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Yokogawa approves Pepperl+Fuchs FF Modular I/O

Foundation Fieldbus receives digital and analog signals

Yokogawa have successfully tested and approved Pepperl+Fuchs Foundation Fieldbus Modular I/O for use with their Centum VP system. Now any sensor and actuator finds the proper fieldbus connection to the DCS from the leading brand for hazardous area installations.

Proven in use System

Until recently a number of signals were inaccessible to Foundation Fieldbus. Now Pepperl+Fuchs offer a total concept from dedicated FieldConnex valve interfaces or temperature multiple inputs available for intrinsically safe signals to FF Modular I/O, which also interfaces classic 4...20 mA intrinsically safe and high-power instruments to the DCS via FOUNDATION fieldbus H1. The entire range of sensor and actuator functionalities required by plant processes located in any hazardous area can be connected via Pepperl+Fuchs.

By adding a FF-Gateway to the proven Remote I/O you are able to use the known reliable hardware to make use of the standard FF Multi Function Blocks. So for the very first time there are modular Foundation Fieldbus I/O modules to interface with all kinds of traditional signals and high-power instruments. They also make better use of the 31.25 kbps data transmission rate and help to cut costs.

FF Modular I/O Architecture

FF digital or analog Inputs and Outputs

Unlike discrete I/O boxes Modular I/O can combine digital or analog inputs and outputs in a single enclosure. It supports NAMUR or contact inputs as well as solenoid outputs, temperature signals or transmitter supplies for two wire transmitters or inputs from 4-wire

transmitters. Modular I/O come with their own power supply so they do not load the bus and yet are able to drive high-power solenoids.

At the same time they are highly compact with up to 40 digital inputs or outputs or 20 analog inputs or outputs or a combination thereof.

Applications

The principle has been derived from the standard Remote I/O for which hundreds of thousands of modules are in operation worldwide. This new Foundation Fieldbus Modular I/O adds all the functionalities required for process instrumentation in an ideal combination. It allows for legacy analog and digital inputs and outputs as well as temperature inputs to be included for plant retrofits in brown field or green field applications.

The FF Modular I/O can be regarded as any other individual FF device with several variables. The FF Modular I/O is integrated into the Host system by means of DDs (device description) and CFF (configuration file) files. This ensures full system integration and easy engineering access.

Physically it behaves in the same way as a standard FF node. Additional IS barriers are not required as it can be directly connected to the fieldbus trunk. The legacy devices are connected to the I/O modules using intrinsically safe loops in the same way as in the conventional isolated barrier approach. Even NON IS signals can be accommodated side by side with intrinsically safe loops.

That way all non Foundation Fieldbus signals can be brought to the fieldbus without having to replace existing equipment. This saves costs on a major scale since it is no longer necessary to buy all new field devices to bring them in line with Fieldbus when brown field plants are modernized.

The installed base of pressure and differential pressure transmitters can stay in place as can the motorized valves, positioners, and solenoids. In hazardous area applications these field devices are connected to the FF Modular I/O using the traditional form of intrinsic safety wiring to FISCO or to the Entity concept.

FF Modular I/O represents the missing link between conventional digital and analog signals and the most modern Foundation Fieldbus technology. That way it completes the range of Foundation Fieldbus devices.

Key words: Foundation Fieldbus, FF Modular I/O, FieldConnex, Fieldbus, intrinsically safe, Pepperl+Fuchs

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Characters: 3,242, without space characters
Characters short text: 313 without space characters
Pictures: No. MC7522_080813_01

Januar 2009

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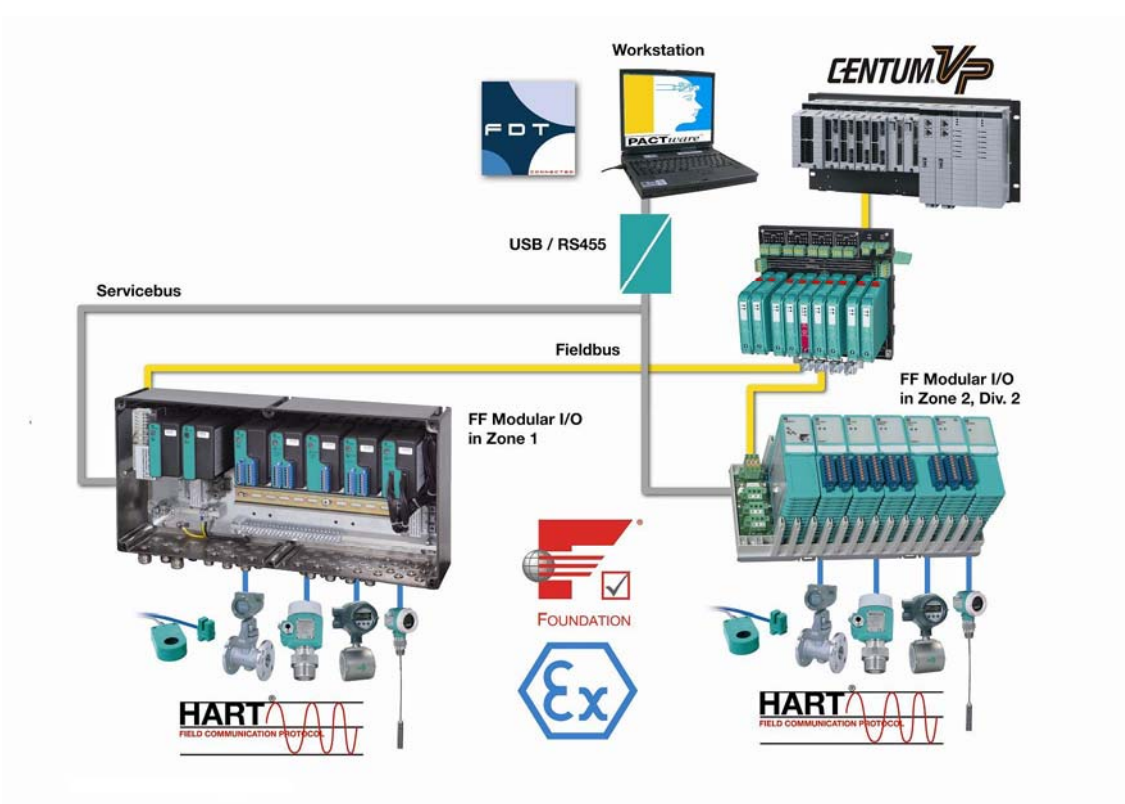


Fig. 1: FF Modular I/O Architecture