system 302
enterprise automation

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Protocol Gateway

Characteristics:

- Foundation Fieldbus
- Profibus-DP and Profibus-PA
- DeviceNet
- AS-i bus
- Modbus-RTU or Modbus-TCP/IP
- Single platform for all protocols
- Supervision and control functions
- Built-in diagnostics

New technologies are now leading the automation market and as more options are available more interoperable the control system must be.

In fact, certain companies are becoming more specialized on the development of products for digital protocols integration and becoming popular solutions for control systems without such flexibility.

The most common and interoperable protocol at the moment (Modbus) is an easy path for the integration of new protocols through specific gateways. These gateways are normally associated to other field level protocols such as Foundation Fieldbus, Profibus, DeviceNet, AS-i bus, etc. And the final solution is able to perform control, supervision and maintenance including the integration of these various protocols.

SMAR System302 comprises a list of different processors, where each one of them handles a different digital protocol and are normally interconnected via Foundation Fieldbus High Speed Ethernet (FF HSE), creating a single system with multiple processors working as one.

As all SMAR System302 processors have same basic features, and the Modbus protocol is one of them. It's simple to target the Protocol Gateway market using standard DFI302 hardware along with any Modbus compliant 3rd party control system.

The use of SMAR System302 in a Protocol Gateway application can be done in different ways, but in few words the system is normally accommodated via serial communication (RS-232 or RS-485 with converters) or even via Ethernet media using one of two FF HSE ports available on DFI302 processors.

Moreover, the common structure of using DFI302 also enables an easy path for the integration of so many different protocols, achieving the best of its kind on the right areas.

The application using SMAR System302 in a Gateway scenario can be configured in several ways, but we can highlight the most efficient one in basically three levels:

- Control
- Supervision
- Maintenance

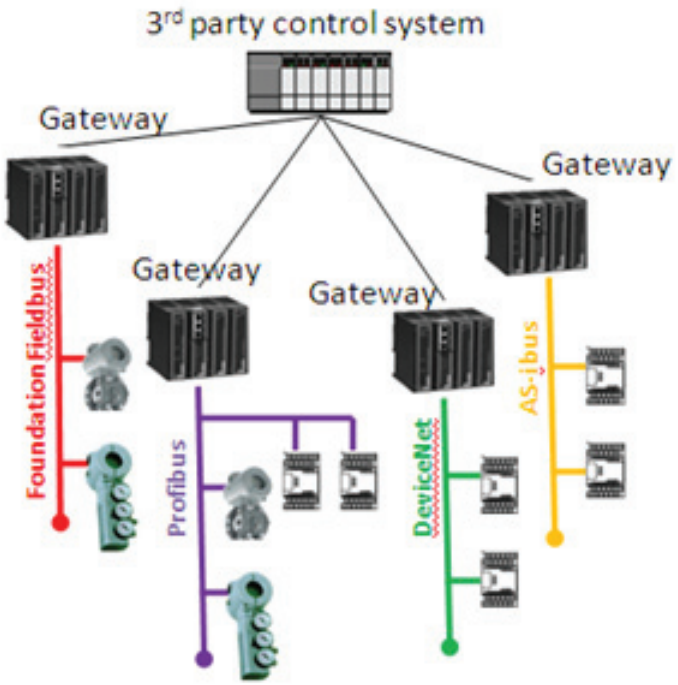
In few words, even acting as Gateway, the DFI302 is still a control system and therefore can easily manage the control loops or also using field devices (Foundation Fieldbus). Therefore, SMAR highly recommend the concentration of control loops associated to the digital bus to be addressed to DFI302 or its field devices to enable faster control cycles and higher performance.

Supervision and interlock links can be done through soft signals using the Modbus protocol where the 3rd party control system can manage all functions that the gateway will execute. Modbus is not the only option for these specific functions, as OPC servers are also available for all DFI302 options.

Maintenance can also be considered as the main reason for the use of digital communication is to access all built-in diagnostics brought by such technologies. In case of Modbus protocol, all diagnostics can be addressed via some configured information just for visualization. In case an OPC link can be established between 3rd party control system and the DFI302's, then a larger set of information can be obtained to achieve higher diagnostics targeting also the asset management level.

Characteristic	SYSTEM302 Availability
Foundation Fieldbus	Yes*
Profibus-DP / PA	Yes*
DeviceNet	Yes*
AS-i bus	Yes*
Modbus-RTU / TCP-IP	Yes
IEC 61131 programming language	Yes
VAC power supply	90 to 264 VAC
VDC power supply	20 to 40 VDC
Redundancy support	Yes, CPU only
Foundation Fieldbus HSE	Yes
OPC support	Yes

*The access to different protocols is done via different CPU types, please consult SMAR for extra information.



For additional information please contact us.

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