Development Services for Process Instruments

Introduction

Typical instruments like transmitter, actuators and control devices are used to transmit simple sensor information (e.g. temperature, pressure) and diagnostics to monitor or control processes. This is still done often via current loops (4-20mA interfaces).

New technologies are available and revolutionize process automation in the areas of Industry 4.0 / IIoT, predictive maintenance, advanced diagnostics and functional safety.

Our services

MESCO develops products for its customers that meet the new requirements and global standards for explosion protection and functional safety. With our experience in the development of hardware and software, with our TUV certified engineers and our development processes, we develop your field device – from the concept, the complete electronics development to the approval.

Explosion protection is an essential factor for operation in process automation. MESCO therefore offers its own safe **Explosion Proof solutions** (conforming to international standards such as IECEx, ATEX, FM, CSA, etc.).

We implement sensors and actuators with **functional safety functions** (SIS / SIF) according to the relevant standards such as IEC61511 / IEC61508 or EN50271 / EN50104.

Additional flexibility comes with the introduction of **Single Pair Ethernet** (SPE) with **Power Over Data Line** (PoDL), which makes proven communication technology suitable for the special requirements of PA. As an alternative to HART and fieldbus communication, MESCO offers the integration of SPE and APL. This opens up IIoT functionality, predictive detailed diagnostics and functionally safe communication independent of a local power supply. Here TCP/IP, PROFINET or HART-IP is available as transport layer.

Services in brief

- Requirements engineering – support with product specification
- Development of explosion-protected, intrinsically safe sensor / actuator or control systems
- Development of functional safety automation components up to certification
- Connection to process controls with Fieldbus, HART, IO-Link, Ethernet-APL or SPE (Single Pair Ethernet IEEE 802.3cg)
- Cloud connectivity with OPC UA communication for Monitoring and Diagnostics
- Power supply via PoDL (IEEE 802.3bu)
- Proof of conformity with IECEx, ATEX, FM, CSA and other international standards
- Proof of conformity with IEC 61511 / 61508 SIL1-SIL3, EN50271 SIL1, EN50104 SIL2-SIL3, ISO 13849 PL d
- Approval support for UL, CE, Fieldbus, Ex, functional safety
- Technology consulting / studies