

One Series Safety Transmitter

Specifications

Benefits

- Industry-leading safe failure fraction (SFF) and a high risk-reduction factor (RRF)
- Certified for use in SIL 2 safety systems as a single sensor (HFT=0)
- A self-contained sensor, logic solver, and final element (ability to control externally) for a complete safety system capable of SIL 2 without additional SIF components
- Safety relay output (SRO) as a final element

“The first SIL 2-certified transmitter designed solely for safety system applications.”

The One Series Safety Transmitter is a pressure or temperature monitoring transmitter switch that provides a NAMUR NE 43 standard 4-20 mA analog output. Its programmable high-capacity solid-state relay enables the fastest emergency shutdowns.

The One Series Safety Transmitter is certified for use in SIL 2-functional safety applications, and is capable of SIL 3 applications when augmented by redundancy and voting logic. Its simple design means fewer nuisance trips — for greater safety, productivity, and throughput.

The One Series Safety Transmitter was designed with features that simplify installation, improve productivity, and eliminate nuisance trips. “I Am Working”

sensor diagnostics with redundant data processing detect open, shorted, and plugged sensing elements.

The transmitter’s analog output conforms to NAMUR NE 43 and provides process-variable (PV) and detected-fault information. Discrete outputs provide a fail-safe (open) emergency shutdown when a fault is detected. Set point and deadband (reset point) are 100% programmable.

The instrument is password protected to prevent unwanted parameter changes; eliminating the risk of tampering. In addition, LED backlighting enhances viewing of process variables, parameters, and status in dimly lit areas.

Specifications

Outputs include:

- 4-20 mA analog (NAMUR NE 43 standard, accuracy tested in real time)
- Safety Relay Output (SRO) — Solid state relay rated at 0-240 VAC @ 5 amperes, programmable for set point and deadband
- SRO Status — Indicates status of the safety relay output
- IAW Output — Indicates device health status

Instrument response time: < 100 milliseconds

SFF = 98.5%; $PFD_{avg} \leq 2 \times 10^{-3}$

Risk reduction factor: 700 (min.) to maximize safety integrity level (SIL) when used as a component in a safety-instrumented function (SIF)

- Redundant and diverse instrument amplifiers and A/D converters
- Diverse S/W algorithms process sensor data in parallel to ensure integrity
- Certified for use in SIL 2 safety systems by exida¹, with SIL 3 capability
- Polyester-coated bright yellow aluminum Div. 1 Ex d casting — easily identifies SIF safety transmitter
- FMEDA report available upon request



¹exida is a registered trademark of exida Consulting LLC.