

Mtech Product Update



Product News

www.turck-usa.com

Single Axis 360° MEMS Inclinometer Sensor for Detecting Angular Tilt

TURCK's introduces a new single axis inclinometer sensor for angular tilt detection with an adjustable measuring range of 360 degrees. Inclinometer sensors may be used in a wide variety of industries to solve unique feedback requirements where the customer needs to level platforms, control tilt angle or control a dancer.

The new TURCK inclinometer measures angular tilt in reference to gravity. At the heart of the TURCK inclinometer is a MEMS (micro-electro-mechanical system) device that incorporates a micro-electromechanical capacitive element into the sensor that utilizes two parallel plate electrodes, one stationary and one attached to a spring-mass system. Movement causes acceleration that produces deflection in the non-stationary electrode. This results in a measurable change in the capacitance between the two plates that is proportional to the angle of deflection. These signals are conditioned to provide a single analog voltage output (0.1 to 4.9 VDC) or current output (4 to 20 mA).

The micro board design in the MEMS technology allows for a compact, precise inclinometer in a very robust, industrialized package. The inclinometer is IP68 rated, with a temperature range of -30 to 70 °C.

Product Strengths

- Compact, rectangular design
- Sensitive and precise
- Long-term stability and reliability
- Multiple mounting possibilities
- High measuring speed
- IP68
- Robust design

Specifications

- Same Q20L60 housing as our dual axis version
- 360° range with full programmable measuring range over the entire 360°
- 0.1 to 4.9 VDC analog output; 4 to 20 mA current output (ratiometric 0.5-4.5v will be available on request)
- -30 to 70°C
- 10 to 30 VDC operating voltage



FM Approved Rotational Speed Interface Module

TURCK has enhanced its interface module (IM) family with the FM approved IM21 rotational speed interface module with push button and PC programmable functionality. The ability to program the modules using a PC makes device set-up easier and saves installation time. Additionally, FDT/ DTM software, together with PACTware, allows multiple parameters to be set and saved. Keeping in-line with the current IM series, the new models also incorporate the universal supply voltage feature and removable terminals, which make these easy to install in new or existing systems. The ease of use and structure of this function now allows asset management ability with trending and data logging of values. The IM21 module is also equipped with a two-line transfective LCD display that is easy to read even in bright lighting conditions.



Product Strengths

- PC programmable functions with PACTware and FDT/ DTM ability mean set-up and changes can take mere seconds to achieve
- Trending and ring buffer ability when used in conjunction with PACTware
- Removable terminable blocks
- Galvanic isolation of input, output and supply circuits
- Large, two-line transfective LCD display visible in daylight
- LED switching status
- Intrinsically Safe models available
- Universal power supply

Specifications

- Two Relay outputs
- 0/4 – 20 mA output
- Universal voltage power supplies: 20-250 VAC or 20-250 VDC
- DIN rail or built-in feet for mounting
- Detection range of 1mHz to 10 kHz (0.06 to 600 000 pulses/min)
- One Transistor output
- NAMUR or PNP inputs
- Hazardous Area approvals
- IP20
- -20 to 70° C

IP20 Ethernet Switch

TURCK's new IP20 rated Ethernet switches simplify and reduce traffic on Ethernet networks. The SE20 5-port unmanaged Ethernet switch stores and forwards wirespeed switching and automatically learns up to 1,024 MAC addresses. The switch is UL approved and requires a 24 VDC power supply. The SE20 Ethernet switch also compliments TURCK's complete line of BL20 IP20 rated products.

Product Strengths

- Five RJ45 ports
- DIN rail mounting
- Reliable 1,000,000+ hours MTBF
- UL/CSA and CE
- Intrinsically Safe models available
- Works with straight or crossover cables
- Universal power supply
- Dual power inputs with spike protection
- Galvanic isolation of input, output and supply circuits
- Large, two-line transfective LCD display visible in daylight



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BL Compact CANopen Modules

TURCK's BL Compact system is now available for CANopen networks, including modules with analog, digital and RFID signals. Rather than routing all signals through a control cabinet, this device makes it possible to obtain analog, digital, thermocouple, RTD, serial, RFID or a mixture of signal types in a compact, machine-mountable device.

The BL Compact system may be customized to suit a user's specific needs, so that devices may be added to an existing network and signals may be gathered on the machine without an enclosure. This drop-in solution can be used to connect up to 16 devices—drastically reducing the time it takes to run wires for each device back to the control cabinet and the potential for wiring errors.

The BL Compact system is currently available with four, eight or 16 ports in an environmentally hardened package that is rated for IP 67, 68 and (M12) 69k protection. M8 or M12 connectors facilitate easy installation into any application, existing or new.

Product Strengths

- Flexible and configurable I/O station in a rugged housing
- RFID in a standalone package as well as RFID combined with other signals
- Quick disconnect analog
- Small package can be placed closer to signals
- LEDs display status and diagnostic data
- Quick turnaround of custom modules
- Nontraditional solutions: Eight digital inputs with eight M8 connectors that doesn't require splitters

Specifications

- Operating voltage: 11-30VDC
- Operating temperature: -40 to 70 C
- IP 67, 68 and (M12) 69k degree of protection
- CE and UL approvals



AG4 Series Safety Laser Scanner

Banner Engineering has introduced a new solution for safeguarding mobile vehicles and stationary applications, such as:

- Automated Guided Vehicle collision avoidance
- Mobile Crane collision avoidance
- Robotic work cells: operator load areas and interior stationary applications
- Perimeter/Access vertical guarding
- Point-of-Operation vertical guarding

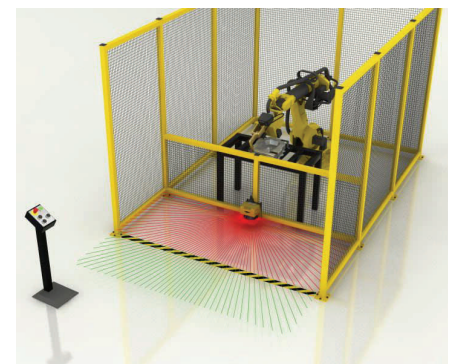


The AG4 is a two-dimensional optical measuring safety laser scanner that emits pulses of infrared light to locate and measure the position of objects in its field of view. A single unit that works on the principle of diffuse reflection (i.e., reflected light), the AG4 is an excellent choice for irregularly shaped safeguarding in applications where a standard two- or three-piece safety light screen will not work.

The AG4 safety area laser scanner is available in two models; the-4E with a maximum 4 meter range, and the AG4-6E with a maximum 6.25 m range

Features:

- Two-dimensional laser scanner effectively protects personnel, as well as stationary and mobile systems within a user designated area.
- Persons or objects entering the protection field will be detected and a protective (safety) stop signal will be generated.
- The highly flexible protective and warning fields can be set to match the shape of the work area.
- Compact design, simple installation and easy to-use software provide efficient integration into work zones.
- Two solid-state OSSD safety outputs (250 mA) and two solid-state auxiliary outputs (100 mA).
- Low power consumption (420 mA @ 24V dc) and a very forgiving supply range (24V dc +20%/-30%) require fewer or smaller power supplies, reducing power consumption.
- Five LED diagnostic display presents system status and diagnostics of devices without connecting to a PC.
- Rugged, die-cast aluminum housing withstands the rigor of factory floors.
- System meets all requirements for Type 3 per IEC 61496-1/-2 Category 3 PLd per EN ISO 13849-1, and Safety Integrity Level (SIL) 2 per IEC 61508.
- Eight individually defined protective and warning field pairs using a PC
- Protection field resolution is from 30 to 150 mm with ranges up to 4 m
- Warning field up to 15 m with a resolution of 150 mm
- 0.36° lateral resolution and detects objects in a zone up to 190°
- Configurable response time from 80 to 640 milliseconds
- RS-232 and RS-422 PC interface connection
- 24V dc supply voltage



EZ-LIGHT™ K80 Call Light

Banner has introduced a new portable, battery powered Andon light that can be used in locations where access to power is limited or unavailable. Andon lights on machines or production lines indicate operation status. They are often located overhead for workers or a supervisor to view them.

Features

- Illuminated dome provides easy-to-see call-for-assistance indication
- Flashes ON/OFF
- Rugged, cost-effective and easy-to-install
- Battery powered
- Switch activated
- No assembly required

Specifications

Supply Voltage	18V (two 9V batteries); batteries included
Battery Characteristics	Type: 9V alkaline (2) Life expectancy: approximately 100 hours continuous operation with high-quality alkaline batteries
LED Characteristics	Color: Red
Flash Timing	Turn on response: 1 second Flash duration: 35 ms Flash rate: 1 second

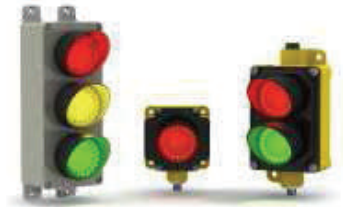


EZ-LIGHT™ Traffic Light

Banner Engineering has introduced the new EZ-LIGHT™ Traffic Light. This new addition to the EZ-LIGHT family provides high-intensity indication lights to prevent collisions and/or injuries in both indoor and outdoor application environments such as: loading docks, parking facilities, car washes, and airports. The Traffic Light product is available in 1, 2 or 3 light configurations and comes preassembled complete with enclosure.

Features

- Preassembled indicators for signaling and traffic control
- Sun shield included
- Rugged, cost-effective and easy-to-install
- One, two or three indicators
- NPN or PNP input, depending on model
- Intense levels of light output for outdoor applications
- Controlled field of view for signage and narrow lane use
- Compact and completely self-contained – no controller needed
- Immune to EMI and RFI interference
- 15-30V dc or 85-130V ac operation



Cscape Release—Version 9.10, Firmware—Version 12.70

Horner has released Cscape™ Version 9.10 is a new release offering a variety of product improvements.

In addition to Cscape™ 9.10, we are releasing NEW Firmware Version 12.70 for the XLe, XLt, XL6e, XL6m, RX371, NX and QX Series of controllers. Some of the new features included with Cscape 9.10 are:

- Support for Horner's new Modbus TCP/IP Ethernet I/O-'SmartRail'
- Supports the new Horner XL6m grayscale touch screen OCS
- Supports the upcoming Horner RCX controller
- New group of logic blocks to allow access to large tables of bits
- Support for Email via GPRS as well as Ethernet
- "Alarm Acknowledge and Clear" through registers
- An additional 'Empty Square' selector is available for the indicator graphics object
- The Gauge object now has an adjustable needle length
- And more! E

• [Click here for a list of Cscape 9.10 changes, enhancements and release notes.](#)

Click here to go to the [Cscape/Firmware Download Page.](#)



• **If you choose to install Cscape 9.10 and retain previous versions of Cscape, you must move the previous versions to new folder(s) prior to installing Cscape 9.10.**

• **Backup all application files (.csp) prior to using Cscape 9.10. Once application files are saved in Cscape 9.10, they can no longer be opened with previous versions of Cscape.**

• **Note: If you are an EnvisionRV 2.0 user, Cscape 9.10 will require EnvisionRV 3.0 which will be released soon.**

Efficiency.....The Forgotten Feature

Efficiency is one of the most important features that every engineer must consider when selecting a power supply. Not considering the impact of efficiency can have many adverse effects. Efficiency is simply the difference between the input and output power and almost all the loss is dissipated in the form of heat. If we compare two different 960W power supplies, one rated 85% efficient and the other 93%, someone might say that the only difference is 8% but that is a huge understatement. If we calculate the heat loss for each power supply the 85% efficient unit dissipates approximately 169W of energy as compared to the 93% unit which only loses 72W. The difference is almost like an extra 100W light bulb burning in your control cabinet.

Considerations of Heat

Heat is the number one enemy to a power supply because of the electrolytic capacitors, but many times there are far more sensitive electronic components inside an enclosure which can be affected by heat. Heat can radically change the reliability and lifetime of the power supply and in many cases can force you to increase your enclosure size, install some form of cooling or de-rate the unit. The general rule of thumb as published by the capacitor manufacturers is that every 10°C increase in temperature results in a 50% decrease in life for the capacitor. However, the reverse is also true, for every 10°C decrease in temperature the life is increased by a factor of two. Choosing the right power supplies can mean the difference between a highly reliable control system or a system where problems ultimately will surface.

Enclosure Size

The physical size and foot print of the power supply is not the only element in determining enclosure size. The engineer must also consider efficiency of the power supply and other components along with ambient temperature. Most leading enclosure manufacturers offer software to assist in determining the impact of heat on the enclosure size. The selection of a power supply with low operating efficiency can result in a more costly enclosure. If too much heat is generated inside the enclosure or if the ambient temperature also contributes to the internal temperature to a point where some form of cooling is necessary, this can also add cost to the overall control system.

De-rating Due to Heat

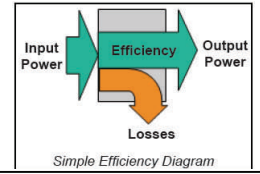
Depending on the ambient temperature inside your enclosure there may be a need to de-rate your power supply in order to maximize the life. The graph shown to the right is a typical curve for the PULS power supplies when the temperature exceeds 60°C and represents an approximate 2.5% / °C de-rating. Linear power supplies use very large transformers in their designs as well as additional components to improve the power quality, but the combination of these devices leads to much lower efficiency ratings and much more heat. Because of this heat, linear supplies must de-rate at a much lower temperature range or some method of cooling must be installed. Most linear supplies are also sold as an open chassis, so this and other factors must be considered when comparing the cost between the two different supplies.

Energy Savings

One other area that should be considered by the design engineer is the amount of energy consumption required to operate the load. The power supply which was rated 85% efficient and had 169W of lost energy would from a simplistic calculation use 1.7kW over a 10 hour work day or 8.5kW for a 5 day work week. As compared to the 93% efficient supply, the same usage would be 0.72kW for the same day or only 3.6kW for the week. Using an average kilowatt cost of 13¢ per kilowatt, the lower efficient power supply would cost approximately \$1.11 per week or \$58.00 per year versus 47¢ per week and \$24.00 per year for the higher efficient supply. Multiply this by the number of power supplies in a factory and the savings can be quite significant for a user over the life of the control system. The calculations above did not take into consideration the power factor of the supplies which can easily almost double your energy cost.

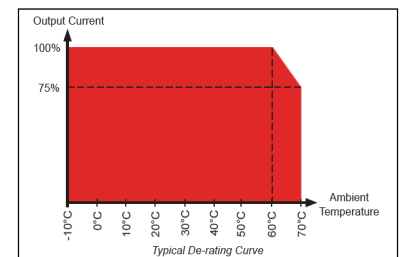
The PULS Advantage

By using PULS high efficiency power supplies it is possible to use a smaller power supply because no de-rating is necessary in most cases. The high efficiency keeps the power supply running cooler, does not add unnecessary heat to the cabinet, and overall energy saving can be achieved. These plus all the other features makes PULS the right choice for any application. How do competitive products compare with PULS?



$$\text{Heat Loss} = \left(\frac{\text{Output Watts}}{\text{Efficiency}} \right) - \text{Output Watts}$$

Simple Heat Loss Formula



Mtech Represents
the following fine manufacturers








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OUR OBJECTIVE

Mtech is a manufacturer's representative dedicated to providing O.E.M.'s and users with solutions to their factory automation applications. This objective is accomplished by integrating over 70 years of experience with state of the art products to fill our customer requirements.

REGIONS SERVED
TURCK, BANNER, AMC & PULS
Minnesota, Western Wisconsin, North Dakota, & South Dakota
EXLAR and HORNER
Minnesota, Western Wisconsin, North Dakota, South Dakota, Iowa, & Nebraska

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