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DF63 and DF75 Controllers: Features and Differences

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DFI's Panel

The DF63 and DF75 controllers belong to the DFI302 family - Platform of Process Control and Automation, and integrate [SYSTEM302](#) process control system.

A key element on field control distributed architecture, DFI302 present communication features that establish direct I/O access and advanced control to continuous and discrete applications. Its modular concept allows it to be installed in control room panels or field sealed boxes. It is highly expandable and the choice for small applications or large, complex plants.

DF63 – HSE Controller / 4 Foundation H1 channels

DF63 is the second generation of SMAR's Controllers and supports up to 16 H1 field equipments per channel.

Flexibility

Through H1 or HSE (High Speed Ethernet) links, DF63 can integrate different types of control:

- Control concentrates on the controller (links between controller and field equipments);

- "Field" and "Distributed" control (links between field equipment on the same H1 channel or different H1 channels);
- Control between:
 - HSE – HSE controllers;
 - One "controller 1" and field equipments installed on one "controller 2" (HSE-H1), or vice versa;
 - Field controllers installed on different controllers (H1-HSE-H1 bridge).

The automation engineer defines the combination according to the control architecture most suitable for the application.

Interoperability

Pioneer in Foundation fieldbus, SMAR has put into operation field equipment systems from multiple manufacturers, as well as its own transmitters. Plants that operate the DF63 regard it as the best on its class for a specific application, and are not tied to a single manufacturer.

Versatility

Master or slave operation, integrated to other than Foundation H1 or HSE equipments. Permits the integration of the Fieldbus technology to legacy systems. Hence, it allows the plant gradual migration and preserves investments, while maximizes plant availability.

DF75 – HSE Logic Controller

The DF75 module is the second generation of SMAR's Logic Controllers.

Dedicated

For applications that require better performance, DF75 is the choice. It is dedicated to discrete control by executing ladder logic with access to I/O cards, in addition to having the largest limit of points and ladder functional blocks between the DF1302 controllers.

Versatile

As a Modbus slave, DF75 maps out ladder and I/O points as Modbus points, which facilitates its integration with other equipments.

Common DF63 and DF75 features

Both support functional blocks and ladder language, as well as access to I/O cards.

Integration between continuous and discrete control

By using a flexible functional block (FFB) it enables the integration between continuous and discrete controls, as well as between different digital network standards, through HSE links.

Tolerance to failures / Availability

Two 10/100Mbps Ethernet ports provide network redundancy and cover failures from cables or other network components. There is also redundancy on all controller configurations and functions with the use of the HOT Standby redundancy strategy. [SYSTEM302](#) provides redundancy at all system levels and solves all kinds of physical failures. Therefore the plant safety and availability are guaranteed in terms of control, supervision and operation.

Reliability

The following are applications that use [SYSTEM302](#) and the DF63 and DF75 controllers:

Plant / Site	Segment
SMAGP – Syria	Oil & Gas
Eletronuclear – Angra dos Reis – RJ, Brazil	Nuclear Energy
Eletronorte – Pará, Brazil	Electrical
Banatski Dvor – Serbia	Oil & Gas
Rhodia – Paulínia – SP, Brazil	Chemical
Deten – Camaçari – BA, Brazil	Petrochemical
Corning – Concord N.C. – EUA	Optic fiber
Duke Energy – Oconee S.C. – EUA	Nuclear Energy
Firmenich – SP, Brazil	Chemical/Perfume
Spirax Sarco - Italy	Thermo-electrical

For more details about features and specifications of SMAR controllers access: <http://www.smar.com/products/dfi302.asp> and consult the user manual.

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