

Fieldbus command



The field bus is a means for exchanging information and commands with several actuators or sensors over a single electrical line.

Each actuator requires an individual power supply and a communication line which, in the case of the field bus is common to a set of actuators.

The signal is encoded and an address is assigned to each actuator. Therefore, each actuator can identify those commands which are intended for it, and the data transmitted by the actuator can be identified.

The advantage of field bus connection is, on the one hand, that several actuators can be connected over the same line and, on the other, that the amount of data transmitted by each actuator can be augmented without increasing wiring costs.

A field bus which establishes connection for several actuators over a single line is distinct from an encoded 4 - 20 mA system (such as the "Hart" system) which is capable of carrying data superimposed over a 4 - 20 mA signal for a single actuator or sensor.

■ A WIDE RANGE OF FIELD BUS SYSTEMS

As a wide range of field bus systems exist, an actuator can only connect to a bus line if it is equipped with the field bus specific interface. There are "proprietary" systems, where a single manufacturer supplies the necessary interfaces, and "open" systems where various manufacturers can supply interfaces.

With regard to "proprietary" systems, L. Bernard offers the DUPLINE system, branded DS200. Although proprietary, this system is not L. BERNARD-specific, as the manufacturer is Carlo Gavazzi. The user can therefore procure additional interfaces directly from Carlo Gavazzi, and is therefore not dependent on the actuator supplier.

A "proprietary" system always includes the actuators and their bus interface, as well as the bus controller located at the line head-end, used for the dialog with the PLC which controls the process.

Communication with the PLC also uses a bus system. In general MODBUS is used.

In the electric actuator area, "open" systems are essentially:

- PROFIBUS
- MODBUS
- FIELDBUS FOUNDATION

With an "open" system, the actuator or sensor supplier usually limits its offer to the equipment equipped with the bus interface. The bus controller is generally incorporated to an extension of the PLC.

■ DUPLINE FIELD BUS

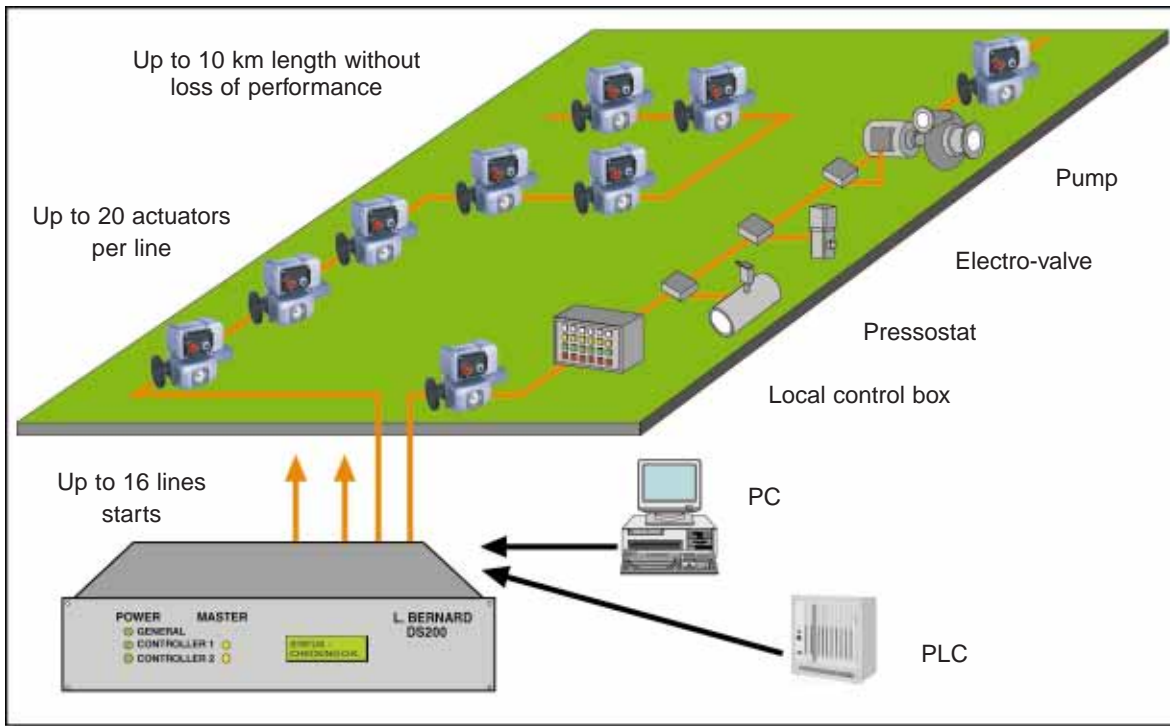
The complete range of L. BERNARD actuators can be equipped with the DUPLINE field bus interface.

Each actuator is offered as an integral version, meaning it comes complete with contactors and is handled by an electronic board. This part may come as a separate unit.

Both integral versions of the L. BERNARD range can be used: INTEGRAL+ or INTELLI+, with the addition of the DS200 interface for the DUPLINE system.

A bus controller, installed at the line head-end, is supplied to control the assembly. Communication with the PLC is via MODBUS.

2 systems are available. A single version is used to control a line of 31 actuators from the DUPLINE



MASTER MODULE, or a redundant version from the DS200 CONTROLLER, used to control up to 320 actuators, i.e. 20 actuators per line. The maximum line distance is 10 km.

■ PROFIBUS DP FIELD BUS

The complete range of L. BERNARD actuators can be equipped with the PROFIBUS DP field bus interface. (Caution: the PROFIBUS DP system cannot be connected to the same circuit as the PROFIBUS FMS or PROFIBUS PA system). Each actuator is offered as an integral version, meaning it comes complete with contactors and is handled by an electronic board. This part may come as a separate unit.

Both integral versions of the L. BERNARD range can be used: INTEGRAL+ or INTELLI+, with the addition of the "PROFIBUS DP 32 I/O" interface for the INTEGRAL+ or the "PROFIBUS DP data transfer" interface for the INTELLI+.

A PROFIBUS DP line can control up to 30 actuators. Extra line repeaters are required to increase the number of actuators connected to a given line.

The maximum line distance is 1.2 km, and more with repeaters.

Only the actuator is supplied with its PROFIBUS DP interface. This actuator can connect to any PROFIBUS DP field bus even if other units are connected. The only requirement is not to exceed the number of connection points which is 30 max. Each actuator or sensor counts as a connection point, regardless of the amount of data transmitted.

■ MODBUS RTU FIELD BUS

Actuators of the L. BERNARD range equipped with the INTELLI+ command can accommodate the MODBUS interface. A MODBUS line can control up to 30 actuators. Extra line repeaters are required to increase the number of actuators connected to a given line.

Only the actuator is supplied with its MODBUS interface. This actuator can connect to any MODBUS RTU field bus even if other units are connected. The only requirement is not to exceed the number of connection points which is 30 max. Each actuator or sensor counts as a connection point, regardless of the amount of data transmitted.