

Review

Inside review

PLC, HMI and Inclinometers Combine

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Linear Position for Harsh Environments

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APPLICATION

Piles and Bore Holes

Ensuring maximum load bearing capability



TECH

Cost Cutting

Problem solving at a Hydraulic Hose Assembler



APPLICATION

A Goodyear

Automating a new home for the Goodyear blimp



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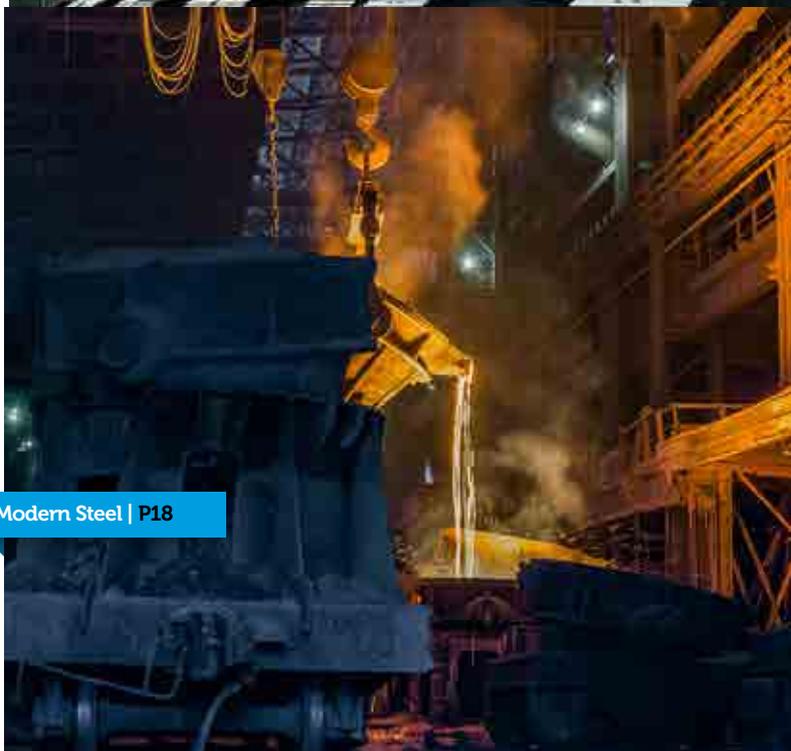


"A New Home" | P06



Inclinometer
 Comparing static and dynamic inclinometers

Shock & Yaw | P14



Modern Steel | P18

Cost Cutting

We look at the problems faced by a major hydraulic hose assembler, and the ways the Emolice team helped to solve them

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STARTING PRICE
• Bespoke solution from
Emolice, POA for similar

£ SAVINGS

▲ The financial case for implementing a closed loop system in this application was compelling. The combined costs of producing a batch of 350 hoses per shift was not limited just to the scrap material and lost labour.

Forming part of a JIT (just in time) manufacturing service to their customer meant loss of downstream productivity for them too.

Hydraulic hose assembly is fundamentally simple. The first stage is to cut the hose to the length determined by the works order. Taken straight from a reel, the hose is then fed manually through an aperture below the saw until it reaches a backstop. The backstop determines the hose length and is manually set by the operator according to the length of hose required. Once the backstop is reached the saw cuts the hose and the process is repeated...up to 350 times per shift.

The process works flawlessly,

but is subject to the most common manufacturing flaw; human error.

If the backstop is set incorrectly then the entire batch is scrapped.

However, the downstream complications of delaying some of the most demanding manufacturers' production processes can be greater.

To remove the possibility of incorrectly sized hoses, Emolice were invited to review the assembly process and make recommendations. The solution - a closed loop linear measurement system integrated with the works order system.

THE SOLUTION

MAGNETIC LINEAR SENSING SYSTEMS

The solution used the Elgo IZ16E-600 wireless linear measuring system.

A magnetic tape was mounted along the length of the saw with an incremental sensor head moving along the tape to wirelessly send the exact position of the backstop to the Elgo IZ16E-600.

The operator is able to see the backstop position from their workstation and visually compare with the required length on the works order.

Additionally, bespoke software written and delivered by Emolice compares the actual position of the backstop with the required length of the hose from the works order. If the two values match then a relay energises the saw allowing the cut to be made. If they don't match then the cut is prevented.

LATEST TECH:

Take a look at the Elgo range:
<https://goo.gl/Gdfvpt>



ELGO magnetic linear measurement systems are the preferred choice for machine builders worldwide



01 IZ16E-600

- 7 digit LCD display
- Configurable display-modes: mm / m / inch
- Incremental and absolute measuring
- Interface: RS232 / RS485 / RF868 MHz

Elgo indicators use magnetic technology to provide accurate linear position feedback

Position Indicator

AZ14E / IZ14E

The battery operated absolute (AZ14E) or incremental (IZ14E) mini position indicator is the smallest design in the series of Elgo single axis, battery position indicators. They combine an indicator and magnetic sensor, which is connected to the indicator via a drag-chain suitable cable. With extensive programming options they are particularly suitable for small new machines and machine modernisation.

Price Range



AZ16E / IZ16E

The battery operated absolute (AZ16E) or incremental (IZ16E) position indicator is the most popular design in the series of Elgo position indicators. They combine an indicator and magnetic sensor and with up to 4 years battery life and are ideal for manual slides, guiding and stop systems, where no power supply is available or the position indicator is moved with the axis and a power supply cable cannot be used.

Price Range



ELGO
ELECTRONICS

AZ17E / IZ17E

The battery operated absolute (AZ17E) or incremental (IZ17E) position indicator uses a dual height display for easy viewing. Like the other AZ/IZ products, they combine an indicator and magnetic sensor and with up to 4 years battery life and are ideal for manual slides, guiding and stop systems, where no power supply is available or the position indicator is moved with the axis and a power supply cable cannot be used.

Price Range



Z25

The compact Z25 is a mains powered single axis position indicator with a 10 mm high LCD display.

The Z25 can be connected to conventional rotary encoders as well as ELGO magnetic linear incremental and absolute encoders.

Typical applications include back stop adjustment, length and angle or speed measurement.

Price Range



Z50

The Z50 single axis universal position indicator can be connected to all absolute or incremental ELGO sensors regardless of signal type. This allows selection of a wide range of sensor resolution and accuracies.

The Z50 universal display can be used where distances, lengths, angles and speeds have to be measured. When used in woodworking machines typical applications are: backstops and rip fences on saws or depth measurement in drilling and grinding machines.

Price Range



Z60

The Z60 tri-axial universal position indicator can be connected to all absolute or incremental ELGO sensors regardless of signal type. This allows selection of a wide range of sensor resolution and accuracies.

The Z60 universal display can be used where distances, lengths, angles and speeds have to be measured in 1-3 axes.

Price Range



The Goodyear logo is displayed in yellow text on a dark blue rectangular background. The logo consists of the word "GOODYEAR" in a bold, sans-serif font, with a stylized winged foot symbol integrated between the "Y" and "E".

GOODYEAR

A large, inflatable structure shaped like a Goodyear tire is the central focus of the image. It is positioned on a dirt field under a clear blue sky. The structure is primarily grey, with a prominent yellow and blue stripe running horizontally across its middle. The top of the structure is divided into several vertical sections, each with a blue and yellow stripe. The overall appearance is that of a giant, inflated tire.

A New Home

“Breadth of products, engineering & integration expertise plus on time delivery were critical requirements”

The Goodyear Tire & Rubber Company recently unveiled major new facilities at its Airship Operations base in Carson, USA.

The new facilities include a new hangar for the Goodyear Blimp Wingfoot Two, which arrived in Southern California at the end of 2017.

The site for the new hangar is a closed landfill site which means that only shallow grading of the site is possible. This shallow grading limits the weight that can be carried by the slab and prevents the construction of a traditional hangar. Instead, the hangar is built out of 73 miles of partially translucent polyester fabric and is almost nine-stories tall and longer than a football pitch.

Additionally, due to the explosive risk of methane released from the old landfill grounds, state sanctioned remedial plans for the site called for electrical and electronic equipment to be certified for use in potentially explosive gaseous environments.

The manufacturer of the incredible inflatable hangar is a UK based technology company specialising in inflatable buildings. They approached Emolice to help with the design and integration of the position control system used to raise and lower the hangar door.

The final solution used ATEX certified Profibus absolute rotary encoders from POSITAL to control the position of motors that open and close the ‘eyelid’ door via a proprietary PLC. Emolice led the mechanical integration of the encoders with the chosen motors and ensured that the encoders were specified, manufactured and delivered within 2 weeks of the start of the project. The new hangar was successfully installed in mid December 2017 and is now in full use.

A Focus On ATEX

Our guide to key products for ATEX Zones 1 and 2

THE POSITAL range of ATEX products is already well known and field proven to be not only ATEX

compliant but also rugged enough to cope with some of the most

demanding of applica-

tions. Whether it's offshore

or onshore oil & gas, an

exploration platform or a

refinery, POSITAL explosion

proof IECEx and ATEX cer-

tified products can provide

accurate positioning and speed monitoring in

pipe handling equipment or in blow out preven-

ter (BOP) systems.

For mining applications, complicated machines such as mining drill rigs, excavators and mobile hammering systems must perform

flawlessly under the harshest conditions. For these applications the ATEX certified IXARC rotary encoders can be used to provide precise positioning of drill heads and masts. Single and dual axis POSITAL TILTIX inclinometers further equip

"Proven solutions for ATEX Zones 1 & 2 that provide Rotary, Linear and Angular measurements"

operators with essential information for platform levelling and arm positioning.

Finally, linear measurement in ATEX zones is made possible with the POSITAL range of draw wire linear encoders.

OPTIONS

ACCURACY

$\leq 0.09^\circ$ (Magnetic), $\leq 0.022^\circ$ (Optical)

COMMUNICATIONS

Position output in almost every available industrial interface

REVOLUTION

Singleturn, Multiturn: 12 bit (4096 rev), Multiturn: 14 bit (16384 rev)

RESOLUTION

13 bit (8192 Steps / 0.044°)
16 bit (65536 Steps / 0.005°)

CONNECTION

Multiple connection types

Connectivity

The IXARC ATEX encoders are available with Push-Pull, RS422, SSI, Analog, Profibus, Profinet, CANopen, Device-Net, EtherCAT, EtherNET / IP interfaces.



"Proven, market leading ATEX encoders"

IXARC ATEX

Rotary Encoder

CERTIFICATION

Group I (Mining) : Ex I m2 Ex e mb I mb

Group II (Above Ground Operations) : EX II 2G Ex e mb IIc TX Gb (explosive gases) EX II 2D Ex tb IIIB T80°C Db (flammable dust)

KEY STATS

Absolute:

Multiple Interface Options: analog, Ethernet, Fieldbus, Parallel, Serial Singleturn and multiturn
Resolution up to 16 bit
Optical / magnetic technology

Incremental:

A, B, Z, and Inverted Signals as HTL (Push-Pull) or TTL (RS422)
Any Pulse Count to 16384 PPR
65384 Edges Quadrature
Programmable for Flexibility
Magnetic measuring Principle

LINARIX

ATEX Linear Encoders

CERTIFICATION

Group I (Mining) : Ex I m2 Ex e mb I mb

Group II (Above Ground Operations) : EX II 2G Ex e mb IIc TX Gb (explosive gases) EX II 2D Ex tb IIIB T80°C Db (flammable dust)

KEY STATS

Measurement lengths ranging from 1 m to 30 m [3 to 98 ft]

Position output in almost every available industrial interface both analog and digital as well as incremental and absolute

Measure linear motion by displacing a stainless steel wire wound around a wire drum that actuates the rotary encoder



“Multiple housing types are available for the LINARIX range”

Connectivity

The IXARC ATEX encoders are available with Push-Pull, RS422, SSI, Analog, Profibus, Profinet, CANopen, DeviceNet, EtherCAT, EtherNET / IP interfaces.

“ $\pm 80^\circ$ (Dual Axis) ,
360° (Single Axis) ”



Connectivity

The TILTIX ACE & ACM are available with CANopen, DeviceNet, Analog, SSI, SaE J1939 and ModbusRTU interfaces

TILTIX ACE & ACM

ATEX Inclinometers

CERTIFICATION

Group I (Mining) : Ex I m2 Ex e mb I mb

Group II (Above Ground Operations) : EX II 2G Ex e mb IIc TX Gb (explosive gases) EX II 2D Ex tb IIIB T80°C Db (flammable dust)

KEY STATS

High Vibration and Shock Resistance

$\pm 80^\circ$ (dual axis) or 360° (Single axis)

Rugged aluminium and 316 Stainless Steel Housings

Accuracy 0.1° and resolution 0.044°



Mission Critical Motion

PROFISafe is becoming the de facto communication method for mission critical applications

AT POSITAL they have been busy expanding their family of IXARC absolute rotary encoders to include models explicitly designed for use in safety-critical motion control systems. The new encoders feature redundant measurement elements and are certified to Safety Integrity Level 2 (SIL 2) and Performance Level d (PL d). They feature a PROFINET communications interface and support the PROFISafe protocol. PROFISafe-based control systems are used for critical applications such as industrial robots or material handling equipment, where loss of control could result in hazardous situation. The encoder transmits a safety position and/or safety velocity value.

A Quick look at the IXARC specification reveals that POSITAL have checked all of the option boxes as standard; Reliable Redundant Magnetic Measurements, Safety Integrity Level 2 (SIL 2) and Performance Level d (PL d) approvals, High Vibration and Shock Resistance design, Saltwater Resistant Protection Class up to IP69K, Status LED's, Counts up to 4,096 Absolute Turns, Maximum Resolution of 13 bit, Real Time Accuracy of up to $\pm 0,2\%$, finally Clamp, Synchro and Blind-Hollow Flanges can be specified.



Every issue we look at a range of motion products. This issue we look at ROTARY

Encoders

ATEX / IECEx Encoders

Rated for Zones 1 & 2I, Oil and Gas as well as Mining. Compatible with most PLC's, available with a wide range of outputs including Profibus, DeviceNet and CANopen. To ensure mechanical integration is simple, ATEX encoders are offered with a variety of mounting options

Price Range



Fieldbus Encoders

Designed to make integration simple in both automation and mobile machine applications. Fieldbus encoders communicate over most popular interfaces from Profibus to DeviceNet as well as CANopen and J1939. A broad range of mechanical mounting and connection options ensure there a solution for every application.

Price Range



Push Button Programmable Encoders

With no external programming device required to scale the output, this cost effective solution is available with an SSI output as well as industry standard current and voltage outputs. A broad range of mechanical mounting and connection options ensure there is a solution for every application.

Price Range



Programmable Encoders

For total flexibility, programmable encoders allow output parameters to be defined exactly to match the application. Available in both absolute (SSI output) and incremental models, variables include pulses per revolution or resolution and are set using the UBIFAST programmer which can be operated via any WIFI enabled device.

Price Range





Stainless Steel Encoders

Designed for food & pharmaceutical applications where exposure to moisture, fluid or water is a possibility. With IP ratings from IP67 to IP69K , stainless steel encoders are also perfect for marine applications such as winch and crane monitoring.

Price Range



PROFISAFE Encoders

Designed for use in safety critical motion control systems, featuring redundant measurement elements certified to Safety Integrity Level 2 (SIL 2) and Performance Level d (PL d). They feature a PROFINET communications interface and support the PROFIsafe protocol.

Price Range



SSI Encoders

One of the widest range of SSI encoders available on the market. Available with Binary and Gray code outputs. multiturn and single turn models are available with a variety of resolutions and mounting options.

Price Range



CANOpen / SAE J1939

Mobile machine encoders available with a choice of technologies (magnetic and optical) , broad range of mechanical mounting and connection options ensure there a solution for any mobile machine application.

Price Range



Magnetic Encoders

Reduced moving parts has created a more robust encoder at reduced cost. Utilising Wiegand energy harvesting to generate the energy necessary to remember it's position during a power out, these encoders have redefined encoder reliability.

Price Range





Shock & Yaw

NEW ARRIVALS:
The POSITAL AKS gyro compensated inclinometer

Tough TILT

Gyrocompensated inclinometers excel in environments subject to shock, vibration and acceleration, here's why !

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OUR RATING



SUMMARY
Best in class compensated inclinometer. No longer any need for off sensor processing to compensate for vibration, shock and acceleration.

Emolice has introduced the new AKS dynamic inclinometer from POSITAL. This TILTIX-inclination sensor measures the angle of an object dynamically whilst it is in motion. The new inclinometer combines an electromechanical accelerometer with gyroscopes and guarantees accurate measurements even when the sensors themselves are subject to strong acceleration, shock and vibration.

TILTIX inclination sensors are built based on MEMS accelerometers. These MEMS sensors monitor the effect of gravity on a small mass that hung is to an elastic substructure.

Unfortunately, acceleration or movement of the object to which the sensor is attached (for example if the inclinometer is attached to a vehicle) can have a disruptive effect on the accuracy of the inclinometer. By adding a set of electromechanical gyroscopes to the inclinometer, the unwanted effect of the acceleration can be negated.

Thanks to this approach, the new dynamic TILTIX inclinometer is ideal for use in applications that are subject to sudden movements, shocks or vibrations, for example test & measurement applications, construction machines, machines used for mining, cranes and agricultural vehicles.

The new AKS dynamic TILTIX inclinom-

PROS/CONS

- ▲ Good accuracy and resolution.
Robust package for tough applications
- ▲ Multiple interfaces on the short term roadmap..
- ▼ Ever so slightly more expensive than standard inclinometers.

eter has a measuring range of $\pm 180^\circ$ over two axis and covers the full range of motion. Currently the CANopen communications interface is supported. Analog, SAE J-1939 and Modbus outputs will follow soon.

With a static accuracy of 0.3° and a resolution of 0.01° , the POSITAL AKS has more than enough capability for mobile machine applications

The full specification of the AKS inclinometers is:

- Resolution: 0.01°
- Accuracy: 0.3° (static)
- Accuracy: 0.5° (dynamic)
- Cycle time: 5 ms
- Maximum measuring range: $\pm 180^\circ$
- Measuring: 1 or 2 axes
- Horizontal and vertical option
- Supply current: 10 to 30 V
- Operating temperature: -40 to 85°C
- Shock resistance: up to 100 g
- CANopen interfaces (Profile DS-410)

Interpreting Common Specs

• **Sensor cycle time:** This is the internal cycle time of the base sensor.

• **Interface cycle time:** This is the cycle time the position value is transmitted via the communication interface. The interface cycle time can be easily adjusted by the customer at the interface level.

• **Absolute accuracy:** The absolute accuracy is the worst case deviation between measured position and the actual position within the defined range.

• **Offset:** When the inclinometer is positioned at the zero level, the output will show a small deviation. This error at the zero level is referred to as offset error.

• **Dynamic accuracy:** This accuracy is determined the same way as the absolute accuracy, only that the device is exposed to external vibrations and accelerations.

• **Resolution:** This is the smallest possible measurement step

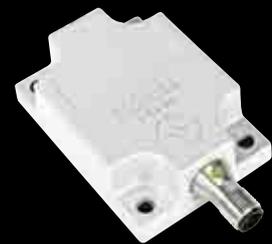
• **Hysteresis:** The definition of a hysteresis is that the output value of a system is not only dependent from the actual input, but also from past inputs. For inclinometers this means that the measured tilt angle is also dependent on the past position. There will be a small difference whether the inclinometer is tilted from 0° to 10° or from 20° to 10° . This difference is described by the hysteresis.

• **Temperature gradient:** This value describes the change of the measured tilt angle for a change in temperature.

• **Settling time:** This is a value that describes the dynamic behaviour of a system. The settling time defines the time the inclinometer signal needs to reach and stay within 5% of the final position.

Top 4
right now

Talking to the AKS Inclinometers.



1 CANOpen Interface

Digital Interface | Available Now |

CANopen is a high-level communication protocol and device profile specification that is based on the CAN (Controller Area Network) protocol. The protocol was developed for embedded networking applications, such as in-vehicle networks.

2 J1939 Interface

Digital Interface | Available Soon |

Society of Automotive Engineers standard SAE J1939 is the vehicle bus recommended practice used for communication and diagnostics among vehicle components.

3 Analog Interfaces

Analog Interface | Available Soon |

Typical Analog outputs include 0-10V, 0.5-4.5V and 4-20mA. Ideal for simple interfaces.

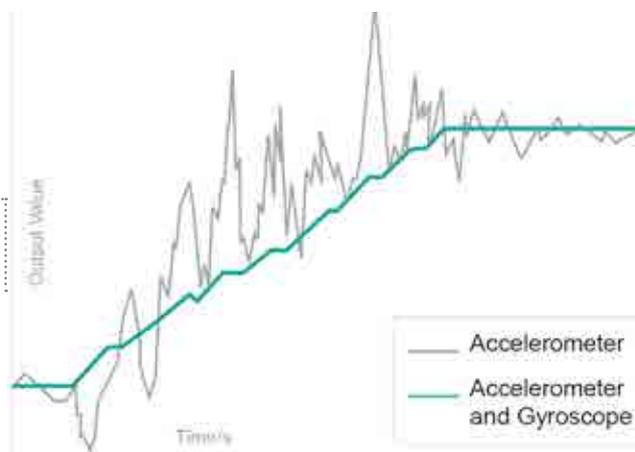
4 Modbus Interface

Digital Interface | Available Soon |

Modbus is a serial communications protocol. Simple and robust, it is now a commonly available means of connecting industrial electronic devices.

Comparison:

A standard inclinometer using accelerometer based MEMS technology is compared with the new AKS inclinometer



EMOLICE offer a broad range of single & dual axis inclinometers

Inclinometer

ADS / ACS Inclinometers

The TILTIX ADS and ACS series of single or dual inclinometers feature multiple interfaces including Analog Current, Analog Voltage, CANopen, DeviceNet, J1939, Modbus, RS232, SSI. They are available with accuracy / resolution of either 0.5deg / 0.1 deg or 0.1deg / 0.01deg.

Price Range



Heavy Duty Inclinometers

The TILTIX Heavy Duty ADS and ACS series of single or dual inclinometers feature multiple interfaces including Analog Current, Analog Voltage, CANopen, DeviceNet, J1939, Modbus, RS232, SSI.

They are available with accuracy / resolution of either 0.5deg / 0.1 deg or 0.1deg / 0.01deg and offer environmental protection to IP68/69K.

Price Range



ACE: ATEX & IECEx Intrinsically Safe Inclinometer

The TILTIX ACE Inclinometer is ATEX and IECEx certified for use in hazardous industrial areas.

The TILTIX ACE is available as a single or dual device and features multiple interfaces including Analog Current, Analog Voltage, CANopen, DeviceNet, J1939, Modbus, RS232, SSI.

Price Range



AKS Dynamic Inclinometer

The TILTIX AKS dynamic inclinometer is designed for use where external accelerations or vibrations would affect the reliable operation of standard static inclinometers. Available as a dual axis device, the AKS inclinometer is available with a CANopen interface, measurement range of $\pm 90^\circ$ and an accuracy of 0.3°

Price Range



Inclinometer Overview

Inclinometers, also called tilt sensors are designed to measure the angle of an object with respect to the force of gravity. These tilt or level meters determine pitch and/or roll angle and output these values via the appropriate electrical interface. Inclinometers are easy to integrate to an application, because there is no need for mechanical linkages other than just the installation itself – a real advantage for design engineers. POSITAL developed several inclinometer types to have a suitable solution for different applications for each industry. Accurate measurement of the degree of tilt or inclination from a horizontal position is very important for many motion control systems or to ensure safety.

- Well Protected up to IP69K
- Rugged and Compact Design
- Measurement Range $\pm 80^\circ$ (Dual Axis) or 360° (Single Axis)

Dynamic Inclinometers

These inclinometers are equipped with a 3D MEMS accelerometer and a 3D MEMS gyroscope. A smart algorithm combines the signal of the accelerometer and gyroscope to eliminate the effect of accelerations (e.g. due to rapid motion of the equipment), vibrations and shocks.

- Compensation of External Accelerations
- Clean Measurement During Dynamic Movements
- Measurement Range $\pm 90^\circ$
- Static Accuracy 0.3° , Dynamic 0.5°
- Interfaces: CANopen

Static Inclinometers

These inclinometers are equipped with a 2D MEMS accelerometer as a sensor cell. This type of inclinometer achieves a high accuracy in a static system or where significant external acceleration forces are not present.

- Accuracy 0.1° or 0.5°
- Interfaces: CANopen, Analog Current, Analog Voltage, RS232, SSI, J1939, DeviceNet

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APPLICATIONS

FEATURE

Modern Steel

"Breadth of products, engineering & integration expertise plus on time delivery were critical requirements"

The UK steel industry produces 11 million tonnes of steel a year. Whilst some steel processing plants continue to face an uncertain future, others that specialise in high-quality, high-value steel products continue to grow and invest in their infrastructure.

One such UK based producer is modernising their automation processes. A key part of the process that required updating was access to the vacuum degasser for scheduled maintenance and repair.

A vacuum tank degasser is used as part of a batch process to reduce the concentrations of unwanted dissolved gases in the liquid steel. Vacuum degassing takes place after the ladle (which is full of molten steel) has left the furnace and before the molten steel is poured into the ingots or introduced into the continuous casting process.

The vacuum degasser can be moved vertically on hydraulic lifters using a visual system to determine its' position. Wrap around gated pedestrian gantries allow access for maintenance and repair at regular intervals along the degassers' vertical travel. Interlocks on the gates prevent access when the degasser is not at the same level as the gantry floor, however the low resolution of the visual positioning system plus regular false readings caused by dust buildup means that the floor level cannot be guaranteed, causing a serious potential hazard. Mechanical switches were found to be unsuitable for determining the degasser position as lateral movement (during raising and lowering) exceeded the working tolerances of the switches.

During modernisation, Emolice were tasked with proposing an alternative solution to the visual positioning system to control hydraulic position.

Emolice proposed a solution using draw wire absolute linear encoders from POSITAL. The draw wire encoders were insensitive to the lateral movement of the degasser whilst it is raised and lowered. To provide redundancy, two encoders were specified with different interfaces (SSI and Profinet) and the outputs of the two encoders were continuously compared by the PLC.

The final redundant solution ensures that the gantry floor level is within +/- 1.5mm, a ten fold improvement in accuracy.

Draw wire encoders from POSITAL use their highly regarded Rotary Encoders

Draw Wire



Machined Metal Housing

The aluminium housing provides a reliable sensor ideal for industrial environments. Being both economical and compact, these are appropriate for a wide variety of applications. Available in 1.74 m [68.5 in], 3 m [118 in] and 6 m [236 in] measuring lengths.

Price Range



Plastic Housing

Unbeatable economic pricing in large quantities and a small footprint makes this tough draw wire encoders the preferred OEM customer selection. Well engineered mechanics in combination with POSITAL's fully digital rotary encoders means these draw wires do not lose accuracy even after one million strokes. Available in 2.4 m [94.49 in] and 7.5 m [295.28 in] measuring lengths.

Price Range





Extruded Metal Housing

This robust aluminium draw wire with flexible mounting options is suitable for demanding environments. Flexible mounting options make installation easy in a variety of applications. Suitable for applications that require high acceleration, up to 7g. Available in 3 [118 in], 5 [196 in], 10 m [393 in] and 15 m [590 in] measuring length.

Price Range



LINARIX Draw Wire Encoders

Many applications require linear motion to be monitored for system control or to ensure safety. With lengths ranging from 1 m to 15 m (3' to 49'), LINARIX draw wire sensors are available in many configurations to meet an application's requirements. Options include a wide variety of outputs (including analog, fieldbus and Ethernet variants), heavy duty housings and compact designs.

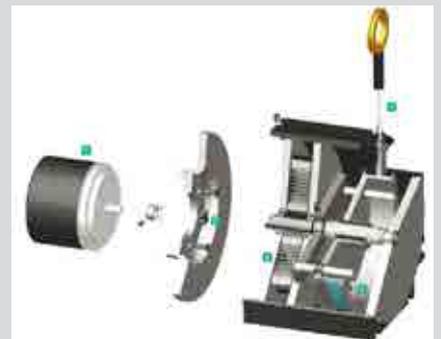
- Wide Selection of Measuring Lengths 1 to 15 m (3' to 49')
- Absolute Position Measurement with Resolutions up to 2 μ m
- High Linearity even with Long Cycle Times
- Low Cost yet Rugged Construction
- Scalable Analog Output to Fit Measuring Length

LINARIX Interfaces

The LINARIX range of draw wire encoders from POSITAL are available with a wide range of interfaces including: Analog, CANopen, Profibus, DeviceNet, J1939, Interbus, EtherCAT, Ethernet/IP, ProfiNet, Powerlink, Modbus+Ethernet TCP and SSI.

LINARIX Technology

POSITAL's LINARIX draw wire sensors measure linear motion by displacing a stainless steel wire (A) wound around a wire drum (B) that actuates the rotary encoder (C) coupled to it via coupling (D). A spring (E) is used to retract the wire in the housing. The encoder provides a proportional output. Measurements are highly accurate, reliable and the systems have very long lifetime.



The LINARIX line offers a wide range of measurement lengths ranging from 1 m to 30 m [3 to 98 ft] and position output in almost every available industrial interface both analog and digital as well as incremental and absolute. The line is featured with different mechanical options, housing materials and springs to enable you to always find the most suitable product for your application.

Creating bespoke measurement and control solutions requires a breadth of products and a depth of technical know how. From simple angle measurement, through to complex automation tasks, Emolice have the experience and expertise to help.



"Having been let down by our previous supplier, we had high expectations of Emolice and the solution they provided. They didn't disappoint !"

Piling Rig Alignment

Why a leading Construction Piling Contractor turned to Emolice for accurate rig alignment

In the world of construction, pile foundations are deep foundations, formed by long, slender, columns made from steel or reinforced concrete. They are typically used for large structures and in situations where the soil is incapable of preventing excessive settlement. They work by helping to transfer the load from structures above ground onto stronger, less compressible soil or rock that is deeper underground.

Most piles or foundation bore holes need to be drilled vertically. One method of creating the hole is to use an Auger (a drilling device that uses a rotating helical screw blade called a "flighting" to act as a screw conveyor to remove the drilled out material). For vertical pile foundations, the load bearing characteristics of the pile foundation requires that the column is drilled perfectly vertical (within specified tolerances). However, often the machine and boom carrying the Auger will not be level, so a measurement and control system is required to ensure that it is both vertical prior to drilling, and that it remains vertical during drilling or piling.

One such measurement and control system was required by a major construction piling contractor. The contractor had commissioned a number of new custom built piling rigs and were looking for a solution that would be able to withstand the

rigours of the construction environment but had the ease of use that would allow the machine operator to position the mast as quickly and accurately as possible.

As a result of their broad range of products and industry experience, Emolice were selected to design a system based on POSITALS robust range of heavy duty inclinometers to monitor the mast angle combined with a Unitronics Samba PLC + HMI to act as the in cab display.

Closely following the contractors brief, the team at Emolice programmed the Unitronics Samba PLC + HMI to read the signal from the inclinometer and display the output as a highly intuitive cross array. The solution was completed by housing the Samba in a custom machined robust aluminium enclosure to exceed the heavy duty demands of the construction environment.

The resulting solution was designed, built and commissioned in a month. Subsequent testing showed that both the accuracy and the usability of the system was far superior to the system that it replaced.

For further details on this application, or to talk to us about how we can help you with your application, contact us today at sales@emolice.com.



Every issue we look at a range of motion products. This issue we look at PLC HMIs

PLC & HMI

Vision™ series

An award-winning series of programmable controllers (PLC + HMI) , ranging from palm-sized controllers with onboard I/O to large-screen controllers with snap-in I/O. Vision is a true workhorse: reliable, versatile, field-hardened – a cost-effective All-in-One controller.

Price Range



UniStream® series

Powerful programmable logic controller with incredible HMI features and a built-in webserver. A completely modular and scalable hardware – backed by the most efficient programming software you have ever used. Execute high-end projects – on time and within budget.

Price Range



I/O Expansion Modules

Complete lines of local & remote I/O modules and COM modules are available for the Vision, Samba and M90/91 series.

Additionally the I/O & COM Modules for UniStream® (known as Uni-I/O and Uni-COM modules) can snap to the back of UniStream and provide local or remote I/O Expansion.

Price Range



Jazz® and M91™

Jazz® is an All-in-One PLC controller that is as affordable as a “smart relay” — full-function PLC combined with a textual HMI and keyboard, with up to 40 onboard I/Os.

M91™ is an affordable All-in-One programmable controllers: a smart PLC with a textual HMI and keyboard, plus onboard I/O configurations; expands up to 150 I/Os.

Price Range





Samba™ series

A perfect fit for any small machine or simple project that requires a true PLC controller and a high resolution HMI colour touchscreen. Samba™ programmable controllers offer a range of on-board I/O configurations. Offering a flat fascia, compliant with IP66/IP65/NEMA4X

Price Range



UniLogic® for UniStream®

UniLogic® Studio is All-in-One software for hardware and communication configuration, Ladder and HMI applications which sees typical users slash their development time by up to 50%.

The power of UniLogic is in its design. Built-in, context-sensitive editors enable the user to:

- Write Ladder or C functions,
- Create beautiful HMI screens and interactive web pages,
- Instantly translate screens from one language to another,
- Easily track data and display it live via trends and gauges or export it to Excel,
- Raise multi-level Alarms and send notification via SMS or email,
- Run Recipes, and implement a broad range of industrial communication protocols.

VisiLogic™ for Vision™ and Samba™

Easily build applications with Drag & Drop, All-in-One software enables you to:

- Develop your PLC and HMI applications in one environment
- Configure Hardware & Communications
- Establish modem and data communications
- Test and debug your programs
- Software Utilities Suite: remote access and data management tools
- Control your application remotely from anywhere at anytime

Unitronics Added Value

All Unitronics software & utilities, plus updates are provided at no extra charge.

Personalised Tech Support & Forum membership are also provided at no charge.

Emolice Added Value

As Unitronics' authorised UK distributor, Emolice can offer the full range of Unitronics PLCs & HMIs, plus we offer first line support for installation and programming.

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Harsh Machines

Harsh LINEAR

Rugged Sensors for Processing Machinery

AVAILABLE FROM
Emolice Technology, or
visit www.emolice.com

PRICE
• POA

OUR RATING



The wood processing industry is a great example of an industry that requires a wide range of machinery that must operate under harsh conditions while providing accurate performance. Downtime and lost productivity are expensive, and linear position sensors are critical components in maintaining an efficient operation.

The sensors that help determine position and provide motion feedback for the machines critical to the operation must offer robustness, reliability and flexibility as well as easy troubleshooting and replacement to effectively meet production requirements.

New machine designs put increasing demands on position sensors as the loads and speeds increase with productivity, whilst machine owners look to extend the life of older machines by retrofitting more robust and reliable linear position sensors.

MTS Temposonics® linear-position sensors offer an excellent solution for high reliability under harsh environmental conditions. The High Vibration Resistance option (HVR) increases the vibration tolerance from 15g to 30g (10-2000 Hz). Additionally, excellent immunity to contamination and electromagnetic interference ensures smooth sensor operation without control errors and maintenance expenses from downtime.

Utilising a modular design allows the sensor cartridge, (consisting of the electronics head and sensing rod), to be removed from it's outer protective pressure pipe assembly. This method allows easy exchange of the sensor cartridge while the pressure seal is maintained, avoid possible oil spillage and contamination.

The Temposonics® range of industrial sensors are available from Emolice now.

HIGHLIGHTS

- Reliable linear-position feedback
- Rod-style sensors for hydraulic cylinders
- Shock and vibration resistance
- Simultaneous multi-position capability
- User friendly status and diagnostic LED display
- Field programmable with remote diagnostics



SENSORS

SERIES QUICK GUIDE

E

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GB

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FEATURES

Velocity measurement				•	
Multi-position measurement	•	•		•	•
Programmable sensor parameters		•	•	•	•
Diagnostic LEDs		•		•	
Redundant version		•		•	

OUTPUT

Analog – Current	•	•	•	•	•
Analog – Voltage	•	•	•	•	
Start/Stop	•	•			
PWM		•			
SSI	•		•	•	
Profibus				•	
CANbus	•			•	•
DeviceNet				•	
EtherCAT®				•	
EtherNet/IP™				•	
Powerlink				•	
Profinet				•	
IO-Link	•				

MINIMUM STROKE LENGTH

25 mm (1 in.)			•	•	•
50 mm (2 in.)	•	•			

MAXIMUM STROKE LENGTH

1500 mm (60 in.)	ER				TH (SIL 2)
2540 mm (100 in.)	EH, EE	GTE		RT4	
2900 mm (114 in.)		GT			
3000 mm (118 in.)	EP, EL, EP2, ET				
3250 mm (128 in.)			GB		
5080 mm (200 in.)		GP		RP, RD4	
7620 mm (300 in.)		GH		RH, RS	TH
20000 mm (787 in.)				RF	

Based on magnetostrictive technology, the MTS Temposonics® range has led its field for >25 years

Linear Sensors

R-Series

The Temposonics® R-Series is designed for advanced motion control applications. With a variety of housing styles and electrical interfaces, the R-Series can be integrated into a wide range of applications. They have a modular construction and are extremely robust. The double-shielded design assures the best immunity against EMI. Whether it is a rod version (RH), profile version (RP), has detached electronics (RD4), built-in redundancy (RT4) or a flexible rod (RF), the R-Series is a highly compelling sensor solution. For extremely harsh environments MTS Sensors offers the RS sensor with IP69K protective housing.

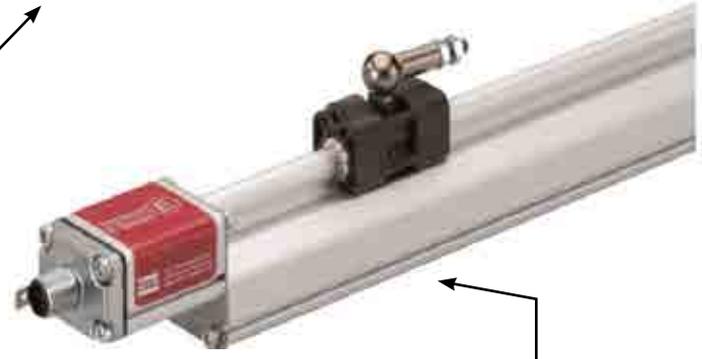
Price Range ★★★★★



G-Series

The Temposonics® G-Series provides high durability and accurate position measurement solutions in harsh industrial settings. The sensor element is installed in a pressure-resistant stainless steel rod or aluminium profile. A double-shielded housing protects the electronics and offers excellent EMI immunity. The GT2 / GT3 and GTE models feature multiple independent measuring systems with each measuring system having its own channel with sensor element, power and evaluation electronics and output signal. The GTE model is embedded in cylinder.

Price Range ★★★★★



E-Series

The Temposonics® E-Series are compact sensor models suitable for situations where space-constrained mounting is a critical factor. They offer different designs to meet the needs of various industrial applications including ATEX and in-cylinder variants.

Price Range ★★★★★

sensors

T-Series

Temposonics® T-Series are designed for hazardous working environments, where they may have to deal with flames, caustic substances and potentially explosive atmospheres (such as chemical plants, offshore oil / gas rigs, etc.). They are the first linear position sensors in the industry to meet SIL 2 standards. In addition, they are fully compliant with NEC, CEC, ATEX and IECEx Class I, II, III Division 1, Division 2 and Zone 0/1, Zone 1, Zone 2, Zone 21 and Zone 22 safety certifications covering the protection types "flameproof" and "increased safety".

Price Range



GB-Series

The Temposonics® GB-Series is designed to be incorporated into hydraulic cylinders. The flat, compact electronics housing facilitates deployment in restricted spaces. They have high pressure resistance, strong immunity to EMI, ability to operate in temperatures up to +100 °C and optional remote monitoring.

Price Range

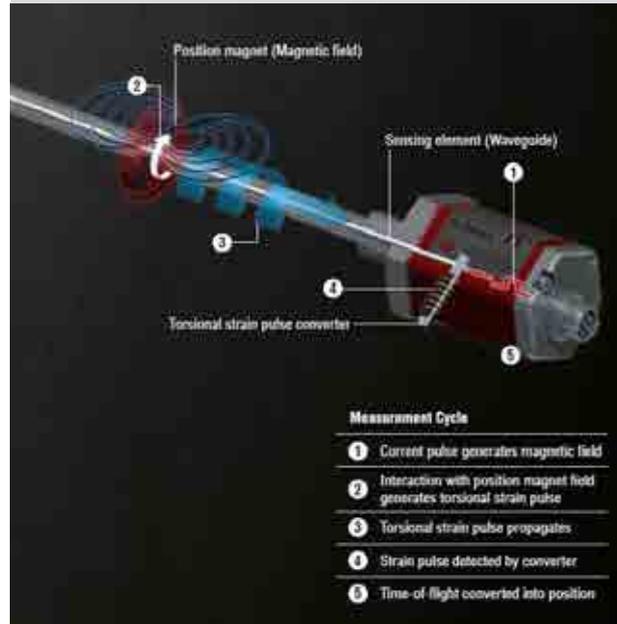


Magnetostriction Technology

The absolute, linear position sensors provided by MTS Sensors rely on the company's proprietary **Temposonics® magnetostrictive technology**, which can determine position with a high level of precision and robustness.

Each **Temposonics®** position sensor consists of a ferromagnetic waveguide, a position magnet, a strain pulse converter and supporting electronics. The magnet, connected to the object in motion in the application, generates a magnetic field at its location on the waveguide. A short current pulse is applied to the waveguide. This creates a momentary radial magnetic field and torsional strain on the waveguide. The momentary interaction of the magnetic fields releases a torsional strain pulse that propagates the length of the waveguide. When the ultrasonic wave reaches the end of the waveguide it is converted into an electrical signal. Since the speed of the ultrasonic wave in the waveguide is precisely known, the time required to receive the return signal can be converted into a linear position measurement with both high accuracy and repeatability.

The **Temposonics®** technology, based on magnetostriction, does not rely on moving parts and is not exposed to mechanical stress. Therefore, the sensors exhibit considerably longer lifespans and much higher reliability when compared to other technologies, even in harsh working conditions. Furthermore, since the output from sensors with **Temposonics®** technology corresponds to an absolute position, rather than a relative value, there is no need to recalibrate sensors.



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An Interview With...

Benny Magrafta, Head of Unitronics' R&D Software Department, talks to Emolice about Unitronics and the new UniStream 5"

EMOLICE

Emolice are the UK approved distributor for Unitronics PLC & HMI products including the Jazz, Samba, Vision and UniStream products.

As a technical stocking distributor, Emolice can offer a wide range of support for the Unitronics products including next day delivery, first line technical support, training, service and repair.

EMOLICE: Unitronics is a name that is gaining considerable industry recognition. How old is the company? What were the first products and how did it develop?

Benny Magrafta: I joined Unitronics the same year the company was founded, in 1989. Our original goal was to execute turn-key automation projects using PLCs manufactured in-house. Each project has its requirements – and its problems. We were a young, creative startup, and so we believed in the 'think outside the box' approach. This creativity is embedded in the company's DNA. It is why Unitronics has developed ground breaking, award-winning products in the realms of both hardware and software, and why we have a reputation as innovators in the field of industrial automation.

I am proud to be a part of Unitronics – today, our controllers are marketed via a global distribution network of over 160 distributors in over 50 countries.

EMOLICE: Judging by appearance alone, Unitronics products do not seem to be typical PLCs. Your new UniStream 5" is a good example. What is the concept behind this?

Benny Magrafta: True – our controllers are not typical in appearance. In those early years, an HMI was a few buttons and maybe a single-line text display. It was clear to us that the HMI was the window into the application and the absolutely best way to improve op-

erational efficiency. And so we created what we called the "OPLC" (Operator Panel + Programmable Logic Controller).

Today, we call them All-in-One PLC + HMI controllers. As far as I know, Unitronics was the very first company to create and manufacture such programmable controllers. Our products are based on this concept, and so they do not 'look' like typical PLCs – the front contains the HMI panel, the rear the PLC, and our controllers generally offer either built-in or snap-on I/Os. Today, of course, the HMI is generally a colour, resistive touch-screen.

Our new UniStream 5", like most Unitronics controllers, is a single, convenient, integrated device that you install to serve as both operating panel and PLC – that means reduced wiring, and eliminates the hassle of programming to establish PLC-to-Panel communication.

EMOLICE: How does the UniStream 5" compare in terms of functionality?

Benny Magrafta: Don't be fooled by the compact size! UniStream 5" is a member of our UniStream series – powerful PLCs, powerful HMIs, embedded with multi-processors and multi-O/S (LINUX & RTOS). They differ in HMI screen size, 15.6", 10.4", 7" and now 5" – but all offer a rich range of built-in functionality.

Let's look, for example, at our set of advanced Data Tools. The Data Sampler records dynamic application

data, say, tracking multiple temperature values, which UniStream regulates via embedded, auto-tuned PID. You can display the running values on the HMI screen using Trend – or Gauge – widgets. You can easily log those values into Data Tables, where you can organize and manipulate data via Ladder, or let the user do it via HMI. The PLC can export them to Excel, attach them to an email and send it – or export the values into Data Recipes, to control dynamic, complex production processes.

You can do the same via your web browser – UniStream includes an embedded Web Server. Or, use your favourite VNC app to view and operate the HMI program remotely. Or take Alarms, easily configurable, multi-level Alarm displays that are compliant with the ISA standard, ANSI/ISA-18.2-2009, or UAC – multi-level User Access Control – that prevents unauthorised access.

EMOLICE: Software is always an important factor. What would you tell a potential user, who is not familiar with your products, about the concepts guiding your software development?

Benny Magrafta: As the head of Software R&D, my guiding concept is Keep It Simple. Unitronics software is All-in-One, to match our controllers. You build your control program, design HMI screens, configure hardware and implement communications in one simple environment.

"UNITRONICS WAS THE VERY FIRST COMPANY TO CREATE AND MANUFACTURE [ALL IN ONE] PROGRAMMABLE CONTROLLERS"



Benny Magrafta

UniLogic, the software for UniStream, is designed to slash development time in half. Here are some features that make it a true time-saver:

Design and Re-Use Paradigm: You build Ladder and C functions, design HMI screens, create Web pages, and save them in a Library to reuse in other projects.

Tag Database + Structs: In addition to user-created tags, UniLogic automatically creates structs – data tags of different types organized into a single unit – to simplify configuring and managing hardware, communication, and complex functions such as PID.

Drag-and-drop Ladder: Elements snap into place for quick programming, aided by Intellisense; typing a few characters rapidly locates elements and assigns tags.

Drag-and-drop Graphics Library, User Controls, Widgets: Drag and drop elements to easily design attractive HMI screens and complex Web pages. Media widgets make it simple to display .pdf files or run videos on the HMI.

Multi-language support: it is simple to integrate translated languages, and the HMI display language can be switched in an instant.

Communication via configuration, not programming: for protocols such as MODBUS, CANopen, and EtherNet/IP, plus the Message Composer that enables communications with devices such as frequency converters, bar-code readers, and printers via Ethernet, CANbus or serial

3rd-party protocol.

EMOLICE: What industrial sectors do your products serve? How about special requirements, e.g. for robustness under environmental conditions?

Benny Magrafta: Our controllers target a broad range of sectors: water technologies, pumps, oil & gas, power and energy, packaging, F&B – they have even been integrated into Data Centres. Many of our products are certified for hazardous environment standards, CFR-21.11, and F&B spray-and-wipe industry standards.

EMOLICE: Industry 4.0 is an important issue, growing in importance every day. Which functionalities are built into your product range to support your customers in the age of 4.0?

Benny Magrafta: UniStream supports Industry 4.0 via its advanced communication features. Since the controller supports SQL Client, it can communicate via existing Ethernet infrastructure to interface with factory ERP/MRP servers. You can run tag, struct, array, and complete table queries.

You can also access your controller via VNC – or web browser – and control it from a remote location. Ethernet interfaces and TCP/IP support also provide access to the PLC for file transfers (FTP) and email support, so that the PLC can send messages directly to personnel. SNMP support enables you to integrate UniStream into the IT infrastructure, and manage it as an IT asset.

We have more features under development – this is a major focus of activity!

EMOLICE: The issue of Customer Support plays an important role in selecting new products. What is your philosophy in this field?

Benny Magrafta: Our R&D team works hand-in-hand with our support team to implement Unitronics policy of customer care. We provide personalized support, delivered by actual people – our customers never go through a maze of automated answers. Call us by phone, send us an email, or post a question in our lively Tech Support forum – your questions are answered by a member of the Unitronics team.

EMOLICE: Is there anything else you would like to tell our readers?

Benny Magrafta: I cannot stress this enough: selecting the manufacturer that stands behind a brand of controllers is a major decision. It is every bit as important as your CPU and I/O requirements. Your selected brand must have a complete, full product range that can meet the requirements of your customers, and meet the standards applicable to their sector. Check that the manufacturer provides a high level of customer care, that support, whether technical or sales, is easily available and prompt.

When you purchase a PLC, remember that you are also selecting the company that stands behind that PLC – and that this decision, over the long run, can have a major impact on your success in industrial automation projects.



UniStream 5" Powerful programmable logic controller with high quality HMI touch screen.

Multi-function in a superbly compact hardware profile:

PLC+HMI+I/Os built into a single unit.

We take a look at the 4 key considerations when looking to invest in a new PLC

Highlighted



About Unitronics

Unitronics designs, manufactures, and markets quality PLCs for the global market. Easy to use, efficient, and affordable, their products have been automating processes, systems, and stand-alone applications since 1989.

Unitronics' field-proven PLCs automate hundreds of thousands of installations in diverse fields: petrochemical, automotive, food processing, plastic & textile, energy & environment, water & waste water management – anywhere automated processes are required.

Did You Know

Unitronics support their customers with some of the widest range of learning and online support in the industry?



Find out more at www.emolice.com

"Nobody Gets Fired.."

We all know the saying, but buying the right PLC is about more than choosing the household name..



Automation control projects, no matter how large or small, commonly start with the following specifications:

"The system shall fill all requirements, function with perfect efficiency, be perfectly interoperable with all existing devices, require zero maintenance, and cost nothing. In addition, the system must be completed by Wednesday!"

Speed is crucial for success in a field with demanding requirements and crushing competition.

As an engineering professional, you can certainly work with a variety of devices from a number of PLC manufacturers—however, most of us have a preferred brand, a platform that we return to time and time again.

This is because Familiar is Fast, but

Familiar is not necessarily best. You know the hardware range. You know the software. You know what to expect—and you have the sales rep on speed dial.

For these reasons, selecting the manufacturer that stands behind a brand of controllers is a major decision. It is every bit as important as your CPU and I/O requirements.

"For small to medium scale projects, the licence free software is compelling."

PROS/CONS

- Programming software and all future updates are included with the purchase of all Unitronics PLC & HMIs.

1. The Importance of Breadth

Breadth | Memory | CPU | Compliance | Integrated HMI | Onboard I/O



Every application is unique, for that reason a complete, full product range is required. PLCs, for example, must be able to supply sufficient memory to support I/O, log and manipulate historical data, as well as execute the control program. Where execution speed is critical, the CPU processing speed must be considered as well. Which standards apply to the application? Does the application need to comply with hazardous environment standards, CFR-21.11, or the spray-and-wipe standards of the food and beverage industry? User familiar with mobile phone technology desire HMI colour touch-panels to provide the interface between operator and system. In cases where space is at a premium, PLC + HMI all-in-one controllers have a distinct advantage. Specifying onboard or snap-on I/O modules can save space and greatly reduce wiring.

2. Data Communication & More

Flexibility | Protocols | Software Utilities | Web Server



Flexibility is key—the more protocols your selected brand of PLCs supports, the better you can support interoperability with existing applications and third-party devices. Important industrial datacom protocols include MODBUS, CANopen and other flavours of CANbus such as CAN Layer2 and EtherNet/IP. Some brands also support protocols such as SNMP and FTP. Check to see if your PLC manufacturer provides software utilities that enable you to implement proprietary third-party datacom protocols, whether serial RS232/485 or TCP/IP. You can also benefit your customers by increasing the visibility of operating data and diagnostic information. Web Server—the ability to access a PLC via web browser— and VNC support are excellent methods of remotely accessing a PLC, while SMS messaging and email are very handy for notification via mobile. You may also want to look for GPRS/GSM modem support.

3. Look for Intelligent Software

Saving Time | Ease of Use | Re-usability



Saving time is the primary benefit of intelligently designed software. There are two particularly important factors to consider:

- Ease of use – ergonomic design means that you do not need to search for elements when programming. In addition, logical, consistent construction saves time, since the programmer intuitively knows what to do even when programming a particular task for the first time.
- Re-usability - Insist on it. Whether you are programming Ladder or C functions, designing HMI screens and Web pages, or creating custom controls, the ability to re-use your work across projects will save big chunks of time.

4. Don't forget the freebies

High Level of customer care | 24/7 personal support | All free of charge



Look for PLC manufacturers that offer a high level of customer care. Make certain that support, whether technical or sales, is easily available and prompt.

Personal support –meaning from people, not automated systems, that is available 24/7 is extremely valuable. This is what can make the difference in meeting your deadlines and retaining your own customers.

Support documents, specs, and guides, should be readily available. The best things in life are free; select a company that provides support and documentation at no additional charge.

“Don't forget total cost of ownership. Ongoing development costs can make purchase costs insignificant without the right support.”

LAUNCH CALENDAR

Spring

JANUARY 1ST
EMOLICE Technology

EMOLICE technology, the design and manufacturing subsidiary of EMOLICE have released their Spring / Summer 2018 product launch schedule

MORE INFORMATION:
<https://goo.gl/uHRR9S>

JANUARY 12TH
UNISTREAM 5"

Unitronics have announced the launch of their new Unistream 5" PLC & HMI



MORE INFORMATION:
<https://goo.gl/WJe9Cy>

JANUARY 22ND
ELGO ANNOUNCE LIMAX33 CP

EMOLICE have announced the availability of the LIMAX33 CP lift control & safety product, which has recently received TÜV approvals.

MORE INFORMATION:
<https://goo.gl/1guRpf>

FEBRUARY 12TH
Explosion Proof Encoders, Zone 2 & 22

POSITAL have expanded their range of explosion proof rotary encoders with new ATEX products dedicated to Zones 2 & 22 for use in atmospheres where there are potentially dangerous levels of explosive gases or dust (3G and 3D).



MORE INFORMATION:
<https://goo.gl/7kxsjz>

MARCH 20TH
THE SOCIALS

Follow us ! All of our latest information is shared live via our social media channels:



MORE INFORMATION:
Twitter: @emolice
Linkedin: emolice-distribution

featured launch



MARCH 30TH
EMOLICE LAUNCH SI-1

EMOLICE are pleased to announce the launch of their Si-1 slope indicator. Designed & manufactured by Emolice in the UK, the Si-1 Slope Indicator leads the way in reducing accidents caused by operators exceeding maximum tilt angles of machinery.

MORE INFORMATION: <https://goo.gl/uHRR9S>

APRIL 10TH
DRIVES & CONTROLS 2018

EMOLICE will be exhibiting at Drives & Controls 2018 at the NEC Birmingham Apr 10-12th along with UNITRONICS. Come and talk to us about the full range of award winning combined PLCs and HMIs.



MORE INFORMATION:
<https://www.emolice.com/drives2018>

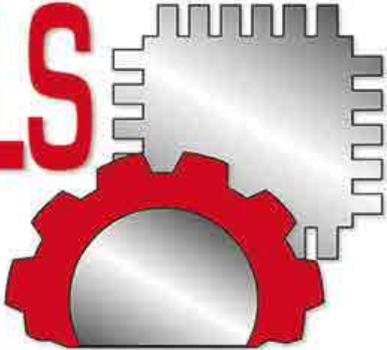
APRIL 11TH
POSITAL FRABA 2018 CATALOGUE

POSITAL have launched their 2018 catalogue of rotary and linear encoders and accessories.



MORE INFORMATION:
<https://goo.gl/2he4a1>

DRIVES & CONTROLS 2018



THE AUTOMATION, POWER TRANSMISSION & MOTION ENGINEERING EVENT

EMOLICE will be exhibiting at Drives & Controls 2018 at the NEC Birmingham April 10th-12th, come and meet us !

AND FINALLY...

Drives & Controls exhibition (NEC Birmingham, 10-12 April 2018) is recognised as the UK's leading show for Automation, Power Transmission and Motion Engineering. It is a biennial event and is co-located with 6 other Industrial exhibitions which will make it the largest Manufacturing/Industrial Event in the UK in 2018.

The exhibition has grown over the last decade and in 2016 had over 13,000 visitors. Entry is free of charge and once inside you'll find the show covers the very latest in mechanical power transmission, motion control and automation from over 400 world class companies.

EMOLICE would love the opportunity to introduce the latest solutions from our partners including:

POSITAL: a manufacturer of sensors for motion control and safety assurance systems. The company's products, which include rotary encoders, inclinometers and linear position sensors, are used in a wide range of settings, from manufacturing to mining, agriculture to energy.

UNITRONICS: designs, manufactures, and markets quality PLCs for the global market. Easy to use, efficient, and affordable, their products have been automating processes, systems, and stand-alone applications since 1989. Unitronics' field-proven PLCs automate hundreds of thousands of installations in diverse fields.

ELGO ELECTRONIC: develops and manufactures magnetic length and angle measuring systems including indicators and controls for positioning tasks in industry and machine construction.

MTS for absolute, linear position sensors using the company's proprietary Temposonics® magnetostrictive technology, which can determine linear position with a high level of precision and robustness.

Register now for the show at www.emolice.com/drives2018

POSITAL
FRABA

MTS
SENSORS

 **UNITRONICS**

ELGO
ELECTRONIC

Swipe. Pinch. Zoom & more



NEW! MULTI-TOUCH!



UniStream 10.4" - The PLC
with the Multi-touch Screen!



UNITRONICS

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