



SELF-TESTING SYSTEM FOR HIGH-RELIABILITY DISTRIBUTED TEMPERATURE AND STRAIN MONITORING

Statistical evaluation of confidence levels.
Proven by experience SIL rating.

Description

The DiTemp ATTS contains 2 optical fiber sections of approximately 2m length each that can be heated or cooled in a controlled and reproducible way. The system is set to reproduce a temperature rise or drop of the same magnitude as the one expected in the case of an anomaly, e.g. a leakage.

These two sections of fiber are placed at the beginning and at the end of the real sensing cable to test the detection of a simulated event at both extremities and therefore predict the ability to detect real events over the whole length of the sensing cable. The simulated temperature rise or drop events are typically generated every hour. The DiTemp ATTS records the timing of the simulation start and of the received alert from a dedicated zone in a DiTemp Relay Module controlled by the DiView software. If no alert is received after a predefined timeout, the DiTemp ATTS can generate an alert, indicating that the system might be unavailable.

A signal is also available during the heating or cooling cycle, to allow recording by a plant control system. The DiTemp system will detect real leakages also during a simulated test, since the two events take place in different zones. Alerts from the test zone are typically not transmitted to the plant controller and do not initiate any further action.

The system records all timing results, so that a report can be periodically generated to summarize the availability score and the average and maximum reaction times, providing a periodic evaluation of the SIL level (Safety Integrity Level proven by experience).

Key Features

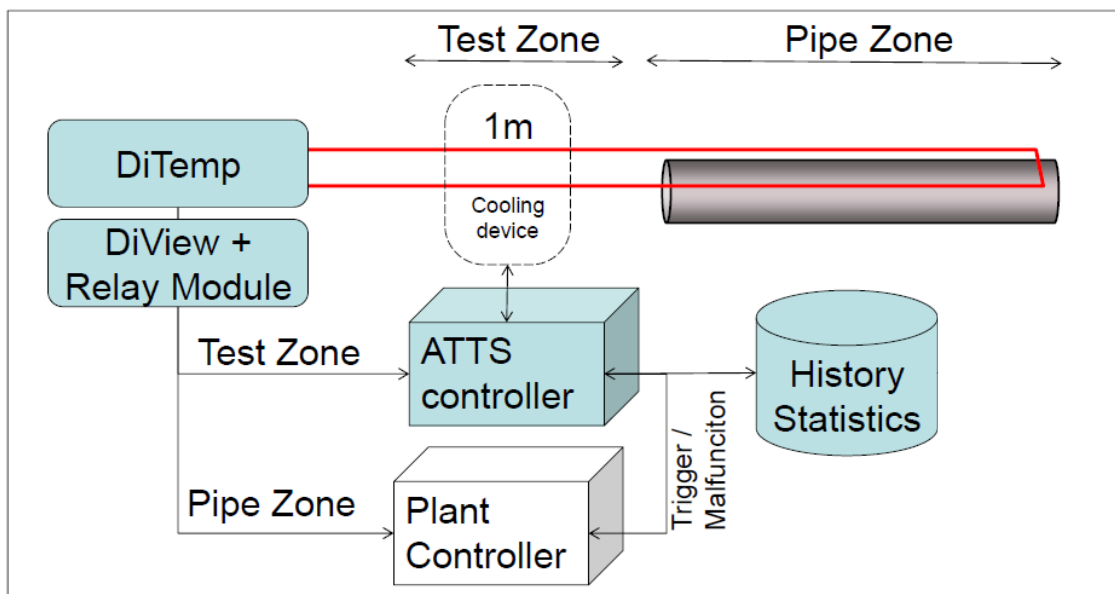
- Simulation of hot and cold spots
- Two zones
- Continuously verify availability and reliability in mission-critical alert systems
- Statistical evaluation of confidence levels (proven by experience SIL rating)
- Integration with plant controller
- Standalone operation, fully independent from DiTemp and DiView

Applications

- Pipeline leak detection (Ammonia, LNG, Ethylene, oil and gas).
- Localized strain detection
- SIL level evaluation

Performances

Technical features	Technical specifications
Size of hot/cold spot → 2 m	Operating temperature → 5°C to 40°C
Number of hot/cold spots → 2	Storage temperature → -15°C to +65°C
Maximum Temperature change → ± 15 °C / 10 s	Humidity → 5% to 95% RH, non condensing
Heat/cool period → 10 s to 5 minutes (factory set)	AC Power → 100V – 240V, 50Hz – 60Hz
Heat/cool cycle → 1 minute to 24 h (factory set)	DC Power → 24V or 48V supply option
Modes of operation → heat or cool (factory set)	Power consumption → 100W maximum
Fiber typology → MMF 50/125 μm (ITU.T G.651)	Dimension (HxWxD) → 90 x 435 x 480 mm
Memory size → 2 years with 1h cycle time	Weight → 9.5 kg
	Communication options → Modbus, Ethernet, 5 V signal



Certification and compliance

CE MARK

Accordance with 89/336 EEC EMC directive accordance with LVD 72/23 EEC directive: EN 41003; EN 50178; EN 60065; EN 60825-1; EN 60950; EN 61010 -1

Accessories and ordering information

- 14.2014 DiTemp ATTS
- 14.2010 DiTemp Reading Unit
- 14.2010.rm DiTemp Alarm Relay Module
- 14.2010.oc DiTemp External Channel Multiplexer
- 20.2010 DiView Data Management Software

Smartec SA

Via Pobietta 11
CH-6928 Manno, Switzerland

Phone +41 91 610 18 00
Fax. +41 91 610 18 01

Email info@smartec.ch
Web www.smartec.ch