



# CONTROL SIGNAL

A publication of Gilson Engineering Sales, Inc.

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## E Instruments Portable Industrial Combustion Analyzers

**G**ilson Engineering is proud to announce our new and exclusive relationship with E Instruments Group. E Instruments manufactures a complete line of industrial portable combustion and emissions analyzers.

Boiler efficiency, safety, and emissions are all important aspects that need to be monitored and maintained. This is especially true when you consider the current trend of increased frequency of government required reporting and testing. E Instruments analyzers are designed to assist customers in meeting these requirements.



Series 8000 analyzer with heated probe

The multifunction analyzers are suitable for such diverse applications as: utility and power plant boilers, heaters and dryers, kilns and furnaces, (Continued on page 2)

## Moore Industries Acquires Line of Foundation Fieldbus/Profibus PA Device Couplers and Power

**M**oore Industries now offers unique FOUNDATION Fieldbus and PROFIBUS PA device couplers and hazardous-area power supplies. Offered as MooreHawke, these products compliment Moore Industries existing product line of distributed I/O, temperature sensors, transmitters, alarm trips, signal conditioners and isolators. Products are offered for General Purpose Non-Incendive, Zone 1 & 2 Flame-Proof and Intrinsically-Safe installations.

TRUNKGUARD™ Series device couplers enable quick connect/disconnect of FOUNDATION Fieldbus™ and PROFIBUS PA devices into fieldbus segments. Electronics include auto-resetting short-circuit protection (Continued on page 4)

## Hot New Products

## Reduce the Cost of Gas Monitoring with MSA X3 Technology

**M**SA has taken the award winning Ultima-X gas monitor to the next level. The new Ultima-X3 Gas monitor allows up to three different sensors to be inputted into a common module. Why purchase, mount and wire three different sensors when one Ultima-X3 can handle the job?

Connect your X3 system to your PLC or DCS via ModBUS RTU. ProSoft Technology, inc. has independently tested and certified X3 technology to be compatible with Allen-Bradley PLC/ModBUS connectivity. A system can handle up to 31 monitors with up to 3 sensors per monitor for a total of 93 sensors.

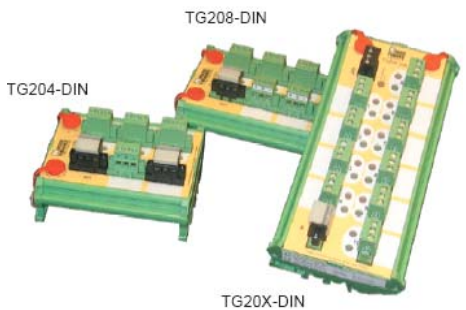
Any combination of Electrochemical (toxic gas or Oxygen), catalytic bead (combustible gases) or Infra-red (combustible gases) can be used.



Ultima-X3 with 3 sensors

A scrolling display gives the user readings on all three sensors on a module.

Look to the MSA Ultima-X3 to save money on your next gas monitoring project.



Trunkguard DIN mount device coupler

## Inside This Issue

### What is a Manufacturers Rep

### Low cost Vision Sensors

## Employee Profile

**D**enny Petrovich joined Gilson Engineering in May of 1997. He graduated in 1991 from Indiana University of Pennsylvania with a Business Management degree. After working as the company applications engineer for one year, he has been covering Southwestern PA and Northern WVA as an outside Sales Engineer since then.

He really enjoys the day to day challenges of helping his customers solve applications. He says, " The best part of my job is that there are no two days exactly alike. Each day brings something new and I really like the people I work



with, both the customers, and all of my co-workers."

Denny lives in Sewickley, PA with his wife Kim, his son Justin and his daughter Abbey. He loves to spend time with his family. His kids are very active in sports and it is his very favorite past time.

### *(Analyzer, Continued from page 1)*

stationary internal combustion engines, turbines, ISO 14000 auditing and compliance, CEM backup and maintenance.

The E Instruments comprehensive line has systems available that can monitor from 1 to 9 gases along with different gas ranges. Typical gases of interest include: O<sub>2</sub>, CO, CO<sub>2</sub>, NO, NO<sub>x</sub>, NO<sub>2</sub>, SO<sub>2</sub>, H<sub>2</sub>S, and C<sub>x</sub>H<sub>y</sub>. Other measurements can also be performed by the instruments. They include: Efficiency, Delta P/Draft, gas temperature and gas velocity.

All portable analyzers can include:

Built-in Impact Printer – It uses a low cost common roll of paper (non thermal)

Easy Replaceable Gas Sensors – Units use long life, low maintenance sensors

Standard Report of Calibration – Every instrument is factory calibrated and certified to ensure traceability and shipped with a complete report.

Keyboard & Display – Text, menu and keyboard in English for simple and intuitive operation. Engineering units are selectable via keypad.

Multi-Fuel Selection – Units provide up to 10 fuels for calculating combustion values. The most common fuels are pre-loaded from the factory. Other fuels can be added using PC software.

Gas Sampling Probe – Flue gas sampling probes with different lengths and shapes are available to match your specific requirements. The sampling probe is connected to the instruments with a single or dual hose through a water trap and a suspended particle line filter.

Proprietary Design Trap – Patent pending trap to inhibit water from getting into the instrument. External design to prevent the risk of instrument damage and large water holding capacity.

Flash memory – Flash memory allows the instrument to be configured by updating the analyzer firmware for any future legislation requirements or prod-



Series 4000 4-gas analyzer

uct performance upgrading.

CO Sensor Protection – An automatic device can exclude the CO sensor in the presence of high CO levels.

Industrial Probe & Compact Cooler Unit – A special sampling probe is available for high temperature applications. This probe can be connected to an external gas conditioning unit. This compact unit cools and dries the gas sample.

## Test your Tech Knowledge

What information is required to convert ACF (actual cubic feet) to SCF (standard cubic feet) of gas?

- A) Temperature
- B) Viscosity
- C) Vapor pressure
- D) Pressure

See page 6 for answer

## General News, Schedule of Events

### Pittsburgh

Tues. March 28, 2006 - Pittsburgh ISA Show 7:30AM-7:00PM at Heinz Field  
New Employee - Tiffany Jordan, Inside Sales for Cleveland and Toledo offices

### Toledo

Jon Boykan passed the Ohio Principals of Engineering exam in Control Systems, and is now a registered PE in the state of Ohio.

### Florida

We are pleased to announce Shawn Gilson will be taking over for Wally Cunningham in Eastern Florida. Shawn has 25 years of experience in the instrumentation business. He is very knowledgeable and conscientious. Shawn is looking forward meeting each of you.

Apr. 9-12, 2006 - Florida Water Resource Trade Show-Orlando Convention Center

## What is a Manufacturer's Representative

**Middleman?**  
**Distributor?**  
**Broker?**  
**Outsource provider?**

There is a lot of confusion and misunderstanding of what a manufacturer's representative is. Most people think of us as a middleman. This connotation leads to most people believing that we provide product to them at a marked-up price. While we understand this thinking, we would like people to truly understand who we are and what advantages we provide.

In order to clarify a manufacturer's representative, I usually relay the following analogy: GM does not build every component that goes into the automobile. For instance they do not build the air bag assemblies. Why? Because GM can buy the air bag component from someone else that specializes in this part and can sell it to GM for a lower cost and better quality than it would cost GM to build the component themselves.

Guess what? Manufacturers outsource the sales function to representatives, because they can provide this service better and at lower cost than if they had a direct sales force. Hence, unlike a middleman, a manufacturer's representative actually helps keep the cost lower for the ultimate customer.

Manufacturer's representatives are contracted to sell in specific marketing areas. All sales activities in the contracted areas go thru the representative. In most cases the manufacturer still does the billing and shipping of the product. This is why we ask companies to address orders as follows:

Manufacturer  
c/o Gilson Engineering.

We are compensated for our efforts by the manufacturer, based on a commission rate on the total sales. This may lead to another misconception of commissioned sales people. Sometimes it is said by some, that commission sales people you see all the time, and once they get the

order, they are lost for ever. First and foremost, in the controls business, successful people are ones that have earned the respect of their customers, by their integrity, dependability and their capabilities. Compare the time that a manufacturer's representative salesperson has been calling on you, to that of a direct factory salesperson. Our average time for our salespeople calling on the same accounts is well over 15 years.

Since a manufacturer's representative handles multiple lines, many customers want to limit the number of vendors in the database, and send the orders directly to Gilson Engineering as opposed to the individual manufacturers. The costs for Gilson Engineering to take the order and invoice it directly has much higher costs than processing the order thru the manufacturer. The additional cost is 7-10% higher. Most people do not believe this, unless they examine the reason for the additional cost.

The additional cost associated with Gilson taking the order is the additional insurance premium that Gilson will be required to pay towards their liability insurance premium. When the manufacturers ship and invoice directly, 99% of the liability falls on them. When the representative invoices, this liability now shifts to the representative. Specifically, when dealing with a safety product, such as gas detection, the added premium cost is well above the 7% added cost. The reply back from several customers may be that their other representatives do not charge any premium. When this happens, I would ask those representatives for copies of their liability insurance. What you will find out, in most cases, is that they do not have this coverage. In today's environment, do you want to assume this risk?

As a rep agency, Gilson Engineering has more sales engineers in our territory than most direct sales force companies. Instead of having one direct person that covers several states, Gilson has 12 outside sales engineers. Normally each salesperson is located inside their territory, with their longest drive being less than 2-3 hours. This allows us to respond to inquiries, and

problems much quicker.

Since a manufacturer's representative handles multiple synergistic lines, they can cost effectively provide the sales function to multiple manufacturer's, while providing you a high quality product at an economical price and superior service.

## Banner Enhances Vision Sensor Technology

**B**anner has expanded their line of PresencePlus P4 product line introducing the P4 EDGE, the P4 AREA, and the P4 OMNI to augment the previously released P4 GEO.

As with the P4 GEO, each of the newly released units are available in an in-line or right angle housing and include remote teach capability, are self learning, and are capable of direct connectivity for all I/O to Ethernet IP and Modbus TCP industrial standard Ethernet fieldbus protocols. Each of the units also can store up to 12 different inspection files that are selectable via discrete wires or Ethernet Fieldbus protocols, and all of the units may be configured using a single PC program. Each unit is available in a 1280 x 1024 1.3 megapixel resolution imager for inspecting larger areas in more detail.

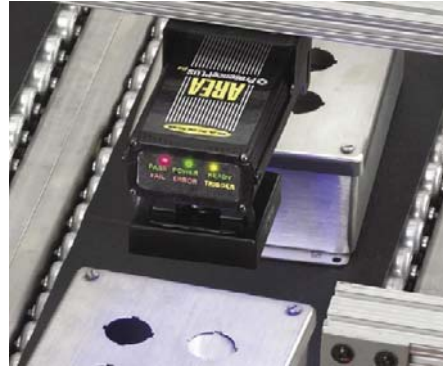
The P4 EDGE has Locate, Edge, Object, and Measure tools which handle such typical applications as label orientation, package flaps, cap, and fill level. The unit is capable of over 10,000 parts per minute inspection speeds and is



*P4 EDGE high-speed edge sensing and Measurement*

designed to deliver the highest speed vision sensor in the market at a price making it affordable to solve a wide array of applications.

The P4 AREA has Locate, Blob, Average Grayscale, and Measure tools, which allow the unit to handle simple inspection speeds of over 12,000 parts per minute. The unit is designed to replace multiple discrete sensors and to compete with the Cognex Checker, the Cognex In-Sight 5401, the Omron ZFV, and the DVT 530/540. Typical applications include: Presence/Absence of fea-



*P4 AREA object and gray scale sensing*

tures, complete assembly, tablet count, flash present or short-shots of plastic injection molded parts, and sorting objects based on size.

The P4 OMNI includes all of the tools of the other P4 sensor family in one package for inspecting multiple features. The P4 OMNI includes a 640 x 480 CCD imager- 24 times more pixels than a P4 GEO or a Congex Checker. Typical applications include Presence/ Absence of features, complete assembly, count features, and sorting. Even using all tools the P4 OMNI is capable of inspections of up to 2000 parts per minute.

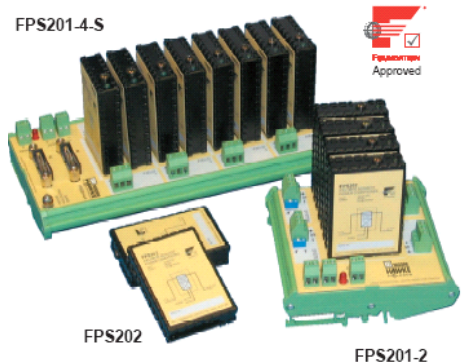
*(Fieldbus, continued from page 1)* with automatic segment termination for 4, 8, 10 or 20 fieldbus devices. Housings are NEMA 4X rated. Patented TRUNKGUARD™ technology, on detection of excess spur current, reacts immediately to switch spur current to a nominal trickle-level rather than simply limiting that fault current to a fixed (and always higher) level. This feature assures that local portions of a segment continue to function even if remote portions are accidentally disconnected.



*Trunkguard intrinsically safe coupler in field enclosure*

Automatic Segment Termination feature includes unique end-of-line sensing circuits which eliminate common under/over termination errors. TRUNKGUARD™ Series 200 couplers are FM approved for Class I, Div 2, Non-Incendive installations. Series 300 units are approved for Zone 1 and 2 flame-proof Exd devices. A unique magnetic key interlock even allows device removal, under power, when tied to Series 300 modules. LED indicators show spur state as: 'NORMAL', 'FAULT' or 'DE-ENERGIZED.'

ROUTE-MASTER™ Series 100 Fieldbus System provide galvanically-isolated dual redundant power supplies capable of supporting up to 8 Trunk Isolator Modules, each of which can provide up to 350mA to fieldbus devices. In place of FISCO, MooreHawke offers a patented split-architecture design. This design allows cable lengths up to 5700



*High-density isolated power supplies*

feet (1900 meters) and spur lengths to 360 feet (120 meters). Field enclosures are available in aluminum, glass-reinforced polyester or Stainless Steel.

FPS200 Series Fieldbus Power Supply systems are designed to simplify implementation of fieldbus installations. Systems are DIN-rail mounted and comprise carriers with individual fieldbus segment power conditioners. Carriers are available for 2-, 4- or 8-segment configurations with switchable terminators. Power conditioner redundancy is available with 2- or 4-segment carriers. Each power conditioner delivers up to 350mA of fully isolated, fieldbus-conditioned power per segment. These systems are fully compliant with Fieldbus Foundation FF831-1 and are FF registered.

## Siemens In-Line Magmeter Verification

**S**iemens Verificator is a device used to check total performance of a Siemens magnetic flow meter without removing meter from the line. The Verificator is used by removing the electronics from the magmeter, connecting the Verificator to the magmeter, then connecting the electronics to the Verificator (see figure 2). A complete system test take about 15 minutes and gives a performance printout. The test is performed in 3 steps.



Fig 1. Verificator in carrying case

1. Transmitter Test. Using a magnetic field, the Verificator simulates a flow energy to the transmitter input. By measuring the transmitter output, the Verificator calculates its accuracy against factory defined values. This test checks the whole electronic system from signal input to output.

2. Flow meter Insulation Test. The Verificator generates a high voltage disturbance within the coil circuit and then looks for any "cross talk" induced in the flow signal circuit. By generating dynamic disturbances close to the flow signal, the flow meter is tested for noise immunity to a maximum level. This ensures your outputs are unaffected by external influences.

3. Sensor Magnetism Test. Sensor magnetic field is measured and compared to the sensor magnetic field when initial factory calibration was performed. Initial magnetic field values are stored in the meter's EEPROM chip.

The Verificator can be purchased or rented from Siemens at a daily rate. The Verificator comes with easy to use Window's based software so verifica-

tion certificates can be stored and printed. Up to 20 meter test can be stored in the Verificator prior to being uploaded to your PC. The certificate documents the verification and includes:

- Test results with pass or failed approval
- Installation specification
- Flow meter specification and configuration
- Verification specification with date of calibration ensuring traceability to national and international standards

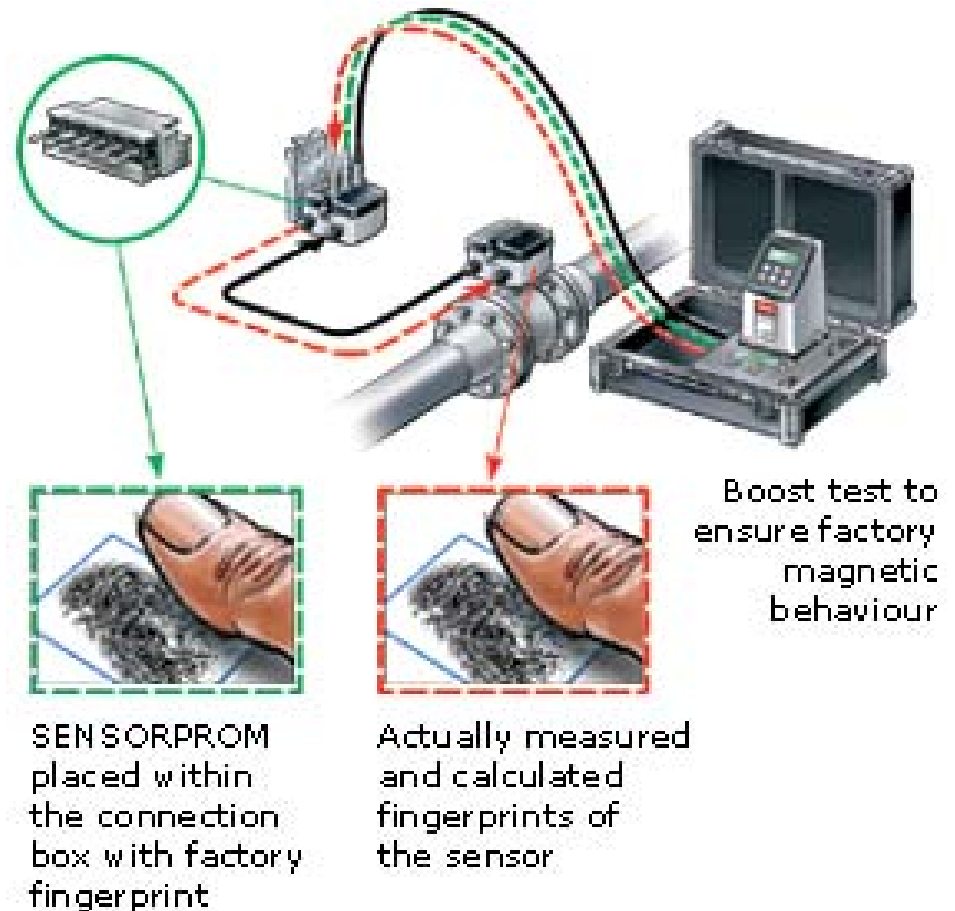


Fig 2. Verificator checks transmitter and sensor

*Test answer from page 2*

A standard cubic foot is the volume an actual cubic foot of the gas would occupy at standard conditions (see standard conditions below). Answer is A (temperature) and D (pressure). The equation for converting ACF to SCF is:

$$SCF = \frac{(ACF) \times (P_{act}) \times (520)}{(14.7) \times (T_{act} + 460)}$$

T<sub>act</sub> = actual temperature in Deg F  
 P<sub>act</sub> = actual pressure psia (psig + 14.7)

In the U.S. standard conditions are 60 Deg F (520 Deg R), and 14.7 psia.

Why is important to know the difference? Which is more valuable; an actual cubic foot of natural gas at 1 psig, or 100 psig? Given the same temperature, the 100 psig cubic foot has 7.3 times more gas than the 1 psig cubic foot.

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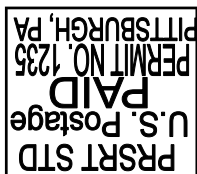
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*Please see our mailer inside to send for more information from GES, Inc.*



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