

- Supports resistive or voltage type senders.
- User settable alarms through MNI interface
- Illumination intensity set and controlled through MNI.

### Stand-Alone

When your application requires each individual instrument to read and process CAN data directly from an ECU or analog sender, NexSysLink® instruments will satisfy that need as well. With this approach, each instrument connects directly to a CAN signal or sender and processes the information independently. Stand-alone instruments can enhance a fully integrated approach by allowing you to mount the instrument remotely from the main dash instruments without having to connect back to the main dash. This reduces wiring costs yet places ECU or sender information exactly where you need it.



#### 2" Stand-Alone Node Instruments

Connects directly to a CAN data bus or analog sender. The choice when only a few parameters need monitoring or to complement an existing factory installed digital display.

- Various instruments included but not limited to:
  - DEF
  - Coolant Temperature
  - Oil Pressure
  - Oil Temperature
- Two factory set warning fault indicators
  - Amber (flashing)
  - Red (steady)

# J1939 Stand-Alone CAN Bus display



Instrument Shown  
Actual Size



Configurable Two Line Display

## Features and Benefits

- SAE J1939 CAN protocol support
- Compact packaging
- 32 X 128 dot matrix graphic LCD
- Displays active and stored faults (SAE J1939 DM1 & DM2)
- Single or Dual Line Display
- Three discrete LED indicators
- Alarm output capable of switching up to 150 mA
- Built in audible alarm (mutable)
- Built-in, sealed, tactile rubber keypad
- Bright, adjustable LED illumination
- Environmentally sealed connectors

## NexSysLink®

### CAN Instruments Product Family

The NexSysLink CAN Bus display instrument reads and processes SAE J1939 compliant CAN messages.

The sunlight visible, transfective LCD displays operating parameters and is complemented by three discrete alert LED's.

An intuitive menu driven user interface accessed by three built-in tactile switches allows for easy display configuration.

Stand-alone and Master Node (MNI) configurations available. MNI configuration drives NexSysLink® SNI & ASNI gauges.

### SAE J1939 Parameter Set\*

Parameter Name	SPN	Parameter Name	SPN
Accelerator Pedal Position	91	Fuel Rate	183
Alternator Voltage	167	Engine Fuel Temperature	174
Battery Current	114	Engine Hours	247
Battery Voltage	168	Engine Oil Level	98
Boost Pressure	102	Engine Oil Pressure	100
Coolant Level	111	Engine Oil Temperature	175
Coolant Pressure	109	Hydraulic Oil Level	2602
Coolant Temperature	110	Hydraulic Temperature	1638
DEF Level	1761	Intercooler Temperature	52
DEF Temperature	3031	Percent Load	92
Engine Speed (RPM)	190	Vehicle Miles	245/917
Exhaust Gas Temperature	173	PTO Speed	186
Fuel Economy (Average)	185	Engine Throttle Position	51
Fuel Level 1	96	Vehicle Speed	84
Fuel Level 2	38	Transmission Oil Level	124
Fuel Delivery Pressure	94	Transmission Oil Pressure	127
		Transmission Oil Temperature	177

\*Only actively broadcast parameters appear on the LCD.

# J-1939 Tell-Tale Indicator with 30 Icon Positions



This CAN based product complements the NexSysLink® instrument system by providing thirty LED illuminated operator alert tell-tales along with an audible alarm to alert users to multiple fault conditions.

The alert panel directly reads and processes SAE J-1939 compliant CAN messages, serial data from any NexSysLink Master Node Instrument and up to ten factory configurable discrete inputs switched either high or low to activate the tell-tales and/or audible alarm.

A discrete output capable of switching up to one amp and an audible output increase the utility of this product.



## Send the engine data to the Cloud

The Faria EntelNet™ service is a multi part system which combines the information received from the engine ECU (via CAN Bus), Analog (resistance, voltage, etc.) or Serial data (RS-232 for NMEA 0183, typical for GPS) used by the MG3000/MG1000 and an over the air communications system, i.e. Wi-Fi, data to provide remote control and monitoring of on-board systems.

## What Does That Mean?

With the EntelNet™ system you can use your smart device to monitor and control your system data and critical information right from the palm of your hand and view the Real-World data being sent by the ECU and send it to your Service Technician for diagnostics.

Android® App



Coming Soon



The MG3000 receives the system data on the CAN and the other information from other input devices and parses it to the module for sending.

The CAN module receives system data directly from the CAN bus and sends the data to the browser via WiFi.

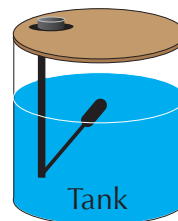
System Data

CAN Data

Analog Inputs

GPS

SAE J1939



Level  
Pressure  
Temperature  
Voltage  
Environmental  
and others



**A complete solution for remote instrument monitoring!**

# Commercial and Industrial Products

## A wide range of Analog instruments with Digital functions

Available in a wide variety of styles and configurations.



## Snap-in Discrete and Multi-function instruments



Available as;

- Ammeter
- Voltmeter
- Pressure gauge
- Temperature gauge
- Fuel Level gauge with Digital hourmeter or Tachometer-Hourmeter function

Designed to SAE specifications for Dust, Vibration and Water intrusion. The Faria Snap-In instruments provide a Heavy Duty instrument in a easy to install push-in case manufactured in the USA.

This multifunction instrument provides many useful features in a small compact design. Available functions include; Inductive Tachometer, Hourmeter, Programmed Service Intervals and an analog discrete function (Voltmeter, Water Temp, Oil Temp, Oil Pressure, Fuel Level, Fuel Pressure)

No back clamp, washers, nuts or tools are required to install the gauge into your panel.

With its patented mounting design the Snap-In gauge is designed to install easily and reduce costs. Simply push through the mounting hole. The case springs out to hold your gauge in place.

## Digital Stepper Motor instruments



- Direct Replacement for Analog Gauges
- Stepper Motor Driven gauges for increased Accuracy and Gauge Life.
- Uses Analog inputs
- Can be configured for any Analog configuration.



# Control instruments for Electronically Governed Engines



The M150L00 Series Control instruments are designed to provide Plug N' Play solutions for installations with existing panel designs. These kits are designed to control J1939 electronically governed engines.

With a full featured J1939 interface the L00 series kits provide a complete interface for virtually any SAE J1939 data. With standard features such as "TSC1 Throttle Control", "Fuel Level Input", "Engine Oil Pressure" and "Engine Shutdown", the L00 series kits provide the most features in the price range.

With the traditional look of a round gauge using the latest microprocessor technology the M150L series products provide the user with a traditional "look and feel" for controlling the latest electronic engines. Incorporating the latest technology allows the M150L products to be fully scalable from a single gauge solution to a full feature multi-gauge applications.



(Pre-made panels available)

## Programmable Tachometer



This tachometer can be programmed to function with 1, 2, 4, 6 and 8 cylinder gasoline engines and with most diesel engines, and can be used with most ignition coils including Alternator and Mag pickup inputs.

It is available in a wide range of scales or you can customize to fit your needs.

A versatile design from a leader in the engine monitoring industry, Faria products are designed to give you years of service and worry free performance.

## Programmable Speedometer



- Easy programming (for 1 or 2 axle ranges)
- Hourmeter function available
- Program service intervals
- Store highest speed
- Custom proprietary features available
- Easy calibration -
  - drive a measured mile
  - calibrate from inside cab
  - preset at factory
- Speedometer sensors available

## A Tachometer to fit every need



### Universal Gas and Diesel

Available in 4 and 5 inch sizes with multiple ranges;

6000 RPM for Inboard and I/O engines

7000 RPM for all out board engines

3000 - 5000 RPM for diesel engines

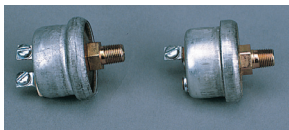
These tachometers are available for all ignition systems, alternators and diesel engines. Available with or without a digital hourmeter which records up to 999999.9 hours.

### 2 inch tachometer

Available in ranges from 1500 RPM to 4000 RPM. This 2-inch Tachometer connects to the Alternator signal. The tachometer has four range selections for rough calibration and an adjustment potentiometer for fine adjustment.

## Senders, Sensors and Switches

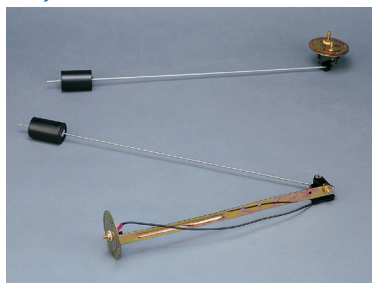
### Pressure Switches



### Temperature Senders



### Adjustable Fuel Level Senders



(For Tanks 6 to 25" deep)

### Pressure Senders



### Temp. Sender/Switch



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Made in the USA