

Data Sheet

UE PRODUCT OVERVIEW

SAFETY, ALARM & EMERGENCY SHUTDOWN

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UE PRODUCT OVERVIEW

SAFETY, ALARM & EMERGENCY SHUTDOWN

WirelessHART® Gas Detector for Toxic & Combustible Gases

Electronic and Electromechanical Switches for Vacuum, Pressure, Differential Pressure, and Temperature

SIL Certified Switches for Safety Instrumented Systems (SIS)

Industrial Temperature Sensors

Custom OEM Solutions



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Over 90 Years of Customer-Driven, Reliable Solutions

First WirelessHART Toxic or Combustible Gas Detector

UE partnered with key customers to develop the Vanguard™ wireless, fixed-point gas detector to address the challenge of expanding gas detection coverage in locations that lacked power and signal wire infrastructure. Using WirelessHART, the Vanguard can be quickly installed in O&G extraction and production facilities, terminals, and storage facilities without the need for wiring or trenching.



First SIL 2 Integrated Smart Switch with Transmitter, Safety Relay, Trip Alarm & Logic Solver

As Safety Instrumented Systems (SIS) grew beyond the process plant into field applications, operators often lacked the infrastructure to support a safety system. UE developed the SIL-certified One Series Safety transmitter to allow direct control of a final element without the need for a SIL-certified SCADA, PLC, or RTU, while also supplying the data needed from a 4-20 mA transmitter.

Only Loop Powered Electronic Switch with Plugged Port Detection

UE designed its electronic switches with integrated functions like trip delay, trip filter and plugged port detection. The plugged port detection feature addresses a common instrumentation challenge: when pressure switches become plugged due to process debris or build up, or when a block and bleed valve is accidentally left closed after maintenance. This could leave operators blind to the actual process conditions. The patented diagnostics within the One Series detect a plugged port quickly and alert the operator to clear the port. This results in increased operational uptime and accurate process and safety monitoring.



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UE Products have been used with the following applications and equipment

- | | | |
|-------------------------|--------------------------|--------------------------------|
| Wellhead monitoring | Instrument panels | Heat tracing |
| Gas flow monitoring | Fire suppression systems | Stack emissions |
| CO2 injection skids | Chemical feed pumps | Pump protection |
| Leak detection | Separator system control | Manifold monitoring |
| Hydraulic monitoring | Line heater control | Pipeline integrity |
| BOP accumulators | Tank level | Sterilizers |
| Seal pots | Purge cabinets | Bag house monitoring |
| Fence line monitoring | Digesters | Safety systems |
| Isolation rings | Engine stop/start | Boiler tube monitoring |
| Tubing and casing | Effluent monitoring | Bearing temperature monitoring |
| Rupture disk monitoring | Lube oil monitoring | Oven temperature control |

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Vanguard WirelessHART Gas Detector

TCD50 (Base transmitter for Gr C & D / IIB zones)

TCD60 (Base transmitter for Gr A,B,C & D / IIC zones)

WirelessHART **HART REGISTERED**



TCD50



TCD60

Advantages:

- Toxic or combustible gas monitoring
- Deploy where power is limited
- Eliminates “blind spots” in your wired system
- Improves safety in difficult-to-reach areas
- Reduces installed cost by >50%
- Installs in <1 hour
- Simplifies project engineering
- 5-year battery life - field replaceable

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One Series SIL 2 Safety Transmitter with Safety Relay Output

Explosion-proof electronic vacuum, pressure, differential pressure and temperature smart switch and transmitter



HAZARDOUS LOCATION

Advantages:

- NAMUR NE 43 4-20 mA output. Embedded sensor, logic solver, high-capacity solid-state safety relay, and display reduces complexity
- Simple installation where infrastructure is limited, and in difficult-to-reach applications
- SIL logic solver functions as trip alarm without additional equipment
- Pressure or temperature safety function
- SIL 2 certified, SIL 3 capable
- Ranges to 6,000 psi (414 bar), 200 psid (14 bar), 1,000°F (538°C)



One Series SIL 2 Electronic Switches, and Transmitter+Switch

Explosion-proof electronic vacuum, pressure, differential pressure and temperature smart switch



Advantages:

- Replace electromechanical switches for cost-effective upgrades using existing wires
- Self diagnostics enables predictive maintenance strategies
- Display and keypad provide easy, fast and secure field programming of set point and deadband
- NAMUR standard and HART enabled smart switch and transmitter for process monitoring, alarm, and emergency shutdown
- Provides precise on-off control in Window Mode configuration
- SIL 2 certified, SIL 3 capable
- Ranges to 6,000 psi (414 bar), 200 psid (14 bar), 1,000°F (538°C)

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12 Series

Explosion-proof, dual seal, 316 stainless steel, vibration-resistant pressure, vacuum, differential pressure and temperature electromechanical switch



Advantages:

- Dual seal compliant to ANSI 12.27.01 standards and NEC 501.17
- Corrosion-resistant 316 stainless steel construction
- Snap-acting Belleville spring for vibration resistance and set point stability
- Convenient field setting and adjustment
- Hermetically sealed SPDT or DPDT switches
- SIL 2 certified, SIL 3 capable
- Ranges to 12,500 psi (862 bar), 150 psid (10 bar d), 650°F (343°C)

117 Series

Explosion-proof Class I, Div. 2, Zone 2 rated pressure, vacuum, differential pressure and temperature electromechanical switches



Advantages:

- Hazardous location approvals for Class I, Div. 2, Zone 2
- Hermetically-sealed snap switch, SPDT or DPDT outputs
- Welded stainless steel diaphragm or bellows sensors
- Epoxy-coated type 4X enclosure with captive cover screws
- Terminal block wiring
- Ranges to 3,500 psi (241 bar), 500 psid (35 bar d), 640°F (338°C)

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Registered in England No. 01851002. VAT No. GB 417 2481 61

120 Series

Explosion-proof pressure, vacuum, differential pressure and temperature electromechanical switch with worldwide agency certifications



HAZARDOUS LOCATION



Advantages:

- Provides primary or secondary (diverse, redundant technology) for safety, alarm and emergency shutdown functions
- Single SPDT or DPDT or dual SPDT outputs
- Choice of internal or external adjustment
- Wide selection of sensor materials and ranges
- Wide adjustable deadband models
- Easy to wire via dual electrical conduit openings and terminal block
- Heat tracing models
- SIL 2 certified, SIL 3 capable
- Ranges to 6,000 psi (414 bar), 500 psid (35 bar d), 650°F (343°C)



820 Series

Explosion-proof indicating temperature electromechanical switch for industrial heating and cooling applications

Advantages:

- Indicating temperature control with remote stainless steel bulb and capillary
- Corrosion-resistant epoxy coated aluminium enclosure with Lexan® cover
- Single or dual SPDT switch outputs
- Division 1, explosion-proof models for hazardous locations
- Set point repeatability and indication accuracy $\pm 1\%$
- Ranges to 650°F (343°C)



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Excela™

2-wire electronic switch for upgrading legacy instrumentation systems (alarm & shutdown) to improve maintenance, operational and cost efficiency

Advantages:

- Two wire design allows for easy host system integration and lower setup costs
- Easy local programming and integrated functions (e.g., trip filter, passcode) for better control
- LCD display and LED indicator lights for visual status of operational performance
- Rugged, electronic relay design and device diagnostics that improves device reliability
- 316L stainless steel wetted materials
- Ranges to 6,000 psi (414 bar); 200 psid (14 bar d), 1,000°F (538°C)



100 Series

Single switch, weather-tight, pressure, vacuum, differential pressure, and temperature electromechanical switch

Advantages:

- Wide variety of pressure sensors for media compatibility
- Epoxy-coated enclosure, designed to meet enclosure type 4X requirements
- Pump switch models with wide adjustable deadband
- Tamper-resistant set point "lock"
- Heat tracing models
- SIL 2 certified, SIL 3 capable
- Ranges to 5,000 psi (345 bar), 500 psid (35 bar d), 650°F (343°C)



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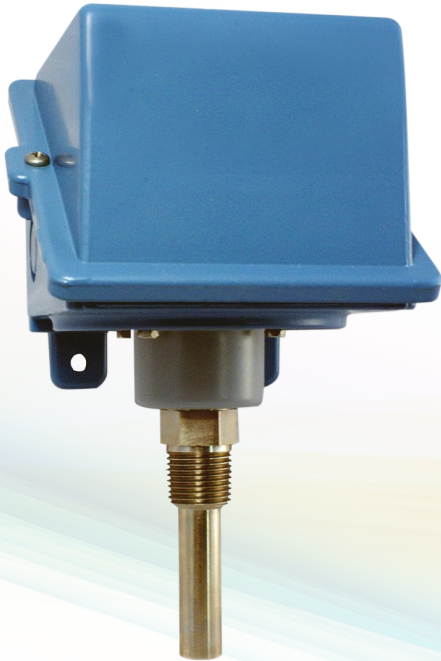
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400 Series

FM approved multi-switch, weather-tight pressure, vacuum, differential pressure, and temperature electromechanical switch

WEATHER-TIGHT

Advantages:

- One, two or three switch outputs may be separated up to 100% of range
- Epoxy-coated enclosure, designed to meet enclosure type 4X requirements
- Choice of reference dial or multi-turn hex screw for set point adjustment
- Wide selection of ranges including low pressure models with narrow deadbands
- Ranges to 6,000 psi (414 bar), 200 psid (14 bar d), 650°F (340°C)



J6

J6 & J21K Series

Industrial pressure and differential pressure switch with metal bellows sensor

Advantages:

- Reliable, metal bellows sensors
- Welded 316 stainless steel models
- Epoxy-coated enclosure, meeting enclosure 4X requirements
- Single switch (SPDT) output
- J6 (straight pressure) ranges to 6,000 psi (414 bar)
- J21K (differential pressure) ranges to 90 psid (6 bar d)



J21K

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54 Series

Economical pressure, vacuum and temperature electromechanical switch for OEMs



Advantages:

- Multiple models and options provide OEM design versatility
- Reference scale or multiple-turn hex adjustment versions
- NEMA 1 Lexan® enclosure or open frame (skeleton) design
- Choice of single or dual SPDT switch outputs
- Ranges to 6,000 psi (414 bar), 650°F (343°C)



J40 Series

Skeleton (open frame) pressure electromechanical switch with metal bellows sensor for OEMs

Advantages:

- Compact, open frame (skeleton) design for OEM applications
- Brass or phosphor bronze metal bellows sensors
- Easy external adjustment
- Single switch (SPDT) output
- Optional adjustable deadband switch
- Ranges to 300 psi (21 bar)



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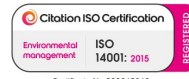
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10 Series

Compact, customizable, cylindrical pressure electromechanical switch for OEMs



WEATHER-TIGHT

Advantages:

- Variety of options to customize design
- 1-1/4" diameter and height as small as 3"
- Most models designed to meet enclosure type 4 requirements
- Factory set or field adjustable with tamper-resistant cover
- Choice of 7 electrical terminations
- Ranges to 7,500 psi (517 bar)
- Proof pressures up to 12,000 psi (827 bar)

24 Series

Compact, economical differential pressure electromechanical switch for OEMs



Advantages:

- Compact, lightweight corrosion-resistant polyester enclosure
- Terminal block wiring
- Available with brass or polysulfone (FDA approved) pressure connections
- OEM capabilities include external adjustment knob with or without reference scale
- Ranges to 45 psid (3 bar d)

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800 Series

Indicating temperature electromechanical switch for industrial heating and cooling applications

Advantages:

- Indicating temperature control with remote stainless steel bulb and capillary
- Corrosion-resistant Lexan enclosure
- Single or dual SPDT switch outputs
- Set point repeatability and indication accuracy $\pm 1\%$
- Ranges to 650°F (343°C)



55 Series

Rugged temperature electromechanical switch with external dial

Advantages:

- Panel or surface mount for temperature alarm, emergency shutdown and control functions
- Enclosed or open-frame construction
- Single or dual SPDT switch outputs
- Dual switch output versions can be separated up to 100% of range
- Designed to meet enclosure type 4X requirements
- Heat tracing models
- Ranges to 650°F (343°C)



UE APPLIED SENSOR TECHNOLOGIES

Thermocouples, RTD's, and Thermistors for Process & OEM markets

Advantages:

- Standard and made-to-order temperature sensors
- Maximum reliability and long-life thermocouples with a variety of protection tubes
- Heat tracing RTDs with replaceable RTD elements to minimize downtime
- NEMA 4 or explosion-proof heads
- Transmitter heads with 4-20 mA output



The Sensor Box™

Emergency kit with a modular system of sensors, hardware and tools

Advantages:

- Build your own sensor assemblies on-site, within minutes
- Customized to fit your application needs
- Reduce downtime in emergencies
- Eliminate expediting fees
- Lower, more flexible inventory

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