Innovative Safety Monitoring System based on Fiber Optic Sensors Technology Compatible with 4-20mA Standard

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Introduction

To take advantage of the FOS sensing feature within a safety monitoring system to be used in harsh environments (like DSS front-end) an optoelectronic interrogation system must be:
- Reliable and robust;
- Purely analog, avoiding digital processing;
- Capable to restore the output if a malfunction occurs;
- Compatible with 4-20mA standard (PLC system).

Experimental Measurement and Conclusion

1-Channel measurement of ΔT of 70°C (approx. 700pm of λB shifting) with:
- Fs-FBG with 315pm FWHM, λB~1555nm (almost ch28 peak);
- AWG with channel spacing of 800pm and FWHM of 600pm.