

PRODUCT CATALOG



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HISTORY

FOUNDED IN 1982

Fertron has expertise in the implementation of turn-key projects, with highly qualified teams of engineering, production, assembly, and technical assistance for the best execution of your project.



Fertron has been in the Brazilian market for four decades. It started its activities in Sertãozinho, São Paulo, providing technical assistance of electronic equipment for instrumentation and process control in the sugar and energy sector.

After being recognized by the market for its intellectual capital in the area of technical assistance, the company established partnerships with the objective of expanding its market scope. In the course of its journey, Fertron became the largest Brazilian integrator in the area of automation and electrics.

Since its creation, Fertron has always invested in the development of new products in the area of industrial and mechanical automation. Currently, it has a wide range of microprocessor and mechanical products of innovative technology.

Whether as a manufacturer or integrator, Fertron aims to provide complete solutions to its customers, both in electrical and automation.

BRANCHES:

- Recife - PE
- Sorriso - MT
- Boca Raton - USA

Fertron supplies technology to the following industrial sectors:



Food and Beverage



Brewery



Energy



Base Industry



Mining



Pulp and Paper



Petrochemicals



Sanitation Industry



Steel Industry



Sucroenergetic

PORTFOLIO OF SERVICES



ENGINEERING CONTROL AND AUTOMATION

Fertron provides equipment and activities related to control engineering and automation for your industry. Therefore, it is part of Fertron's scope of supply, the development of design, manufacture and application of the following activities and products:



Projects

- Automation Master Plan (PDA);
- IOC Projects (Integrated Operations Center);
- Systems Architecture;
- Architecture of industrial networks;
- Routing of communication networks;
- Calculations and specification of industrial measuring instruments;
- Specification for control equipments and automation;
- Projects command and control panels;
- IT Projects (Information Technology) for factory floor;
- Projects for CCTV systems (Closed Circuit Cameras).

Settings

- Modeling and description of production processes for automation;
- PLC configuration accordingly;
- Configuration of supervisory systems;
- Configuration of DCS systems and Hybrids;
- Configuration of digital instruments;
- Configuration of industrial systems communication networks;
- Configuration of active, alarms and meshes management systems;
- Configuration of plant's history; and
- Configuration of plant's management systems.

Equipments

- Automation and control panels;
- Panels explosion proof;
- Remote I/O panels (inputs and outputs);
- PLC/DCS command and control equipment;
- Measurement equipment (transmitters); and
- Equipment communication networks.

Automation Services

- TAF (Panel Factory Approval Tests);
- TAC (Field Approval Tests on Paneles);
- Commissioning of field instruments;
- Commissioning of communication networks;
- Certification of industrial networks with diagnostic tool;
- Assembly of industrial networks;
- Start-up process;
- Assisted operation;
- Technical assistance; and
- Integrators of the main PLC / DCS.

ELECTRICAL ENGINEERING

Fertron has extensive experience in projects, assembly, commissioning and start up specific and dedicated to your industry and the most varied applications. We execute projects of Industrial Electrical Installations, Medium Voltage Cubicles, Motor Control Center (MCC's), Auxiliary generators, according to standards. The panels are designed to meet the main communication protocols (ProfiBus, PInternational ProfiBus and ProfiNet, DeviceNet, EtherNet / IP, ControlNET International).

Therefore, it is part of Fertron's scope of supply, the development of design, manufacturing and application of the following activities and products:



Projects

- Master Plan of Electrical Installations (PDE);
- NR-10 Adequacy Master Projects;
- Executive Electrical Installation Projects;
- Viability Study of Cogeneration;
- Studies of Electrical: Short Circuit Study for Selectivity (Comprehensive Balanced / Unbalance), Short Circuit to Appropriateness Equipment (ANSI/IEC), Study Short Circuit DC, Conventional Selectivity Chronology + Amperometric), Logic Selectivity, study Harmonics and Power Factor, Load Flow (LoadFlow), Cable sizing, Stability, Power Flow DC, Rejection Loads, Motor Starting, Motor Reacceleration, Arc Flash Evaluation, Adequacy of Equipment as the Short Circuit, Transient Electromagnetic, Transient Electromagnetic Switching by Electromagnetic Outbreak, Insulation Coordination, and study of TC's saturation.

Preparation of Technical Proposal / Commercial:

Formed by experienced engineers, the commercial department provides technical and commercial proposals with agility and efficiency:

- Medium and Low Voltage Panel, Electrical Installations, Electrical Instrumentation;
- Visits to the field to survey and analyze project feasibility.
- Elaboration of "BUDGET's" proposals, with the purpose of prospecting new business for electrical applications related to Energy Co-generation, Process or factory enlargement, among others.

Electrical Equipment: Medium Voltage up to 17,5KV / 50/60HZ / 3200A / 31,5KA

- PNMT: Distribution Panels Medium Voltage Class up to 15kV.
- PNMTSEC: Medium Voltage Panels for Sectioning Class up to 15kV.
- PNMTS: Medium Voltage Panels for Voltage Surge Protection in Generator.
- PNMTN: Medium Voltage Panels for Generator Neutral lock .
- PNMAT: Medium Voltage Panels for Grounding Transformers.

All panels (cubicles) medium voltage are designed / constructed as IEC 62271-200 the NEMA.

Equipments (panels) Protection and Control:

- PNBTPESG: Low Voltage Panel for Protection, Excitement and Timing Generators.
- PNBTPPT: Low Voltage Panel for Transformer Protection.
- PNBTPPC: Low Voltage Panel for Capacitors Protection.
- PNBTPSE: Low Voltage Panel for High Voltage Substations Protection.
- PNBTPM: Low Voltage Panel for Measurement and Billing of High Voltage Substations.

Commissioning and Start Up:

- Substation up to 138KV;
- Houses of Forces;
- Generators and Import and Export Systems of Energy;
- MCC's and distribution cables;
- Cubicle Medium Voltage; and distribution cables;
- Grounding systems and SPDA / issuing reports;
- Programming / Gauging Protection Relays (GE / ABB / Siemens / Schneider / Sel).

PORTFOLIO OF SERVICES

PROJECT MANAGEMENT

Fertron's quality management is based on ISO 9001, following the market trend. Managing projects under the project perspective has become a strategy increasingly practiced by organizations, due to the need to add value to their products and services in increasingly unstable environments. Fertron offers its customers a Project Management Office (PMO) structure, where its managing members work oriented to a PMBOK structure, using internationally recognized project management practices. The areas of knowledge that are applied in this PMO are described below, and the main objective of the Office is to support the management of projects, in order to deliver projects to its customers within the contracted timeframe, cost, and scope, as long as they are aligned with the company's strategies.



Description of Knowledge Areas

- Project integration management;
- Project Scope Management;
- Project Time Management;
- Project Cost Management;
- Project Quality Management;
- Human Resource Management Project;
- Project Communications Management;
- Project Risk Management; and
- Project Acquisition Management.

Description of the Project Management Process Groups

- Initiation;
- Planning;
- Execution;
- Monitoring and Control; and
- Closing.

INDUSTRIAL ASSEMBLIES

The Industrial Assemblies Department was created with the purpose of supplying the market demand for qualified and efficient service providers in assembling networks and industrial installations. Currently it has a team of employees fully trained and qualified for the execution of works in accordance with the NR10 standard. Our goal is to establish a close relationship with our customers, providing services that meet their quality, safety, and cost standards, especially in Turn-Key or EPC projects.



Instrumentation

- Manufacture of Supports and Installations;
- Instrument Assembly;
- Process Tubing assembly;
- Electroducts assembly;
- Electric cables tray cable assembly;
- Assembly of cable tray for signal cables;
- Identification and interconnection of signal cables in the panel and field;
- Assembling air distributors in the field;
- Assembly of Air Supply Tubing for Valves;
- Calibration and Gauging of Instruments;
- Commissioning;
- Start-up.

Electrical

- Manufacture of supports and installations;
- Assembly of conduits;
- Assembly of electrical cable trays;
- Assembly of cable trays for electrical cables;
- Electric cables launching;
- Panel assembly;
- Identification and interconnection of electrical cables in the panel and field;
- Commissioning of motors; and
- Start-up of motors.

OTHER SERVICES



Electronic Revisions

- Universal indicators;
- Drivers;
- Current Insulators;
- Signal converters;
- Data acquisition modules;
- Capacitive sensors;
- Auto / Manual Stations;
- Probes concentration;
- Transmitters in general;
- Positioners in general.

Technical Support – 24 Hours

- Control test loops;
- Start-up;
- Assisted operation;
- Inspection and calibration in the final control elements;
- Consulting in sugar and ethanol projects;
- Network Certification.

Panel Revisions

- Automation and electrical panels;
- Preventative in frequency inverters and Soft Start.

Mechanical Revisions

- Boiler bottom valves discharge;
- Mechanical brakes;
- Damper actuators (pneumatic and mechanical);
- Turbines actuators;
- Probes concentration;
- Manifolds;
- Globe Valves.

REFERENCES



PLC AND CONTROLLERS



PLC Citrino FX

The Citrino Programmable Logic Controller has a bold and robust design, as required in field applications, combining efficiency, modularity, expandability, programmability, ease of assembly and network connectivity. Its high-density I/O modules provide a lower investment cost, even for small I/O applications.

Technical Specifications:

- MCPU-1-CPU 500MHz, 20MB memory, battery-backed real-time clock, 10/100Mbps Ethernet interface over Modbus/TCP, high-speed Modbus-RTU Master/Slave, CPU and Ethernet physical-media redundancy support. Requires MCPU base;
- M32DI-24V-Module of 32 isolated 24VDC digital inputs, positive logic. Requires BMIO-1 socket;
- M32DO-TR-Module of 32 isolated digital outputs of 24VDC, positive logic. Requires BMIO-1 socket;
- M16AI-IV-Module of 16 isolated analog inputs, current and voltage. Requires BMIO-1 base;
- M16AO-IV-Module with 16 analog isolated current and voltage outputs. Requires BMIO-1 socket;
- M8AI-IV-Hart-Module of 8 analog inputs in current and voltage. The option to read Hart together with FDT/DTM system is done with current input only. Requires BMIO-1 base;
- M8AO-IV-Hart-Module with 8 analog outputs in current and voltage. The option to read Hart together with FDT/DTM system is done with current output only. Requires BMIO-1 base
- M8FI-Module with 8 frequency inputs (Amplitude 3Vac to 24Vac) without isolation between channels and maximum frequency of 32KHz. Requires BMIO-1 base;
- MFI-PBM-Module PROFIBUS-DP Master. Requires BMFI-PBM base;
- MFI-PBS-Slave Module PROFIBUS-DP. Requires BMFI-PBS base;
- MFI-PNC-PROFINET Controller Module.

Requires BMFI-PNC base;

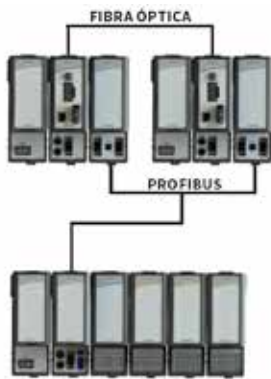
- MFI-PND-Profinet Device Module. Requires BMFI-PND base;
- MRES-Reserve module for base filling;
- Power supply: Typical 24 Vdc (18 Vdc - 28 Vdc);
- I/O Watch mode: display of equipment inputs and outputs, system information, and clock/calendar;
- Automatic/Manual Station: interaction with the controlled process;
- I/O Watch mode: visualization of analog inputs and outputs; I/O Watch mode: visualization of digital inputs and outputs;
- Configuration via Citrino Tools on Ethernet 10/100 Mbps in Windows environment IEC-1131 Ladder Diagrams, up to 1200 instructions;
- Mounting: 35mm DIN rail;
- Weight: 240g (MCPU-1); Bases dimensions (mm): 74 x 185 x 54.3 (WxHxD); Modules dimensions (mm): 65 x 124.3 x 88.7 (WxHxD) for MPS-1, MPS-1RD, MCPU-1, MCPU-2, MFI-PBS, MFI-PND and MEXP-1 without lock and euroconnector;
- Module dimensions (mm): 65 x 124.3 x 115.7 (WxHxD) for all other remaining modules not counting lock and euroconnector;
- Hot Swap: Yes;
- Protection Degree: IP-20;
- Input refresh rate: Check individual manual;
- Operation temperature: 0 °C to 50 °C; and
- Indication: LEDs PWR, Fail, PWR-ST, FB-Err.

PLC Citrino FX Communication Protocols

Citrino PLC, communicates directly in 4 types of protocols: Modbus-RTU (RS-485), Modbus/TCP (ethernet), Profibus-DPV1 and now Profinet. The functioning of the Profinet controller (MFI-PNC) is quite similar to the MFI-PBM module, differing only in controlling the network in Profinet, instead of controlling it in Profibus-DP.



MICROPROCESSED PRODUCTS



PLC Citrino FX Redundant

The redundant automation system using PLC Citrino, aims to reduce the risk of data loss through the parallel operation of two processors, tolerating the eventual failure of one of them. This way the information is updated in real time in them, which allows that in case of failure of one of them the other takes over with the recent data, which avoids disturbances in the process. Some possibilities of switch over:

Technical Specifications:

- MCPU-2: Includes all previous version features (MCPU-1) with the addendum of redundancy features. Requires BMCPU-2 base.
- MPS-1RD: Includes all previous version features (MPS-1) with the addendum detection of power loss at 200 V / Seconds (maximum load). Requires BMPS1-RD base.
- MFI-PBM-2: Includes all previous version of the characteristics (MFI-PBM) with the addendum of redundancy features. Requires BMFI-PBM base.



MFI-PBS | Module Interface Fieldbus | Profibus Slave

The MFI-PBS module (Module Fieldbus Interface - Profibus Slave), also known as remote on Profibus is a module that has the purpose to give remote connection to input and output modules (e.g. MI6AI-IV; M32DO-TR) on Profibus DPV1 protocol. That is, a Profibus Network Master from any manufacturer will be able to communicate with FERTRON I/O modules.



MFI-PND | Module Interface Fieldbus | PROFINET Device

The MFI-PND module (Module Fieldbus Interface - PROFINET Device), also known as remote on PROFINET is a module that has the purpose to give remote connection to input and output modules (e.g. MI6AI-IV; M32DO-TR) on the PROFINET protocol. That is, a PROFINET Controller from any manufacturer can communicate with FERTRON I/O modules.



Quartzo | Compact PLC

The Quartzo is a medium-size PLC that was developed thinking in the industrial automation of machines or small sectors of an industry. Its basic version contains 2 MODBUS-RTU serial communication ports, 1 MODBUS/TCP ethernet port, 32 digital inputs (DI) and 32 digital outputs (DO). It also has versions that can contain analog inputs and outputs (max. 8) and/or frequency (max. 4), which can be defined according to the ordering code table. Despite the hardware limitation for inputs and outputs, the Quartzo can be expanded using the communication ports in Modbus/RTU protocol that can be configured either as slave or master, totally independent of each other. The communication rate can range from 9600 bps to 115200 bps. On the ethernet port it has the client/server platform in Modbus/TCP protocol also independent of each other. As a server, the Quartzo can connect with up to 8 clients simultaneously and as a client it can connect with up to 32 servers in Modbus-TCP. To achieve high performance with all this communication capacity, the Quartzo has a high-performance DSP processor running at 500MHz. In addition to this high performance the user can use up to 16 KB of variables in the ladder or store up to 8K instructions (32 KB of STL instructions).

Technical Specifications:

- 01 Ethernet communication port via Modbus/TCP protocol;
- 02 RS-485 serial communication ports via Modbus-RTU protocol;
- 32 (thirty-two) 24Vdc opto-isolated digital inputs;
- 32 (thirty-two) transistor digital outputs;
- Up to 08 (eight) 10-bit resolution 0-10V / 1-5V / 4-20mA analog inputs;
- Up to eight (08) 4-20mA analog outputs;
- Up to 04 (four) 32Khz frequency inputs and 2 encoder inputs;
- Configuration software, model Quartz tools;
- Operating temperature: 0-50°C;
- Mounting: Screw mounting;
- Degree of protection: IP-20;
- Consumption: Digital power supply 3,5AMmax, Analog power supply 600mA Max;
- Weight: 1.055Kg;
- Dimensions (mm): 272 x 188 x 71 (WxHxD);
- Optional HMI (Under consultation).

MICROPROCESSED PRODUCTS

Product Cod.	Model Cod.	Model Feature
027207	QUARTZO-BS	1 MODBUS/TPC, 2 MODBUS-RTU, 32DI, 32DO (Basic Version)
027208	QUARTZO-4A	1 MODBUS/TPC, 2 MODBUS-RTU, 32DI, 32DO, 4AI, 4AO
027209	QUARTZO-4F	1 MODBUS/TPC, 2 MODBUS-RTU, 32DI, 32DO, 4FI, 2 ENCODER IN
027210	QUARTZO-4A4F	1 MODBUS/TPC, 2 MODBUS-RTU, 32DI, 32DO, 4FI, 2 ENCODER IN
027211	QUARTZO-8A	1 MODBUS/TPC, 2 MODBUS-RTU, 32DI, 32DO, 8AI, 8AO
10.10.001	QUARTZO-8A4F	1 MODBUS/TPC, 2 MODBUS-RTU, 32DI, 32DO, 8AI, 8AO, 4FI, 2 ENCODER IN (Full Version)



Start - Micro-PLC

The Micro PLC Start was developed using SMD technology, which allows the reduction of its size. The fact that it is modular allows the acquisition of only the resources required for the process to be automated. In its basic version, Start features twelve 24V digital inputs and eight transistor digital outputs (open collector). If required, up to two additional boards containing two analog inputs and two analog outputs each can be installed. Thus, Start can contain up to four analog inputs and four analog outputs.

Technical Specifications:

- 12 digital inputs - 24Vdc, one 5Khz fast input;
- 8 opto-isolated transistor digital outputs;
- 4 analog inputs of 10-bit resolution, configurable for 0-10V, 1-5V or 4-20mA (optional modules);
- 4 analog outputs - 4-20mA (optional modules);
- Used in small machines and processes or as a right hand in the complement of large projects and applications;
- Operation temperature: 0-50°C;
- 4 PID control blocks;
- Function blocks, totalizing, linearizing, timers, counters, etc;
- Human-machine interface of simple use with simplified keyboard and LCD 2 lines x 16 characters with back-light;
- Monitoring and interaction with process variables in a simplified and powerful way;
- Automatic/Manual station for each analog control loop;
- Alarm Center: uninterrupted monitoring of up to 16 alarms;
- Event History Center: uninterrupted monitoring of up to 48 events;
- Central or parameters mode (32 analog plus 32 digital, all of which can be viewed on the built-in HMI);
- RS-485 serial communication (9600bps to 115200bps): Modbus-RTU protocol;
- Programming in IEC-1131 Ladder language in Windows environment with totally Free software;
- Ladder Debug with Force mode: forced digital inputs and outputs (allows logic test before connection in the process);
- Hardware with small component technology - SMD;
- Flash and NVRAM memories, with calendar and real-time clock;
- Built-in full-range (90-240Vac) power supply;
- Dimensions: (W x H x D) 96 x 96 x 155mm; and
- IP-20 protection grade: panel mount.



Single Loop - Silotron

Silotron is a universal single-loop low cost controller. The equipment is designed to be used in control analog processes (temperature, voltage or current). The control operation can be done by on analog or digital valve.

Technical Specifications:

- 1 Universal analog (4-20 mA, 0-5 Vdc, Pt-100, Temopar - E, J, K, N, T, R, S);
- Resolution: 12 bits;
- Accuracy: 0.1% of maximum range;
- Impedance: 4-20 mA - should contain a shunt $\leq 100 \Omega$ / 0-5 Vdc - should be $\geq 1 \text{ K ohms}$ / Thermocouple - should be $\geq 1 \text{ M}\Omega$;
- Current excitement Pt-100 should be 0.750 mA $\pm 50 \text{ mA}$;
- 1 analog output current (4-20mA or 0-20mA);
- Resolution: 20,000 steps;
- Accuracy: 0.02% of the maximum range;
- 2 digital outputs to relay with one common;
- Maximum current: 1.5 A;
- Power: universal (AC): 85-265 Vac / 50-60Hz;
- Setup: performed through keyboard and display;
- Insulation: No isolation between analog input and analog output;
- Operating Temperature: 0 ° C to 50 ° C;
- Protection: IP-20;
- Dimensions in mm (H x W x D): 48 x 48 x 100;
- Material: Plastic (ABS);
- 7-segment display: 2 lines with 4 digits each;
- Ventilation: natural.



CDP-400 - Controlador Multi-Station

The CDP 400 allows full configuration from the front panel, eliminating the use of programmers and dedicated interfaces in an intuitive and friendly way, it was fully structured by sequencing screens by block names, where the operator has the information for parameterization and characterization of the same. It is also possible to calibrate the inputs and outputs, adjust the mesh tuning, build linearization curves, adjust gain/Bias/limits, among other functions.

Technical Specifications:

- Liquid crystal display;
- 6 analog Multi-Sensor inputs;
- 4 frequency inputs;
- 4 digital inputs;
- 4 digital outputs;
- One RS 485 serial communication channel integrated with Token-Passing;
- Opto-isolated hardware;
- Flash memory, NVRAM, EPROM, with real-time clock;
- PEER-TO-PEER design with Baud Rate;
- Adjustable up to 57,600 bps;
- Communication protocol with OPC driver;
- Fersoft Configurator in Windows NT environment and via controller front end;
- Display of 16 alarms with 12 characters each;
- Trend graphs; and
- Up to 170 configuration blocks, including real polynomials up to 16th grade.

DATA ACQUISITION AND INDICATORS



SAMGE

An analysis and measurement system for electrical quantities has the conception of monitoring power and energy measurements. With it you can measure the following electrical parameters in real time: voltage, current, power (active, reactive, and apparent), power factor, total harmonic distortion (THD), phase angle, active power and reactive power demand, frequency, among others. With the battery included in the hardware, the equipment will have capability to store up to 20 variables in intervals from 1 second to 60 minutes.

Technical Specifications:

- 128 x 64 bit graphic display;
- Front keypad to access settings;
- Universal network phase measurements with 2 or 3 measuring elements, 3 or 4 wires (delta or star connection);
- Current measurement (L1, L2, L3 and N) with internal CT at 5A;
- Signal limit from 10% to 120%;
- Voltage measurement (L1, L2, L3);
- Voltage L - N (63V, 127V, 220V, 254V);
- Voltage L - L (110V, 220V, 380V, 440V);
- Signal limit from 10% to 120%;
- Measurement accuracy class of 0.25% for all output types;
- 4 optional analog outputs from 4 to 20 mA (750 Ω maximum load) or 0-10 VDC or 0-5 VDC;
- All outputs must share the same common point;
- Total of 4 optional open-collector outputs;
- All 4 outputs can be configured as any variable alarm;
- The 4 outputs can be configured as pulses from 6545 to 36000 / h of selected proportional variables. The pulse width can be adjusted from 50 to 500 ms per independent output;
- The output requires external power (60 Vcc is typical of 24 Vdc) and is capable of providing 20 mA per output;
- Non-volatile data memory for mass storage;
- The data stored shall contain: Year, Month, Day, Hours, Minutes and, in addition to the previously set measurement variables;
- It can be configured up to 20 variables and time intervals of 1 second to 60 minutes;
- Nominal Frequency 47Hz to 63Hz;
- Operating temperature from 0 ° to 60 ° C;
- Insulation:
 - Between power and the rest: 2.5KV / min - 60Hz;
 - Between RS485 and Digital Outputs: 0.5 KV / min;
- Universal Source:
 - (85-240) AC;
 - (90-300) Vcc;
 - Lower consumption 10 VA
- RS-485:
 - Modbus-RTU protocol for communication with supervisory and configuration software;
 - Baud-rates: 9600 bps, 19200 bps, 57600 bps, 115,200 bps;
 - Profibus-DP protocol for communication with master (optional to be developed in version 2);
 - Protection: IP20 - panel mounting;
 - Dimensions (W x H x D) 96 x 96 x 155mm.



Multi-Point

The acquisition module Multi-Point of Fertron remote data is a very compact product. The multi-point allows reading up to eight signals of various types, such as thermocouples types E, J, K, N, R, S and T, Pt-100, 0-80mV and 4-20 mA in the same device and send them to a PLC or supervisory system - SCADA via RS-485 serial communication Modbus-RTU protocol. The thermocouples and Pt100 inputs contains internal linearization does not require any external adjustment made by the user.

Technical Specifications:

- 8 analog inputs: Thermocouple E, J, K, N, R, S and T, Pt-100, and 0-80mV 4-20mA;
- Built-in power supply for up to eight 2-wire transmitters;
- You can be a slave in the Modbus-RTU network a PLC Master, for example, Mini Action PLC, PLC Evolution, and be monitored via monitoring software;
- Contains internal linearization for the temperature inputs Thermocouple and Pt-100 with indication in ° C or ° F;
- square root extraction function for each of the analog inputs;
- Up to two alarms associated with each input and can drive up to 2 relays (of 1.5 mA);
- Configuration: 2-set points for each input (high and / or low);

- Communication: RS-485 serial Modbus RTU protocol with selectable baud rate at 9600bps, 19200bps, 57600bps or 115200 bits per second, stop bits (1 or 2) and parity (even, odd or none);
- Has switching power supply full range: 85 to 265Vac or 100 to 250Vdc to 47-63Hz; and
- Data update rate: 200ms for 8 inputs. Thermocouples accuracy R: E, J, K, N + - 0.1% of the maximum range;

Precision:

- Thermocouples: T, R, S + - 0,15% of the maximum range;
- 4-20 mA + - 0.1% of full scale;
- Pt-100 + - 0.1% of full scale;
- Dimensions: (W x H x D) 105.5 x 90 x 60mm;
- Degree of protection: IP-30 (plastic box in ABS) and DIN rail mounting.



Multi-Point-R

The Multi-Point-R acquisition of remote data module is a very compact product. Multi-Point-R allows reading up to eight signals of various types, such as thermocouples types E, J, K, N, R, S and T, Pt-100, 0-80mV and 4-20 mA in the same device and send them to a PLC or Supervisor System - SCADA via RS-485 serial communication Modbus-RTU protocol. Thermocouple inputs and Pt-100 contain internal linearization, not requiring any external adjustment made by the user. The thermocouples entries still have the cold junction compensation. The Multi-Point - R has switching power supply 90-265 Vac to 47-63Hz ou 100 a 250 Vcc. There is option to 24Vcc.

Technical Specifications:

- Degree of protection: IP-66;
- Inputs: 8 analog, 16-bit resolution opto isolated: thermocouples types E, J, K, N, R, S, Pt-100 (-200 ° C to 800 ° C), and 0-80mV 4-20mA;
- Outputs: 2 digital opto isolated: relay changeover contacts - independent configuration;
- Serial communication - RS 485: Modbus RTU in 9600, 19200, 57600 or 115200;
- high and low alarms: Indication via LEDs;
- Power switching power supply: 90 to 265Vac for 47-63Hz or 100 to 250Vdc or 24Vdc;

- Parameter - Ferconf 2.6 or higher;
- Windows environment and Modbus RTU protocol;
- Operating Temperature: 0 to 55 ° C - 20 ° C to 65 ° C storage (cold junction compensation for couples or term inputs in mV is made using the LM35 sensor on the inputs 34,35 and 36);
- Power for transmitter: 8 links to VTM 2 common wires to 8 transmitters;
- Dimensions: WxHxD - 226x207x104.



DSI-500

The universal indicator DSI-500 is a tool for reading and display of process variables, with a modern and elegant design. The display equipment, with five numeric digits in green LEDs, allows a clear and smooth indication. The display values in floating point allows better use of the five digits of the display. The gear box in extruded aluminum, ensures fine workmanship and provides excellent insulation against electromagnetic noise. The DSI-500 is designed with SMD technology, with electronic components of the latest generation and low power consumption, using optical coupling in all its inputs and outputs. It is modular, allowing the user to tailor the product to their needs.

Technical Specifications:

- Modular universal indicator multi-sensor;
- Analog multi-sensor input: 4-20mA / 0-5VDC / 0-10Vdc / 0-50mV / 0-100mV Pt-100 (-200 to 800 ° C) / thermocouple (type J and K) opto-isolated and with resolution 16 bits;
- Contains linearization for thermocouple inputs and Pt-100 with indication in ° C or ° F;
- Frequency input: 0-10 KHz opto-isolated;
- Retransmission: 4-20 mA or 2-10 Vdc;
- Resolution: 16 bits (65535 steps);
- Up to 2 modules digital outputs changeover contact relay for alarms;
- Communication module RS-485 serial (Modbus

- RTU);
- Numeric display: 5 digits and indicated floating point;
- Next-generation Microcontroller, low consumption (Flash, RAM, internal EEPROM);
- Full-range Power: (85-265 Vac / 47-63 Hz), 100-250 Vdc or 24 Vac;
- Aluminium housing Extruded with standard 96 x 48 mm DIN size;
- Degree of protection: IP-20 (panel mount);
- User-friendly interface; R Parameter setting: via keypad and / or via PC;
- Update rate: 200 ms;
- Precision.

SOFTWARES CONFIGURATORS

Citrino Tools

The Citrino Tools is an integrated environment for configuration and monitoring of PLCs Citrino family. It is modern with a simple and efficient graphical interface and features that provides easy use and convenience to the developer. With Citrino Tools, Citrino whole family is completely configured and parameterized by setting the modules that make up each system, memory distribution, definition of tags, user logic, communication and monitoring of the data.

Technical Specifications:

- Designed for the Windows environment;
- Graphical Programming Ladder and STL instructions;
- Network Configuration Modbus RTU, Modbus / TCP and Profibus;
- Communication Ethernet 10/100 Mbps;
- Communication Ethernet 10/100 Mbps;
- Monitoring of variables and debug programming, architecture and communication;
- Graphical display of system variables;
- Supports print settings.

FERCONF

Ferconf is an advanced software developed by Fertron for Windows. Easy to install and operate, it allows configuration, monitoring and diagnosis of Fertron products. Should note the debug capabilities that allow the user to simulate situations and verify the operation of the Evolution ladder, solving many field problems. The Ferconf allows connection to the equipment via either RS-485 serial as in Ethernet networks 10/100 Mbps.

Technical Specifications:

- Designed for the Windows environment;
- Graphical Programming Ladder;
- Configuration of Modbus-RTU, Modbus/TCP, and Profibus networks;
- Communication over Ethernet 10/100 Mbps;
- Monitoring of variables and debug programming.

FERSOFT

Fersoft is the configuration software for monitoring Fertron's products and has Ferbus communication protocol. Fertron products are communicating on the serial line will be shown on the home screen of Fersoft through a tree in Windows Explorer-style. The Fersoft may present for each product one or more configuration options, monitoring and parameterization

Technical Specifications:

- Designed for the Windows environment;
- Graphical Programming Ladder;
- Offline configuration in master-slave or token-passing modes;
- RS-485 serial communicatio;
- Variable monitoring.

Quartzo Tools

Quartzo Tools is the CLP quartz configuration software. It allows the creation and edition of projects in a friendly environment containing several tabs to configure your memory, tags, programming, communication and monitoring of the data present on the machine.

Technical Specifications:

- Designed for the Windows environment;
- Graphical Programming Ladder;
- Network Configuration Modbus RTU, Modbus / TCP and Profibus;
- Communication Ethernet 10/100 Mbps;
- Monitoring variables in debug programming and communication;
- Graphical display of system variables.
- Supports printing the settings.

COMMUNICATION INTERFACE AND CONFIGURATOR

Communication Interface IUH-01

The Interface USB Hart is a device for configuration of transmitters with Hart communication protocol. It is ideal for setting equipment installed in the field, due to its small size and does not require external power. In the following figure shows the installation diagram:

Technical Specifications:

- Power: No external power required;
- Signage: Led Tx and Rx;
- Communication: USB Conversion to Hart;
- Insulation: Galvanic isolation between instrument and PC
- Power: No external power required;
- Signage: Led Tx and Rx;
- Communication: USB Conversion to Hart;
- Insulation: Galvanic isolation between instrument and PC;
- Compatible with Windows operating system;
- Dimensional: 82.5 x 42.5 x 29mm;
- Weight: 0.1kg



HART HIBLUE Interface



The HIBLUE Hart interface is a complete communication path to a HART network. It will allow personal computers to read and/or configure data on HART devices. The computer's Bluetooth antenna provides a wireless connection, eliminating the need for difficult access to field instruments, the HART loop connector is electrically isolated from the computer terminals. These are the key features of the process control network. HIBLUE is capable of working with most configuration software on the market, making it a reliable and cost-effective choice.

Technical Specifications:

- Ideal for configuration, data acquisition, and digital control;
- Factory tested to work with all HART field devices;
- Extremely low leakage current (<1 uAdc) will not interfere with the current loop;
- Compatible with Bluetooth connector 2.0 or later;
- Full isolation between HART network and computer chassis;
- Small size and lightweight housing, long battery life.
- Compatible with Bluetooth connector 2.0 or later;
- Full isolation between HART network and computer chassis;
- Small size and lightweight housing, long battery life.

HTCOM Handheld HART Configurator



The Handheld HART Configurator is a cost-effective option that can communicate with all HART instruments in the field. With HART modem (to USB port) or Bluetooth (wireless) options it can be used in labs, control rooms and light industrial environments. It has reasonable shock, vibration and electrical noise resistance. Besides being a HART communicator, HTCOM has the functionality of a personal computer. FHCONF software is capable of accessing a HART network regardless of device model and manufacturer. Physical compatibility to the HART protocol is ensured from the earliest HART4 versions to the latest HART 7.

Technical Specifications:

- 2 GB RAM;
- 32 GB flash memory storage;
- Windows 7 32b Bits;
- Atom Z670 1.5 GHz processor;
- 10-inch screen;
- Bluetooth;
- Wireless Wifi 802.11n;
- Internal battery 7.4 VDC 3,8000 mAh 28.12Wh;
- 1 Microphone;
- 1 Headphones;
- 2 USB Inputs;
- 1 Front Camera 2 M Pixels;
- 1 Rear Camera 5 M Pixels;
- 1 Hand Strap;
- 1 Shoulder strap;
- 1 Touch Pen;
- 1 AC/DC Adapter 100-240v | 19Vdc 3,42A, 65W;
- Weight 1.5 Kg;
- Dimensions: 30 x 235 x 40 mm.

CONVERTERS AND AUTO-MANUAL STATION

CD-400



The CD-400 provides at its output, standard signal with value proportional to the number of active sensors, connected to their digital inputs. It has up to ten optically isolated digital inputs, in which can be connected to sensors with open collector output, dry contact, voltage level as STF-2500C and STF-2500B and others. It provides power supply for sensors, simplifying application projects. Among the possible applications, there is the measurement and level control of various materials depending on the type of sensor used. Here some features: CD-400 is built armored box for assembly in the field, was developed using SMD technology, which allows the reduction of its size and features ten digital inputs 24V, an analog output and serial communication.

Technical Specifications:

- Dimensions: W x H x D - 220 x 120 x 80mm;
- Power: 90-240 Vac voltage with sel. Auto 50°C Max;
- Frequency: 50 / 60Hz;
- Fuse: micro 0,5A;
- Output: digital inputs - 10 opto-isolated, 24 Vdc;
- Digital Outputs - 4-20mA, Max 750ohms impedance;. Maximum error: +/- 0,04mA;
- Hardware: program storage - Flash memories and NVRAM;
- Communication: RS-485, Modbus RTU - 9600 bps, 19200 bps, 57600 bps or 115200 bps.



Converter CNV-CA-420

The power converter CNV-CA-420 is intended for alternating current signal conversion for standard 4-20 mA DC signal for application to instrumentation and control. The equipment has the features galvanic isolation between input, output and power, take up little space for panels due to a small size with its fixation on standard DIN rails.

Technical Specifications:

- Power: 85-265VAC \ 90-300Vdc;
- Consumption: 3W approx .;
- Note: no;
- Measuring range: 0-5A (c);
- Output: 4-20mA (RL max 750Ω);
- Applied voltage: 2,5 kV / 60Hz 1min;
- Surge Protection and Transient: 5KV;

- Set: Trimpot;
- Operating Temperature: 0 – 60°C;
- Degree of Protection: IP-20;
- Fixing: Standard DIN rail;
- Weight: 0,1 Kg approx; and
- Dimensions: 75 x 22,5 x 110,8mm (H x W x D).



Conversor UCV-500

The universal converter UCV-500 is a device for the analog signal conversion to 4-20mA. It engages in one product, the function that was previously intended to separated products. UCV-500 was designed following international standards to have a high quality and to provide excellent insulation against electromagnetic noise. The UCV-500 was developed with SMD technology, with electronic components of the latest generation and low power consumption, using optical coupling in all its inputs and outputs.

Technical Specifications:

- Analog Input: Multi-sensor 4-20mA / 0-5VDC / 0-10Vdc / 0-50mV / 0-100mV / Pt-100 (-200 to 800 ° C);
- Thermocouple: in ° C or ° F (type J and K) opto-isolated and with 16-bit resolution;
- Universal Converter: modular multi-sensor;
- Frequency input: 0-5KHz opto-isolated;
- Retransmission: 4-20mA;
- Communication module RS-485 serial (Modbus RTU);
- It can be used as a backup to the other dedicated

converters;

- Application: monitoring and control of motors and low voltage in battery banks;
- Next-generation Microcontroller, low consumption (Flash, RAM, internal EEPROM);
- Full-range Power: (90-240VAC / 47-63Hz) or 125-250Vcc;
- Parameterization: via PC with Ferconf software (Free);
- Dimensions (W x H x D) 42 x 80 x 110mm;
- Degree of protection: IP-20 (Installation 35mm DIN rail).



CD-420

The CD 420 converter is intended for applications in level measurement of solids and liquids where continuous measurement is not possible for process reasons. The CD 420 operates in conjunction with capacitive proximity sensors mod. STF-2500B, or any similar sensors, including electromechanical ones, that provide open-collector or dry-contact outputs. The output of the converter is adjustable from 0 to 100% of the span, and accepts up to six sensors. In cases where active sensors are used, such as the STF-2500 B, the CD-420 already provides the supply voltage for them, simplifying application designs by eliminating the need for external auxiliary DC power supplies.

Technical Specifications:

- Power supply: 110/220Vac 60Hz;
- Inputs: 1 to 6 digital inputs (opto-isolated);
- Outputs: 1 output of 4-20mA analog signal;
- 1 output of -12Vdc/450mA (for power supply of up to 6 sensors of 70mA);

- Operating temperature: 0-50C;
- Mounting: DIN rail 35mm or screws;
- Protection Degree: IP-00;
- Consumption: 9,6VA;
- Weight: 705g; and
- Dimension: 75x100x123mm (HxWxD).



BK-300

BK-300 is a emergency station device for manual operation of a control elements in case of a controller failure. The BK-300 can also be used as Manual / Automatic transfer station with or without bumpless characteristics, where the act of transfer does not generate disturbances in the process under control. BK-300 station can operate in automatic mode, the analog input value is faithfully repeated on the analog output being transparent to the process. When in manual mode, the operator controls the process via a potentiometer on the machine's front panel. BK-300 station is equipped with a digital input failure "Fail" destined to failure warning connection controllers and PLCs. When BK-300 station is in automatic mode and the fault signal is actuated, the analog output goes to the safety value and acts digital output that can be used to alert signal.

Technical Specifications:

- Power: 127 / 220Vac 50 / 60Hz;
- Consumption: 9W;
- Operating Temperature: 0-50oC;
- Channels: 01 channel;
- Analog Input: 1-5V / 4-20mA (250 Ohms impedance);
- Analog output: 4-20 mA (max 750 Ohms impedance.);
- Digital Input: Dry contact NO or NC, open collector;
- Saída digital: contato seco NA (max. 220Vca/4A);

- Digital output: dry NO contact (max 220Vac / 4A.);
- Linearity better than 0.1% FS;
- Accuracy better than 0.35% FS;
- Repeatability: 100%;
- Front mounting panel;
- Weight: 305g;
- Degree of protection: IP-20;
- Dimensional: 50x98x163 (WxHxD).



Interface Serial RS-400

The RS 400 is a serial interface that allows retransmission of RS 485 segments in order to increase the range of the line in 1.2 km increments. The RS 400 interface automatically adapts to the baud rate and has no internal jumpers or switches. In addition, it uses automatic hardware synchronization of transmission and reception, allowing the use of any software when connected to a PC.

Technical Specifications:

- Power Supply: 127 or 220Vac 60Hz selectable per terminal block;
- Indication: LED indication of Power 1, Rx, Tx and Power 2 signals;
- Communication: RS-232 to RS-485, RS-485 isolator/repeater;
- Operation temperature: 0-50°C;
- Assembly: Fixing with screws;
- Protection Degree: IP-20;
- Consumption: 220 Vac (17 mA as Interface and 18 mA as Isolator/Repeater), or 110 Vac (27 mA as Interface and 30 mA as Isolator/Repeater);
- Weight: 460g;
- Dimensions (mm): 143x82x42 (WxHxD).

JUNCTION BOX

CJF – 400



The Intelligent Junction Box (CJF-400) is intended to protect the main branch of a fieldbus installation on IEC61158-2 physical media (PROFIBUS PA and FOUNDATION™ fieldbus) against short circuits generated on the branches (between + and -), limiting the current to around 50 mA, so that this spurious current does not propagate to the other branches or to the main branch. The branch that was shorted should start working again, as soon as the short is removed.

Technical Specifications:

- The equipment may contain 4 (CJF-400-4) or 8 (CJF-400-8) spurs;
- Equipment developed in mechanics with protection degree IP66 with cable gland;
- Short-circuit indication LED on each channel individually;
- Isolation: None;
- Source: 9 to 31 Vdc bus;
- Physical medium: IEC-61158-2 compliant;
- Protocols: Profibus PA and Foundation fieldbus compliant;
- Maximum current (short circuit): 50mA;
- Maximum current in the main trunk: ≤ 2.5 A;
- Maximum voltage drop (per branch): 0.3V for 20 mA current;
- Terminator: 100 Ω resistor and 1 μF capacitor;
- Surge protector: 39V (typical), 41V (maximum);
- Operating temperature: 0° to 60°C.

SOURCES



FA-2405 - 24vdc 5a Full Range Power Supply

Technical Specifications:

- Universal input (Full Range);
- 24 VDC / 5 A;
- Small, Lightweight and High Efficiency;
- Short-circuit, overload and overvoltage protection;
- Cooling by natural convection;
- DIN rail mounting;
- 100 % Tested at full load;
- LED operation indication;
- Dimension: 65.5 x 125.2 x 110mm;
- Weight: 1.035 Kg.



FA-2410 - 24VDC 10A Full Range Power Supply

Technical Specifications:

- Universal input (Full Range);
- 24 VDC / 10 A;
- Integrated active PFC function;
- Protections against short-circuit, overload, overvoltage and overtemperature;
- Cooling by natural convection;
- DIN rail mounting;
- LED operation indication;
- 100 % Tested at full load;
- Dimension: 125,5 x 130 x 110mm;
- Weight: 0,56 Kg.

ISOLATORS



ISO-100 I/I – 1 Channel Isolator

The ISO-100 I/I signal isolator is used for electrical isolation of electronic components in instrumentation loops, in order to avoid various problems, especially in systems that can be influenced by noise, such as harmonics and ground loops with high precision and high linearity throughout the range. It has the special feature that it does not require an auxiliary power supply. The 4-20mA loop at the input takes care of powering the circuit itself, which generates the output current in an active and galvanically isolated manner. Among countless applications, the ISO-100 I/I can be applied together with transmitters, frequency inverters, PLCs, process controllers, among others.

Technical Specifications:

- One analog input 4 - 20mA;
- One analog output 4 - 20mA;
- Dimensions: 10 x 10 x 85 mm (HxWxD).



ISO-100 U/U

The ISO-100 U/U signal isolator is used for electrical isolation of instrumentation loop electronics in order to avoid various problems, especially in systems that can be influenced by noise, such as harmonics and ground loops. It is composed of an analog input (0 - 10 Vdc) and an analog output (0 - 10 Vdc) of high precision and linearity over the entire range. Among countless applications, the ISO-100 U/U can be applied together with transmitters, frequency inverters, PLC's, process controllers, among others.

Technical Specifications

- 1 analog input 0 - 10Vdc;
- 1 Analog output 0 - 10Vdc;
- Power supply voltage: 24Vdc;
- Dimensions: 55.5 x 12.5 x 82.5 mm (HxWxD).



ISO-100 U/I

The ISO-100 U/I signal isolator is used for electrical isolation of instrumentation loop electronics in order to avoid various problems, especially in systems that can be influenced by noise, such as harmonics and ground loops. It is composed of an analog input (0 - 10 Vdc) and an analog output (4 - 20 mA) of high precision and linearity over the entire range. Among countless applications, the ISO-100 U/I can be applied together with transmitters, frequency inverters, PLC's, process controllers, among others.

Technical Specifications:

- 1 analog input 0 - 10Vdc;
- 1 analog output 4 - 20Vdc;
- Power supply voltage: 24Vdc;
- Dimensions: 55.5 x 12.5 x 82.5 mm (HxWxD).



ISO-300 I/I – 3 Channel Isolator

The signal isolator ISO-300 I/I is used for electrical isolation of electronic components in instrumentation loops, in order to avoid various problems, especially in systems that can be influenced by noise, such as harmonics and ground loops with high precision and high linearity throughout the range. It has the special feature of requiring no auxiliary power supply. The 4-20mA loop at the input takes care of powering the circuit itself, which generates the output current in an active and galvanically isolated manner. Among countless applications, the ISO-300 I/I can be used together with transmitters, frequency inverters, PLCs, process controllers, and others.

Technical Specifications:

- Three analog inputs 4 - 20mA;
- Three analog outputs 4 - 20mA;
- Dimensions: 37 x 51 x 83 mm (HxWxD).

Signal Isolator IS-600 Fertron



The analog signal isolator IS-600 is used in electrical insulation electronics mesh instrumentation in order to avoid several problems, especially in systems that might be affected by noise, such as harmonics. Among many applications, the IS-600 can be used in conjunction with pH transmitters, frequency inverters, PLCs, process controllers, among others. IS-600 signal isolator consists of six analog inputs (4-20mA or 0-10V, configurable) and six analog outputs (4-20mA) opto-isolated.

Technical Specifications:

- Power supply: 90-240VAC / 47-63Hz;
- Channels: 6 Independent Channels;
- Input: 4-20mA or 0-10Vdc;
- Output: 4-20mA;
- Zero and Span: Factory setting;
- Insulation: 2KV between inputs and outputs.

ISO-485-100 Physical Medium Isolator Fetron



The isolator RS-485 (ISO-485-100) is intended to isolate electrically a RS-485 signal. When a product contains noise or spurious that can be transmitted in the RS-485 physical environment, this causes the entire row to be compromised. That is, the network master can not communicate with other devices on the line if one of them is injecting noise on entire screen. Through the ISO-485-100, the serial line is galvanically isolated from the line that may contain spurious and thus, the main line which contains the master is not affected. ISO-interface 485-100 may also be used as a signal repeater at a rate of up to 115200 bps.

Technical Specifications:

- Signal reception status indication LED (master) and the slave transmission signal;
- Power LED to indicate power up the system;
- Insulation: 1KV / min minimum;
- Source: Bus 18-28 Vdc;
- Maximum current consumption: 100mA;
- Terminators: according to standard Modbus and there should be two terminators (1 at each end of the circuit);
- Surge protector on the serial line: 15V (typical);
- Surge Guard in power: 30V (typical);
- Operating Temperature: 0 ° to 60 ° C;
- Protection: IP-20;
- Mounting: DIN Rail.

CAPACITIVE SENSORS

Capacitive Sensor STF-2500C



The STF-2500C is a precision electronic device intended to detect various types of solid or liquid materials in aggressive environments or in applications where conductive sensors are not shown due to the presence of moisture, corrosion, etc.

Technical Specifications:

- Power supply: 30,5Vdc;
- Consumption current: 11mA at 30,5Vdc;
- Indication: Status leds;
- Sensibility: 0-50mm (adjustable);
- Communication: AS-Interface network;
- Addresses: 62 addresses (0 - 31 A or B);
- Data bits: Bit0: Decrement; Bit1: Increment;
- Bit2: Action; Bit3: Prog;
- IO code: B(hex);
- Operation temperature: 0-50°C;
- Mouting: Screw-fixed;
- Degree Protection: IP-66;
- Weight: 280g; and
- Dimension: 42mm x ø128mm (Height x Diameter).

Capacitive Sensor STF-2500ASi



The STF-2500ASi sensor is a precision electronic device intended to detect various types of solid or liquid materials in aggressive environments or in applications where conductive sensors are not shown due to the presence of moisture, corrosion, etc. The STF-2500ASi sensor differs from capacitive sensors available in the market by both the AS-Interface network communication, which allows the monitoring of several sensors in a single cable and remote adjustment of its sensitivity, as its large front sensing area, making it suitable for the detection of porous solid or uncompressed, which have voids such as found in sugarcane bagasse, chemicals, grains, etc. It is produced with casting polypropylene (PP) in black and electronic circuit encapsulated in epoxy resulting in a fully waterproof sensor. PP4x0.5mm cable with circular connectors, and an 8x26AWG cable with circular

Technical Specifications:

- Power: 30,5Vcc via AS-Interface network;
- Current consumption: 11mA in 30,5Vdc;
- Display: LED status "ASi", "Prog", "Power" and "Action";
- Sensitivity: 0-50mm (adjustable);
- Communication: Network AS-Interface;
- Address: 62 addresses (0 - 31 In or B);
- Data bits: Bit0: Decreases; Bit1: Increments; Bit2: Action; Bit3: Prog .;
- IO code: B (hex);
- Operating Temperature: 0-50 ° C;
- Installation: Fixing the screws;
- Degree of protection: IP-66;
- Weight: 280g;
- Dimensions: 42mm x ø128mm (Height x Diameter).



DCS-BT Microprocessed Digital Capacitive Sensor FERTRON

The DCS-BT Digital Capacitive Sensor is a precision microprocessor-based electronic device, designed to detect solid materials or liquids in aggressive environments where conductive sensors are not suitable due to the presence of moisture and corrosion. Configured through an Android application via Bluetooth wireless connection, the DCS-BT differs from capacitive sensors available on the market for the ease and safety of adjustment from a distance, and also for its large sensing area, making it suitable for the detection of porous solids or non-compacted solids that have voids such as those found in sugarcane bagasse, chemicals, grains, etc. The DCS-BT is produced with a black polypropylene (PP) housing and its electronic circuitry encapsulated in epoxy, resulting in a totally waterproof sensor. When used in conjunction with a Fertron CD-420 signal converter, Fertron sensors can be used in level monitoring and control systems in applications where continuous level measurement is not possible or economically viable.

Technical Specifications:

- Sensitivity of detection: 0 - 50mm;
- PNP and NPN digital outputs;
- Bluetooth 4.2 communication;
- Configured via Android application;
- Power supply 12 ~ 30 Vdc;
- LED indication;
- Operation temperature: 0-50°C;
- IP67 degree of protection;
- Screw fixing;
- Dimension: 42mm x Ø127mm (H x D);

Configuration Specifications and Monitoring:

- Access protection by user-defined password of up to seven characters;
- Visualization of the detection level value of the capacitive sensor;
- Auto Zero and Span adjustment;
- Fine adjustment;
- Detection delay time adjustment;
- Sets device name on the network;
- Blink function to show which sensor is connected;
- Output status indication.

FIELD INSTRUMENTS



20301 - Temperature Transmitter

The 20301 is an excellent solution for temperature measurement applications. With the HART protocol, the 20301 is easily configurable via desktop or configurator field type "hand held". The high precision electronics with an advanced thermal compensation process provides optimal performance with sensors type RTD and thermocouples. In addition, the 20,301 can also operate with transducers volt outputs signals ranging from 1mV-1V or outputs in Ohms, which through a current source controllable by software, it can read resistance values.

Technical Specifications:

- Transmitter 4-20 mA with HART communication;
- Sensor type Resistance (RTD) Thermocouple (TC), diode and transistor;
- one sensor with 2, 3 or 4-wire configuration;
- Dual sensor for Differential reading, average, maximum and minimum;
- Voltage input for Voltaic Transducers;
- Current output for Ohmic transducers;
- Sensor and alarm fault detector sensors;
- Minimum Isolation 500V;
- Compatible robust industrial installation



11301D - Differential Pressure Transmitter

The 11301D transmitter is an excellent alternative to differential pressure measurement generally used in industrial process controls. The mechanical part of this transmitter is a derivation of the pressure transducer technology Capacitance with 50 years of history and innovations which have proved their robustness, accuracy and reliability. The electronics has a similar story. It was born with analog technology 4 / 20mA, incorporated digital microprocessors turning this into an intelligent transmitter. Always encompassing electronic, mechanical and digital communication innovations, today this transmitter is in control base process.

Technical Specifications:

- HART 4/20mA technology, ideal for data acquisition and process control;
- Pressure measurement with ranges from 1.25 Bar to 200 Bar;
- Over pressure and static pressure suitable for industrial installations;
- Compatible with a variety of fluids and gases;
- Suitable for pressure, level, flow, and Venturi speed;
- Compatible with tubes and industrial connections, option for flanges, and remote seal.

MICROPROCESSED PRODUCTS



11301G - Gauge Pressure Transmitter

The 11301G transmitter is an excellent alternative for measuring gauge pressure, typically used in industrial process controls. The mechanical part of this transmitter is a derivation of the pressure transducer technology Capacitance with 50 years of history and innovations which have proved their robustness, accuracy and reliability. The electronics has a similar story. It was born with analog technology 4 / 20mA, incorporated digital microprocessors turning this into an intelligent transmitter. Always encompassing electronic, mechanical and digital communication innovations, today this transmitter is in control base process.

Technical Specifications:

- HART Technology 4 / 20mA, ideal for data acquisition and process control;
- Pressure measurement with 1.25 mbar - 200 bar;
- Under pressure and static pressure suitable for industrial premises;
- Compatible with a variety of fluids and gases;
- Suitable for pressure, level, flow, and Venturi speed;
- Compatible with tubes and industrial connections, option for flanges, and remote seal.



11201G - Gauge Pressure Transmitter

The transmitter 11201 is an excellent alternative for measuring gauge pressure, typically used in industrial process controls. The mechanical part of this transmitter is a derivation of the pressure transducer technology for resistance "strain gage", built with ceramic diaphragm which provides robustness, accuracy and reliability. The electronics was born with analog technology 4 / 20mA, incorporated digital microprocessors turning this into an intelligent transmitter. Always encompassing electronic, mechanical and digital communication innovations, today this transmitter is in control base process.

Technical Specifications:

- HART Technology 4 / 20mA, ideal for data acquisition and process control;
- Pressure measurement with 20 bar - 350 bar;
- Under pressure and static pressure suitable for industrial premises;
- Compatible with a variety of fluids and gases;
- Suitable for measuring pressure castor bean;
- Compatible with tubes and industrial connection, option for flanges, and remote seal.



11301L - Pressure / Level Transmitter

The 11301L transmitter is an excellent alternative for measuring pressure / level, generally used in industrial process controls. The mechanical part of this transmitter is a derivation of the pressure transducer technology Capacitance with 50 years of history and innovations which have proved their robustness, accuracy and reliability. The electronics has a similar story; He was born with analog technology 4 / 20mA, incorporated digital microprocessors turning this into an intelligent transmitter. Always encompassing electronic, mechanical and digital communication innovations, today this transmitter is in process control base.

Technical Specifications:

- HART Technology 4 / 20mA, ideal for data acquisition and process control;
- Pressure measurement from 0.75 to 40 meters of water;
- For appropriate static pressure and pressure to the flange of the pressure range;
- Compatible with a variety of fluids and gases;
- Suitable for pressure and level measurement;
- Compatible with ASME flange, DN and EN;
- Flange option or sanitary connection;
- Compatible with tubes and industrial connection, option for flanges, and remote seal.



11301S - Sanitary Pressure Transmitter

The 11301S is an industrial level / differential pressure instrument ideal for use in process control. The mechanical sensor is based on capacitance transducer technology. The output provides a 4/20mA signal with HART communication. Powered by a high performance CPU, this instrument is capable of high precision thermal compensation and many diagnostic procedures to ensure reliability. Differential pressure/level transmitters have an unlimited number of industrial applications

Technical Specifications:

- Capacitive sanitary pressure transmitter;
- Low maintenance, fast calibration and setup;
- Installation directly into pressurized containers;
- HART technology offers ease of configuration
- and diagnostics during operation;
- Installation, model TRICLAMP, RTJ, IDF, SMS, DIN11851.



11301SRT - Pressure Transmitter with Remote Seals

The mechanical construction of this sensor exhibits predictable behavior when there are changes in static pressure and/or process temperature, enabling compensation methods. With the incorporation of a remote seal it is possible to measure product pressures at high temperatures, and or distant outlets, without the need for pipe draining devices.

MICROPROCESSED PRODUCTS

Technical Specifications:

- Pressure transmitter with remote seals;
- Low maintenance, easy calibration and setup;
- Easy installation directly on pressurized vessels;
- HART technology offers easy setup and diagnostics during operation;
- Easy installation to DIN or ASME flanges with or without extension flange-> diaphragm;
- Available in diameters from 1" to 4" (DN25 to DN100), pressure rating 150 to 600 psi (PN10 to PN40).



30301 - Level Transmitter Guided Wave

The 30301 is a HART level transmitter designed to detect levels of solids or liquids in tanks or containers. Through guided wave radar techniques (GWR) 30 301 handles the radio frequency signals for the purpose of distance measurement. These pulses travel to the product surface where they are reflected and received back by the sending device. Using the principles of Time Domain Reflectometry (TDR), 30th 301 is able to calculate the level of product contained in the container. The level of information calculated at 30,301 by der read as an electric signal of 4-20mA and or via HART protocol.

Technical Specifications:

- HART Technology 4 / 20mA, ideal for data acquisition and process control;
- Measures levels of up to 14m using principles of guided waves radar. Greater distances on request;
- Independent operation temperature variations, pressure and density of the product, compatible with a wide variety of applications;
- Capable of measuring liquid and solid. The robust construction enables easy maintenance and cleaning;
- Excellent immunity to changes in environmental conditions such as vapors, fumes, dust; good immunity to the accumulation and condensation products;
- Available with flex probes or optionally vergalhai rigid, dual probe and, for special cases with coaxial probe.



Capacitive Pressure and Density Transmitter - TDFX-11303

The pressure measurement system by capacitive sensor enables the reading of differential pressures. By means of an oscillator, connected to the capacitors, the reading is performed without the need for A/D converters, resulting in high accuracy and repeatability.

- Low maintenance;
- Easy calibration and setup;
- Easy installation directly on pressurized vessels;
- HART technology provides easy configuration and diagnostics during operation;
- Easy installation, flanges, ASME B16.5 or ISO 1127 sanitary triclamp.

Technical Specifications:

Applications	Liquid and Pasty products
Principles of operation	Mediation by Differential Capacitors
Communication Signal	4 A 20mA with HART 7.0 Protocol
Read Signal	Oscillator astable frequency between 200 and 2kHz.
Regulation	The TDFX-11303 can be considered a non-intentional emission
Operating Humidity	100% R.H.
Time Location	Not applicable
Response Time	Typical 0.2 Seconds
Instrument Display	Graphic type moonchromatic TFT high contrast pixel 0.127mm
Configuration	Via push bottons or HART Communicators
Supply Voltage	12 A 50Vdc, Bidirectional Transorb Protection
Output Signal	4 A 20mA with HART 7.0 Protocol
Accuracy	+/- 0.1% Reading
Resolution	+/- 0.01% Reading
Static Pressure	Depends on the pressure class of the flange
Process Connection	ASME B16.5 Flange or ISO 1127 Tri-Clamp
Seal Ring	Not Supplied
Process Pressure	-150% A + 150% Operating Range
Process Temperature	-40 A 125 °C
Ambient Temperature	-40 A 75 °C



CP-200- Concentration Transducer

CP-200 is a “transducer” capable of measuring the concentration of liquors and cooked pastas, mainly in sugar baking pans. It has two analog outputs: a resistive and capacitive. With a quick and easy connection system to install, the transmitter allows the user to read signal control, with standardization needs, indicating the exact spot to unload the cooking process automatically. Its outputs may be used independently or combined, and thus can measure concentrations through their complex impedances.

Technical Specifications:

- Installation:
 - Health Connection, which allows quick assembly;
 - Mechanical connection;
- Environment: CP-200 provided with IP-67 protection that is ideal for operation factory environment;
- Temperature: Maximum material measured 100 ° C and maximum 70 ° C environment;
- Outputs: has 2 outputs 4 to 20 mA, a corresponding band Resistive and Capacitive correspondentea another band;
- Load Resistance: 0-800 Ohms;
- Power: Input voltage: 24V DC \pm 10%;
- Input Current: 300 mA \pm 10%;
- Electrical connection:
 - Pin 1: Output of the resistive band 4 to 20 mA (white cable);
 - Pin 2: supply 24 Vdc (blue cable);
 - Pin 3: Common = GND (black cable);
 - Pin 4: Output Capacitive band signal 4 to 20 mA (Red cable).



TPI-400 - Linear Transmitter Position

It is a transmitter for measuring linear displacement and position. It has application in all types of industries where monitoring for obtaining linear motion values is required. An example is the use of the equipment for measuring the displacement of the upper roll mills to perform the control. Its sensor part is integrated into the device, which ensures greater protection and durability, and ease of installation in the field.

Technical Specifications:

- Power supply: 20 - 30Vdc (nominal 24VDC);
- Indication: LCD display (% mm or mA);
- Adjustable Measuring range: 0 - 50mm;
- Outputs: 4 - 20mA to 2 wires;
- Measuring principle: Effect hall;
- Output Signal Type: Direct or reverse;
- Adjustment: Display set-up;
- Spring return: yes;
- Casing material / body: aluminum;
- Operating temperature: -30 - 75 ° C;
- Degree of protection: IP-67;
- Weight: 1,65Kg;
- Size: 319 x 96 x 125mm (H x W x D).



Temperature Transmitter 4 to 20 mA - FTT-420

Technical Specifications:

- Fully Configurable;
- Accepts many types of sensors; RTD (PT-100, Cu500);
- Thermocouples (B, E, J, K, N, R, S, T) Resistance (Ohm) and voltage (mV);
- High accuracy 0.1% F.E.;
- Internal cold junction compensation;
- Inputs linearized and converted to industrial standard signal; 4-20mA (FTT-420 model);
- Response time below 1s;
- Ambient temperature -40°C ~ 85°C;
- 2-wire power supply through 4-20mA loop (12 - 40V);
- Dimensions: 150 x 100 x 150 mm (HxWxD).



Temperature Transmitter 4 a 20 mA + HART - FTT-420H

Technical Specifications:

- Fully Configurable;
- Accepts many types of sensors; RTD (PT-100, Cu500);
- Thermocouples (B, E, J, K, N, R, S, T) Resistance (Ohm) and voltage (mV);
- High accuracy 0.1% F.E.;
- Internal cold junction compensation;
- Inputs linearized and converted to industrial standard signal; 4-20mA + HART;
- Response time below 1s;
- Ambient temperature -40°C ~ 85°C;
- 2-wire power supply through 4-20mA loop (12 - 40V);
- Dimensions: 150 x 100 x 150 mm (HxWxD).

POSITIONERS OF VALVES ELETROPNEUMATICS



PFX-420R - Rotary Electropneumatic Positioner

Technical Specifications:

- Single/ Double action;
- 4-20mA DC input signal;
- Rotational Motion;
- Actuation Stroke: 0 to 90°;
- Supply Air Pressure: 1,4 – 7Bar;
- Compressed Air Connection :¼ NPT;
- Electrical Connection: ½ NPT;
- IP66 Protection Class;
- Unclassified Area.



PFX-420L - Electropneumatic Linear Positioner

Technical Specifications:

- Single/ Double Action;
- 4-20mA DC input signal;
- Linear Motion;
- Actuating Stroke 10 a 150 mm;
- Supply air pressure: 1,4 – 7Bar;
- Compressed air connection: ¼ NPT;
- Electrical Connection: ½ NPT;
- IP66 Protection Class;
- Unclassified Area.

ANTI FOAMING SYSTEM



Digital Anti Foaming System

The Fertron Anti-foaming Doser System is a pneumatic system for spraying liquids. This system is used in the fermentation sector in the application of “polymer” in fermentation tanks to reduce the foam formed during the process of fermentation of sucrose. This system allows a great economy of the “polymer” used, because it generates a fan-shaped spray that reaches the foam. It is a modular system, where the metering unit pressurizes a “polymer” feeding line. From this line derivations are made that go to the injector nozzles. In this way up to twelve nozzles can be installed. This system can be installed in open or closed tanks. The Fertron Anti Foaming System is supplied with a CAE controller. The system is composed of: 01 reservoir, 01 proportioner, probe, nozzle, support for a closed tank, support for an open tank, and 01 control panel.

Technical Specifications:

- Reservoir: tank with cover - PVC with integrated support;
- Feeder: 02 Ø100 pneumatic cylinders mounted in the opposite way;
- Operating pressure: 3 ~ 7 kgf / cm²;
- Solenoid Power supply: 24 Vdc;
- Measuring principle: Resistive;
- Stem material: 304 stainless steel;
- Electrical connection: 24V DC - GND - Signal;
- Consumption: 50mA;
- Installation: open or closed vat;
- nozzle Material: tube 304 stainless steel ferrule and brass;
- Material directional valve: 304 stainless steel;
- Actuation: solenoid valve;
- Working pressure: 3 ~ 7 kgf / cm²;
- Power: 24VDC;
- Solenoid consumption: 100mA;
- Support material: carbon steel;
- Probe height adjustment:
 - Open Dorna: Side fixing screw;
 - Closed Dorna: adjusting sleeve.

PICK-UP ADAPTER

APM-420

Used for measuring the speed of rotation rubber mat in mills. Uses an inductive sensor for sending the pulses to a CLP or controller.



Technical Specifications:

- Box Material: Aluminum Alloy;
- Coupling: stainless steel shaft 304 for coupling spring;
- Painting: Epoxy - white;
- Electrical connection: 3-wire (Vcc, GND and signal);
- Power supply: 10 - 30 Vdc;
- Power consumption: 100mA;
- Mounting: wall or support;
- Protection: IP65;
- Approximate weight: 1.5 kg;
- N° of pulses / turn 30 or 60.



Pick-Up ATM-500 Adapter

Used for measuring the speed of rotation rubber mat in mills. Uses an inductive sensor for sending the pulses to a CLP or controller.

Technical Specifications:

- Coupling: stainless steel shaft 304 for coupling spring;
- Electrical connection: 3-wire (Vcc, GND and signal);
- Power supply: 10 - 30 Vdc;
- Power consumption: 7 mA;

- Maximum output current: 20 mA;
- Mounting on Bracket;
- Protection: IP65;
- Approximate weight: 1.5 kg;
- N° of pulses / turn: 6.

ACTUATORS



Damper Actuator

The Damper Actuator ATD of Fertron is a pneumatic actuator for various uses, such as in fans and boiler exhausts, gates, valves and other applications where you need hard and fast drive. Can be rotary or linear. This machine has two standard models, defined by the diameter of the pneumatic cylinder, 100mm or 160mm. Easy installation, can be controlled using a positioner or be of the on-off that provided with the filter and the compressed air regulator and may also be fitted with various other devices such as, for example, limit switches.

Technical Specifications:

- Fluid: Compressed air, filtered, lubricated and non-lubricated;
- Standards: ISO 6431, VDMA 24562, NFE 49-003-1;
- Operation: double acting;
- RA/8000 adjustable damping;
- RA/8000/M magnetic plunger, adjustable damping;
- Operating pressure: 1 to 16 bar (1 to 10 bar for Ø250 and 320 mm);
- Operating temperature: -10°C* to +80°C max;

Materials:

- Shirt: Anodized aluminum;
- Printheads: injected aluminum (Ø 200-320 mm cast aluminum);
- Stem: stainless steel (Martensitic);
- Sealing rod and piston: Polyurethane (Ø 125-320 mm Nitrile Rubber);
- Orings: Nitrile Rubber.



Turbine Actuator (Dedini)

It is an actuator for regulating turbine speed steam type Dedini. It is a robust machine, has steering wheel for manual override, limit circuit and its power is 220Vac.

Technical Specifications:

- Gearmotor voltage: 220 VAC;
- Power: 150W;
- Reduction: 1:40;
- Reducer type: worm thread;
- Manual override (emergency);
- Material cast iron box;
- Limit Switch;

- Micro switch: driven by adjustable cam;
- Maximum voltage: 250Vac;
- Maximum current: 10A;
- Electrical connection;
- Post Bar;
- Installation: screw fixing; and
- Mass: approx. 18 Kg.



Universal Turbine Actuator

It is a universal regulator actuator for steam turbine speed. It is an easy installation and maintenance equipment, has steering wheel for manual override, end of course easy adjustment and a power circuit is in 24Vdc.

Technical Specifications:

- Gearmotor voltage: 24 V DC;
- Power: 100W;
- Reduction: 1:26;
- Reducer type: worm thread;
- Reduction: 1:15;
- Manual override (emergency);
- Material cast aluminum box;

- Limit switch;
- Micro switch: driven by adjustable cam;
- Maximum voltage: 250Vac;
- Maximum current: 10A;
- Electrical connection;
- Post Bar;
- Installation: screw fixing; and
- Mass: approx. 4 Kg.

LIMIT SWITCH



FL-80

It is an equipment type limit, rotating with drive through worm and micro switch with sliding adjustment. The setting is extremely simple electromechanical and low maintenance reliability. Generally it is used in overhead cranes, hoists, gantries, cable reels, etc.

Technical Specifications:

- Mounted with up to 4 micro switch (SPDT - NA + NC);
- Maximum voltage of 250VAC;
- Maximum current 3A;
- Class is IP65; and
- Number of laps maximum is 35 laps and minimum of 02 laps.

ELECTROHYDRAULIC BRAKE



Electrohydraulic Brake FEH

The line FEH Fertron brake is composed of a wide range of actuators and brake based on the dedicated drive system electrohydraulic. The FEH line brakes are suitable for heavy work schemes with frequent driving rates, and in harsh industrial environments.

Its operating system is based on the following characteristics: A three-phase electric motor, continuously energized, keeps away brake pads brake pulley. When the motor power is removed, the shoes are pressed against the pulley, providing braking. This system allows the safety condition where a power failure causes the brake to the braking condition.

Technical Specifications:

- Building Materials: Steel 1020, nodular cast iron and cast aluminum;
- Complete Curb Weight (kg): 46.5 to 258.5;
- three-phase motors 220 V (2.29 A to 8.04 A) - 380 V (1.32 A to 4.64 A) - 440 V (1.15 A to 4.02 A);
- Motor power: 0.75 CV (0,55KW) to 3.0 HP (2.2 kW);
- Oil: Hydraulic 68 (3 ASTM);
- Oil quantity (liters): 1 to 2.

VALVES



Manifolds Valves

Fertron Manifolds were designed with the concept of needle valves, and their maximum allowable working pressure at 20°C is 6000 psi. Their plugs are non-rotating, thus eliminating wear and tear in metal-to-metal contact. In standard mode they are supplied completely in SS316 stainless steel, with PTFE packing gland and 1/2" NPT threads.

Technical Specifications:

- Lock valve;
- Manifolds 2 ways: female thread;
- Manifolds 2-way: male thread;
- Manifolds 3-way: flange thread; and
- Manifolds 5-way: flange screw.

Boiler Discharger Valve



The VDC-2.0 valves allow the discharge of the boiler, as programming is done in the control panel or manual. The solenoid valve is energized to send air to the bottom of the jacket keeping the bottom valve in the open position. When de-energized the solenoid valve sending air to the upper part of the shirt bearing the bottom valve to the closed position. In addition to the air, the valve closed is also done by the return spring fitted inside the shirt. It is necessary to make adjustments to the flow control valve to prevent water hammer in the bottom valve. The VDC-01 valves should be installed in pipe Ø2 "coming out of the bottom of the boiler balloon background, drift into two branches. The flow control valve should be adjusted.

Technical Specifications:

- Type: Globe;
- Connection: ANSI flange Ø2 ", pressure class 600;
- Body: carbon steel 1025, normalized;
- Headquarters: 316 stainless steel;
- Lever for manual opening (optional);
- Solenoid valve: Model x42255-5-g220, 5-way - NORGREN;
- Set pneumatic filter regulator and lubricator model;
- P1H200-M1QA - NORGREN;
- flow regulating valve model T1000A28000 - NORGREN;
- Interconnections: Pneumatic; and
- Power supply: 220VDC.

MECHANICAL PRODUCTS



Sealing and Mud Pot

The sealing/mud pots products are for use in instrumentation. Serve, among other functions, to prevent the process fluid in direct contact with the transmitter and thus damage it, increasing the durability of the instrument. Fertron pots are manufactured with materials and manufacturing processes qualified and appropriate, certified by ASME.

Technical Specifications:

- Sealing Pot / Pot Lama;
- Pressure: 1500psi / 2000psi / 3000psi;
- Material: carbon steel.



Air Distributor

Instrument to be used in applications where compressed air distribution is necessary. All outputs contain ball valve type.

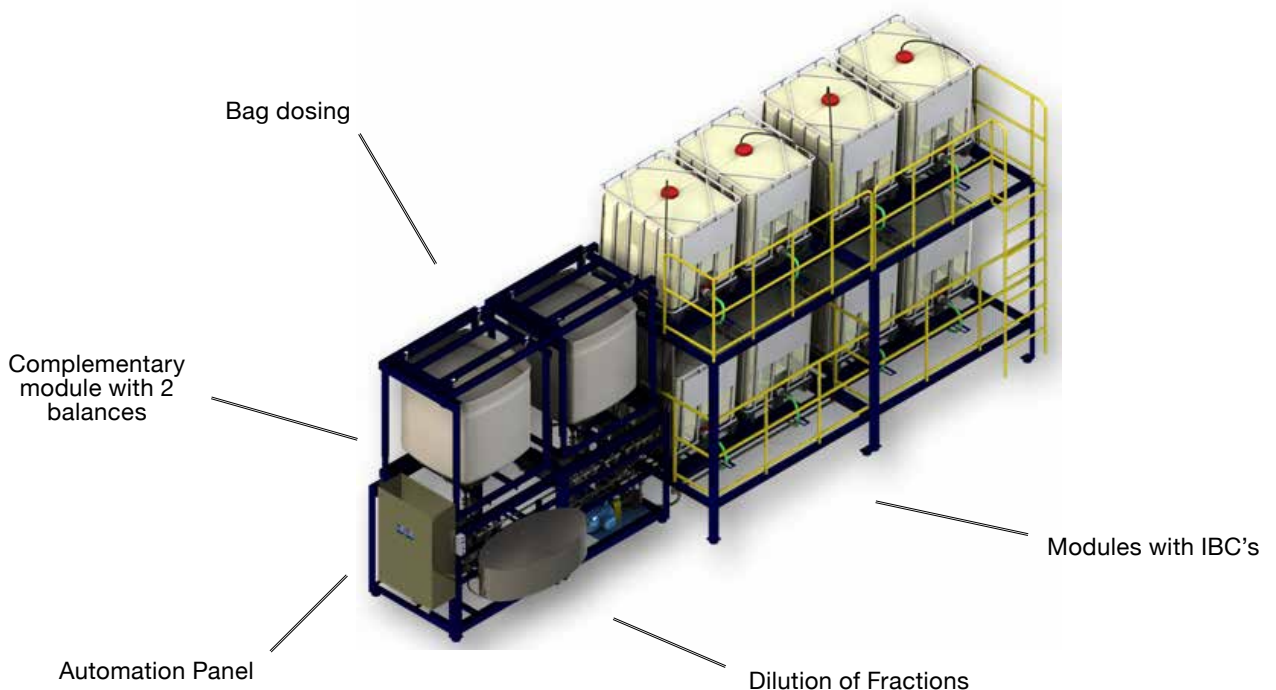
Technical Specifications:

- Main output: inch $\frac{3}{4}$ valve;
- Branching with $\frac{1}{2}$ inch;
- Maximum air pressure: up to 800 psi;

- Other models: Pressure classes, valves and diameters according to customer need, consult the company;

AGRICULTURAL AUTOMATION SOLUTIONS FOR GROUT AND VINASSE

- Skid Calda Pronta allows integrated management of production systems;
- Cost reduction, due to correct dosage of phytosanitary products;
- Cost reduction in the purchase of raw material;
- Reduction of operational costs (labor, water and energy, storage of packaging and PPE);
- Attention to processes during certification audits;
- Inventory / storage management;
- Better efficiency of products x return on invested capital;
- Profit in the productivity of crops.



ELECTRIC MOTORS

Fertron is an authorized distributor of ABB motors.



Technical Specifications:

- Cast iron housing;
- 0.18kW to 1100kW (0.25hp to 1500hp);
- 220/380/440/760V 60Hz;
- 3-year warranty;
- SKF bearings;
- Painting type C3M;
- PTC 150°C thermistor;
- Terminal board in junction box;
- Threaded hole in shaft end;
- Grease nipple (housing 160-450);
- SPM nozzle (housing 160-450).



ABB Ability Smart Sensor

The ABB Ability Smart Sensor captures data on vibration, temperature and other parameters, and uses it to reduce motor downtime by up to 70%, extend motor life by up to 30%, and reduce energy consumption by up to 10%. ABB has developed the compact ABB Ability Smart Sensor that is simply attached to the low voltage motor housing. No wiring is required. Using advanced algorithms based on decades of ABB motor experience, the ABB Ability Smart Sensor makes information about motor health available via smartphone and over the internet to a secure server. The solution can turn large numbers of motors into smart devices, enabling them to benefit from smart services

Intended Use:

- AC three-phase induction motors;
- Continuous or intermittent cycle;
- Frame size: 140-440 (NEMA), 56-500 (IEC);
- Fixed or variable speed.

Health Parameters:

- General conditions;
- General vibration (rms speed);
- Bearing condition;
- Housing temperature (degrees).

Operation parameters:

- Radial vibration (rms velocity);
- Tangential vibration (velocity rms);
- Axial vibration (velocity rms);
- Speed (rpm);
- Hours in operation;
- Number of starts;
- Power frequency (Hz);
- Power output (hp/kW);
- Relubrication countdown.



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