



PLANT SAFETY SOLUTIONS

Whether it's protecting valuable equipment, processes or your loyal employees, creating a safe work environment is a corporate responsibility. Installing safety instrumentation not only protects critical equipment and processes; it also creates a safe work environment for your employees and a healthier environment for us all.

UE's One Series digital pressure and temperature switch comes with complete Failure Modes, Effects and Diagnostics Analysis (FMEDA) data from Exida, enabling plant safety personnel to reliably calculate Safety Integrity Levels (SIL). The rugged One Series is installed in the field, at the point of critical monitoring, with response times 5X faster than a transmitter, providing immediate, local shutdown, while streamlining wiring and software. For your plant safety requirements, simplify and improve reliability with the One Series for all critical pressure and temperature shutdown applications.



DIRECT-ACTING SAFETY SHUTDOWN

The rugged and reliable One Series pressure and temperature switch protects equipment, processes and personnel. It is installed where needed, in the field, with direct-acting on/off digital switching. With 0.1% repeatability combined with solid-state reliability and on-board diagnostics, the One Series is the clear choice for critical plant safety applications.



FASTER RESPONSE TIME THAN A TRANSMITTER

Plant safety requires immediate response to dangerous conditions. The One Series response time is 60 mS, five-times faster than a process transmitter. And, with direct switching capability at the point of critical conditions, it provides an alternative technology to the over-reliance on transmitters and central control systems, eliminating the possibility of "Common Mode Failure."

ONE SERIES ELECTRONIC PRESSURE, DP & TEMPERATURE SWITCHES

- Fully adjustable set point and deadband
- 5X faster than a transmitter and 50% less installed cost
- Digital display includes process, status and self-diagnostics
- 2-wire and loop-powered 4-20 mA models available
- Measures gage pressure, differential pressure or temperature
- 0.1% repeatability with temperature compensation
- Provides the functions of a switch, gauge and transmitter
- Ranges to 6000 psi (410 bar), 200 psid (13.8 bar), 1000°F (538°C)



For Zones 0 & 2




ON-BOARD DIAGNOSTICS

The One Series continually checks health status for circuit and sensor integrity, providing extra assurance that it stands ready to perform when needed. In addition, it provides a “pulsed” output that can be activated to help distinguish a critical alarm or shutdown signal above the frequent control room “noise” of false trip signals that may be ignored or disabled at operator discretion.



SUITABLE FOR SIL2 APPLICATIONS

Request the  Failure Modes, Effects, Diagnostics Analysis (FMEDA) report from UE covering the One Series, enabling you to calculate the Safety Integrity Level (SIL) for your applications. Also request the SIL Verification Summary report to compare the One Series with generic switches and transmitters. Go to www.ueonline.com for copies of these 3rd party reports.



For Zones 1 & 2

I AM WORKING (IAW®):

THE ROLE OF SELF-DIAGNOSTICS IN SIS APPLICATIONS

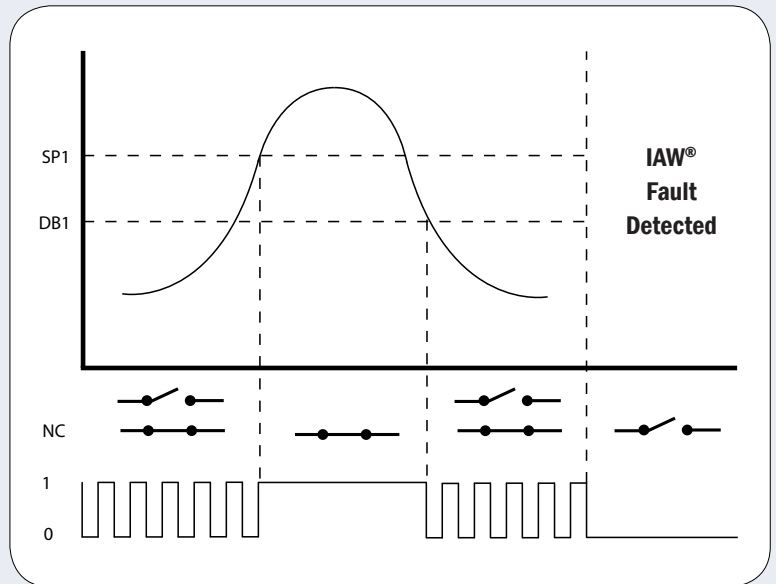
All One Series electronic switches include powerful self-diagnostics. Critical functions of the One Series are checked during initialization, and then continuously monitored by the IAW® algorithm. Detected faults are reported using three methods of annunciation:

1. The local digital display provides clear fault indications at a glance
2. Each fail-safe switch will open, providing a remote fault indication
3. On models that include 4-20 mA output, the analog signal will indicate 0, 3.5, 22 or 24 mA, depending on the type of fault.

IAW® PROGRAMMING MODE AND RESULTING SWITCH STATES

The fail-safe-open IAW® programming mode provides a predictable annunciation that differentiates between an upset process variable and a detected fault using a single discrete “switch” output.

- When process and instrument conditions are normal, the One Series switch is pulsed, sending out a continuous heartbeat signal that is easily detected by the safety PLC.
- When the process variable reaches the programmed set point, the One Series switch will close, indicating that the process is upset but the One Series remains functioning (no faults detected).
- If the switch opens, this condition indicates a fault detected by the IAW® self-diagnostics. The reporting scheme also accounts for wiring integrity. If a wire is broken or power is lost, this type of “fault” would also appear as an open switch to the safety PLC.



Diagnostics example: detecting plugged port

DETECTABLE FAULTS

Fault	Fault Code	Display Message	Switch Output	4-20 mA
Sensor Clogged	8000	PLUG	Open	24 mA
Extreme Over Range (+150%)	0200	OVER RANGE	As Programmed	24 mA
Over Range (+110%)	0020	OVER RANGE	As Programmed	22 mA maximum
Under Range	0220	UNDER RANGE	As Programmed	3.5 mA minimum
Sensor Fault - Open	0400	SENSOR FAULT	Open	24 mA
Sensor Fault - Shorted	0800	SENSOR FAULT	Open	24 mA
Reference Voltage	1000	REF FAULT	Open	24 mA
Power Supply	0040	P/S OUT OF RNG	Open	24 mA
Switch Voltage	0080	SWITCH FAULT	Open	24 mA
Watchdog Timeout	0004	WDOG	Open	24 mA



FOR MORE INFORMATION ON HOW THE ONE SERIES CAN MAXIMIZE YOUR PLANT SAFETY EFFORTS, PLEASE:

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