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Protection through Intrinsic Safety

DART Fieldbus: The Safe Way for Supplying Power to Hazardous Areas

Instrumentation controls and protects your production. In hazardous areas, intrinsically-safe protection not only provides the highest degree of protection for people, systems and the environment, it also enables devices and apparatus to be used safely, as ignitable sparks are eliminated – it is intrinsically safe. Safety regulations, sometimes considered burdensome, at least stipulate more care in the planning and require validation of explosion protection. And that is not the only point where DART provides a solution.

DART stands for Dynamic Arc Recognition and Termination. DART Technology detects a spark during its onset and switches off before the spark becomes incendive. With DART Technology, more power is available to instrumentation and control equipment than has so far been possible with intrinsically safe devices. Pepperl+Fuchs specialists place high value on interoperability, including between the various manufacturers, and especially on straightforward application in practice.

PROFIBUS PA and FOUNDATION Fieldbus H1 are two very popular process automation fieldbuses. They facilitate communication between the control technology and field instrumentation and are particularly suitable for hazardous areas. With the FieldConnex DART Fieldbus series we applied DART Technology in practical products for the first time. These products are certified by the PTB to the international standard IEC 60079-11 and can thus be used throughout the world.

<Fig. 2>

The application of DART Fieldbus is subject to the same rules as in non-Ex requirements – with long cable runs and large numbers of devices connected simultaneously. And the best thing is that this safest of fieldbus infrastructures can be used in both new systems and

upgrades, as your chosen or existing intrinsically safe field instrumentation can be connected.

Simplicity in Practice Makes the Difference

FISCO, the Fieldbus Intrinsically Safe Concept, provided the inspiration for DART Fieldbus, paving the way to simplicity in practice. DART Fieldbus was designed with a comparable level of simplicity for general planning and validation of intrinsic safety. Only three rules must be observed by your colleagues responsible for instrumentation and automation, and these rules practically run in their blood in any case.

1. The maximum permitted length of the trunk is 1000 m; this is probably longer than required by your system.
2. Only cable type 'A' should be used. This cable type is a shielded twisted pair cable, very suitable for fieldbus.
3. Only those DART components listed on the certificate can be connected to the trunk.

<Fig. 3>

Voilà! Segment planned, explosion protection validated!

The rest is all the same. Because in practice, a DART Fieldbus segment is operated practically in the same way as fieldbus in 'safe', non-Ex production areas – it is simple, easy to understand and easy to engineer.

Really So Simple?

This simplicity is easily explained. Today, customers are showing a great deal of interest in our FieldConnex DART Fieldbus products. We look forward to hearing from you. Talk to us about DART Fieldbus. You can find technical data, a white paper and other information at www.dart-fieldbus.com.

Or send an e-mail: ahennecke@de.pepperl-fuchs.com.

About Pepperl+Fuchs

Pepperl+Fuchs is a leading developer and manufacturer of electronic sensors and components for the global automation market. For more than 60 years, our continuous innovation, high quality products, and steady growth has guaranteed us continued success.

One Company – Two Divisions

Pepperl+Fuchs – PROTECTING YOUR PROCESS

The **Process Automation Division** is a market leader in intrinsically safe explosion protection. We offer comprehensive, application-oriented system solutions, including customer-specific control cabinet solutions for the process industry. A large portfolio of components is available from our various product lines: isolated barriers, fieldbus infrastructure solutions, remote I/O systems, HART interface solutions, level measurement devices, purge and pressurization systems, industrial monitors and HMI solutions, power supplies, separator alarm systems for oil and petrol separators, signaling equipment, lighting as well as emergency shutdown equipment and accessories.

Pepperl+Fuchs – SENSING YOUR NEEDS

With the invention of the inductive proximity sensor in 1958, the company set an important milestone in the development of automation technology. Under the motto “Sensing your needs”, customers benefit from tailor-made sensor solutions for **factory automation**. The main target markets of the factory automation are machine and plant construction, the automotive industry, storage and material handling, printing and paper industry, packaging technology, process equipment, door, gate and elevator construction, mobile equipment, renewable energies.

The division offers a wide product range of industrial sensors whether it’s inductive, photoelectric or ultrasonic sensors, rotary encoders, identification systems, barcodes, code readers for data-matrix-codes and vision sensors.

Key words: FieldConnex, fieldbus, explosion protection, PROFIBUS, FOUNDATION fieldbus, intrinsic safety, chemical industry, pharmaceuticals, simplicity, application, Zone 1, practice

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Fig. 1: Eye catcher

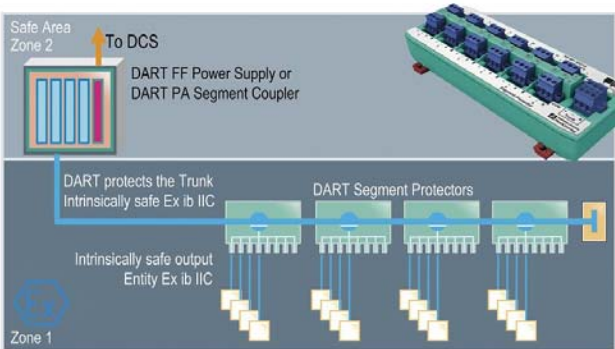


Fig. 1: Completely intrinsically safe fieldbus with high power on the trunk and spurs. Connection for all intrinsically safe instrumentation.

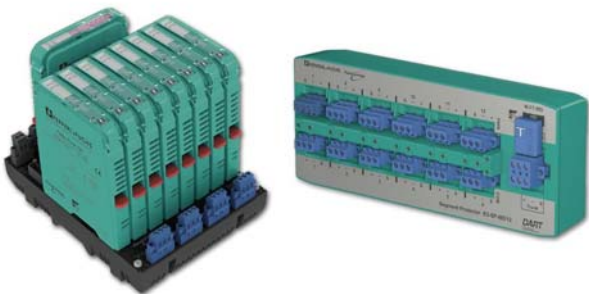


Fig. 2: DART Power Hub and Segment Protector – certified as one. Together, they protect the trunk so it is intrinsically safe even at high power levels.