CONTROL SIGNAL

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Meriam Instruments Keeps Cal Cycles Moving

Meriam Instruments operates on the priniciple that once your have purchased a HART Communicator or an Instrument Calibrator, you should have a device that is ready to fire up and get to work quickly. Unit needs to stay at your plant available to work instead of collecting frequent flyer miles heading back to the factory for updates of Device Descriptors. Meriam has developed products to keep your instrument techs on the move.

Model MFC4100 HART COMMUNICATOR

The original HART communicators only worked with one manufacturer's equipment. With growing popularity of HART, the 275 Handheld was introduced allowing Device Descriptors from various manufacturers offering

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MFC4100 HART communicator

E-Instruments Enhances Handheld Thermometer

E-Instruments has recently released a new product called the P2000 "GREEN LASER". This is not your typical Laser temperature device. With a D:S (target sighting) ratio of 200:1 the P2000 has the ability to maintain a very small target size from a long distance.

The P2000 is intended to measure high temperatures 1100F to 3630°F. Other features include:

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Hot New Products

Loop Powered Backlit Panel Meter from Precision Digital

Loop powered, backlit display

The PD683 is a general purpose loop-powered digital meter for safe area applications. The meter's four front panel buttons make the setup and programming an easy task. Five digits, bargraph, engineering units, and trend arrows provide a clear and attractive presentation of the process.

The PD688 is an FM Approved & CSA Certified intrinsically safe and non-incendive loop-powered digital meter. The PD688 can be installed almost anywhere because of the approvals and the large backlit LCD. It can be easily read under virtually any lighting conditions, from total darkness to direct sunlight.

Square root and programmable exponent functions are standard features on the PD683 and PD688. These features allow for conditioning of outputs from nonlinear transmitters without adding external components to the system. The convenience of scaling without a signal source makes the PD683 and PD688 the ideal choice for any process display application.

Inside This Issue

MSA Offers New Three-Gas Monitoring System

MSA offers their TRIGARD™ multi-gas monitoring system for applications in Water/ Waste Water, HVAC, UPS Battery Rooms and General Purpose Air monitoring. The TRIGARD™ (as shown below) consists of a NEMA-4X enclosure with front face LCD, alarm LED indicators, integral Piezo horn with horn silence and Push-button calibration. It can accommodate up to three integral sensors (as shown) or remotely mounted. Remote mount sensors are available with cable lengths of 25, 50 or 100 feet. The unit is powered by 85-256 volts AC or 24 volts DC. On-Board relays can be tied to activate strobes, horns or fans. Battery backup is offered as an option in case of power loss.

Standard features include:

- Sensor change-out (under power) without declassifying an area
- Smart sensors which store sensor calibration data
- "Plain English" display of gas type, alarms and diagnostics
- "Quickcheck" LEDs indicate NORMAL (green) and ALERT (red) status
- Field programmable alarm levels with selectable relays (N.O. / N.C.) and (Latch / Non-Latch)
- Three levels of Alarm and one for Fault conditions

The Trigard is available with the following sensors:

Ammonia
Arsine
Bromine
Carbon Monoxide
Chlorine
Chlorine Dioxide
Combustible Gas
Diborane
Ethylene Oxide
Fluorine
Germane
Hydrogen
Hydrogen Chloride
Hydrogen Cyanide
Hydrogen Sulfide
Nitric Oxide
Nitrogen Dioxide
Oxygen
Phosphine
Silane
Sulfur Dioxide

The Trigard can accept different sensors in the same unit. A common application in waste water is to monitor H_2S, Combustible gas, and Oxygen.

Employee Profile

We are pleased to announce the latest addition to Gilson Engineering's outside sales team Tim Kendrick. From 1992 to 1996, Tim handled sales leads for our company. Tim rejoined Gilson Engineering in 2001 as an application specialist in our insides sales department. In the 5 years that Tim worked in applications, he has a thorough understanding of the products and applications. You can be

guranteed that Tim is knowledgeable, and may not know every answer, but is one individual that you can trust will get back to you with a timely reliable answer.

Tim is a graduate of Robert Morris University. Prior to rejoining Gilson. Tim worked in distribution and logistics with US Steel, tactical planning with Praxair and logistic analyst with Aristech Chemical.

Tim and his wife JoAnna have two sons Justin and Trevor. When he is not busy with his sons, he enjoys his AMX . In addition, when time allows, Tim the "Tool Man" gets involved with Home improvements. Tim enjoys his new position and looks forward to working with all of you.

General News, Schedule of Events

Pittsburgh

February 20-22, 2007	Erie Engineers Show, Erie Civic Center
March 6, 2007	Pittsburgh ISA Show, Heinz Field

Toledo

March 14, 2007	Toledo ISA Show, Holiday Inn, French Quarter

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What is Ethernet?

Q: I have 2 devices that both have Ethernet ports on them. Will they communicate with each other?

A: Maybe.

There are many versions of Ethernet that are defined by their physical layer and transport layer. Remember, Ethernet is not a language. Ethernet defines the physical and electrical highway over which data is transmitted. The physical connection may be unshielded twisted pair (UTP), coax, or fiber. The connector types and electrical characteristics are also defined by the individual Ethernet standards. The data link layer defines the frame format, error checking method, and physical addressing method.

A newer faster device may be able to communicate with a slower device. If a piece of hardware has 10/100/1000BASE-T capabilities, through autonegotiation it may be able to communicate with other devices running at 10, 100, or 1,000 Mbit/S over twisted pair.

You may have one network running 100BASE-TX over Cat-5 twisted pair, and another newer network running 100BASE-FX over fiber. Obviously, a device with a wired version of Ethernet will not connect directly to one with fiber. However, there are converters available to allow networks using different media types to communicate with each other.

Wireless Ethernet is not really Ethernet. Ethernet is defined by IEEE 802.3x. Wireless communications are defined by IEEE 802.11x. Wireless has many advantages over Ethernet, though the fastest wireless standard used today (802.11g) is rated at 54 Mbit/S. This is slow compared to the speeds listed below.

Though fiber is generally more expensive than equivalent lengths of twisted pair, it offers the advantage of noise immunity in industrial environments. Also, it may be run in hazardous areas.

Besides your PC, Printer, PLC, or other 'Ethernet ready' device, there are other pieces of hardware that you may use in your LAN.

Hub
A device for connecting multiple Ethernet devices together, making them act as a single segment. A hub is a broadcast device, so any packet entering any port is broadcast out on every port.

Multi-port switch

Switch
A switch is similar to a hub, except it isolates each port. Every packet received is sent out only to the port on which the target may be found. Since the switch sends packets only where they need to go the performance of the network can be greatly increased.

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Standard	Recommended Media Type	Data Rate	Segment Length	Comments
10BASE-5	RG8U coax	10 Mbit/sec	500 meters	Obsolete
10BASE-2	RG58 A/U coax	10 Mbit/sec	200 meters	Obsolete
10BASE-T	Cat-3, Cat-5 cable	10 Mbit/sec	100 meters	
100BASE-TX	Cat-5 cable	100 Mbit/sec	100 meters	
100BASE-T4	Cat-3 cable	100 Mbit/sec	100 meters	
1000BASE-T	Cat-5E, Cat-6 cable	1 Gbit/sec	100 meters	Obsolete
1000BASE-CX	Special cable	1 Gbit/sec	25 meters	Obsolete
10GBASE-T	Cat-6, Cat-7 cable	10 GBit/sec	100 meters	May work up to 56 meters with older cable
10BASE-FIORL	Fiber	10 Mbit/sec		Obsolete
10BASE-FB	Fiber	10Mbit/sec	2000 meters	
10BASE-FL	Fiber	10Mbit/sec	2000 meters	Replaces 10BASE-FIORL
100BASE-FX	Multi-mode fiber	100 Mbit/sec	400 meters	Up to 2 km full duplex
1000BASE-SX	Multi-mode fiber	1Gbit/sec	550 meters	
1000BASE-LX	Multi-mode fiber	1Gbit/sec	550 meters	Up to 20 km with single mode fiber
10GBASE-LRM	Multi-mode fiber	10Gbit/sec	220 meters	Relatively new standard
10GBASE-CX4	Copper, CX4	10 Gbit/sec	15 meters	
10GBASE-SR	Multi-mode fiber	10 Gbit/sec	82 meters	Up to 300 meters with newer fibers
10GBASE-LX4	Multi-mode fiber	10 Gbit/sec	300 meters	Up to 10 km with single mode fiber
10GBASE-LR	Multi-mode fiber	10 Gbit/sec	25 km	
10GBASE-ER	Single-mode fiber	10 Gbit/sec	40 km	Up to 80 km with 10GBASE-ZR interface

PLC, DCS, and PC Control Backup Station for Critical Loops

Moore Industries Model 531 Power's controller provides automatic PID control backup for critical loops controlled by PLC, DCS, or PC systems. This easy to use controller will provide the redundancy needed to control/backup your most critical PID loops.

Local and Host Modes

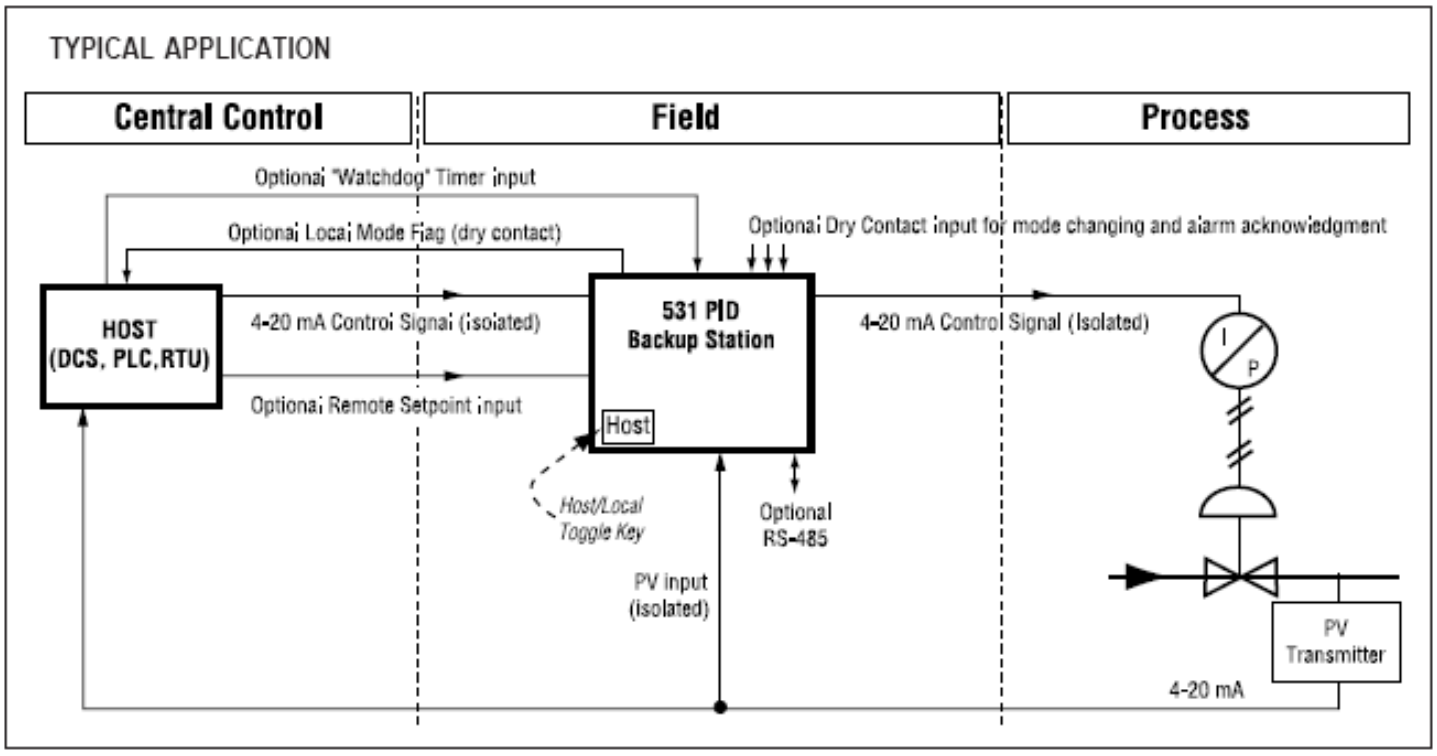
The controller has two modes of operation: Local and Host. When in Host mode, the Control Variable (CV) passes directly through the controller. This 4-20mA Control Variable is hard wired to pass directly through the controller without degradation, even when the controller chassis is removed from the case. Note this controller does not simply sense and re-transmit the control signal, it is a redundant controller that allows the CV to pass directly through as long as there is a signal or contact enabled advising controller that all is functioning correctly.

In the event the CV is lost, the controller will automatically switch to Local mode and either maintain a predetermined setpoint or operate a programmed PID loop. With this bumpless transfer, the 531 now generates a CV in either Local-Auto or Local Manual. The controller can also be switched from Host to Local-Auto or Host to Local-Manual using the keypad. When the Host CV returns, the controller can transfer back to Host mode or stay in Local mode (configurable).

Features of the 531

- Universal Process Variable Inputs: RTD's, thermocouples, mA, voltage
- Alarms: Configured to alarm on loss of Host CV or setpoint on any variable
- Optically isolated inputs and outputs to prevent ground loops
- Nema-4X front panel
- Illuminated rubber programming keys and bright three line display
- Optional RS485 output
- Security: Can restrict access to any function group

The Moore Industries 531 will provide automatic backup to your critical control loops.



(Meriam , from page 1)

HART with the number of supported devices limited by memory size or the 275. With new transmitters hitting the market, trips out of the shop for updates became more frequent, and came down to giving up DD's to make room for the new one.

The MFC 4100 HART Communicator is a small, compact device for configuration of HART devices. Unlike some competitive units that take as much as 90 seconds to initialize when powered, the 4100 is NOT WINDOWS based, and therefore starts up in seconds and is ready to work.

Updating firmware and DOF's is a breeze. Included with the purchase from Meriam is a 3-year subscription allowing access to the latest DOF's on the Meriam website. Connecting the 4100 with a serial cable, the software reads the serial number of the unit and updates are loaded from the online connection in seconds keeping the unit both updated, and available to the techs who need to use it.

Model MFT4000 CALIBRATOR

The MFT 4000 delivers the versatility of a calibrator and the convenience of HART communications in one hand-held unit. The MFT4000 has three bays to accept modules for differential, gauge, vacuum and absolute pressures, as well as temperature, current and voltage. An integral voltage and current meter is part of the base unit with a display capable for showing 4 variables simultaneously. Hart devices can be configured, polled and trimmed all with one device.

DSM – DEVICE MANAGEMENT SYSTEM

DSM Software allows a full management of your instrument database with history, and report generation with data from both the MFT4000 Calibrator and the MFC4100 Hart Communicator.

MFC 4000 Calibrator with HART communicator option

Gilson Engineering is pleased to add Meriam Instruments to the list of the quality companies represented.

(Thermometer, Continued from page 1)

- An accuracy of +/- 0.5% of reading + 2.0 °F.
- Actual, max, average, min, and ΔT measurements
- RS232 PC Communication
- Analog Output
- Data Memory (500 records)
- Aux Tc K and S Input for AUTOMATIC emissivity setting
- Programmable Alarms

It has twin green lasers rather than red, making it more visible in certain applications. When metals and other materials heat up, they turn red. This poses a problem if you are trying to see a red laser. With a green laser many of these problems are eliminated at high temperatures. This makes the P2000 a good candidate in the measurement of furnaces, steel hot rolling, induction heating, forging, friction welding, tube bending, glass/ceramic mfg, and heat treating.

(Ethernet, Continued from page 3)

Router

A router acts as a junction between two or more networks to transfer data packets among them. Your router at home connects the Internet Service Provides (ISP) network to your in-home network. A multi-port router performs the functions of both a switch and router.

The table to the right lists the specifications for the various cables used in Ethernet systems.

Ethernet Cabling Categories

Cat-1: Previously used for POTS telephone communications and ISDN. Obsolete.
Cat-2: Previously used on 4 Mbit/sec token ring networks. Obsolete.
Cat-3: Previously used on 10BASE-T networks.
Cat-4: Used on 16 Mbit/sec token ring networks. Obsolete.
Cat-5: Used on 100BASE-T networks. Unsuitable for 1000BASE-T Ethernet systems.
Cat-5E: Supersedes Cat-5 specification. Used on 100 Mbit/sec and 1000 Mbit/sec networks.
Cat-6: Standard for 1 Gbit/sec Ethernet. Backward compatible with Cat-5 and Cat-3.
Cat-7: Used for 10 Gbit/sec Ethernet. Backward compatible with Cat-6 and Cat-5. Includes shielding for individual wire pairs, and cable as a whole.