

Leakwise*

DSP-220 Digital Controller

DSP-220 Description

The Leakwise DSP-220 Digital Controller is a computerized monitoring and data acquisition system, designed to support multiple Leakwise and other specialized sensors. The system can be tailored to a particular application by using a combination of units and their options.

The basic unit (BDSP-220) includes a micro-controller, data acquisition hardware for eight sensors, a panel with status lights, a keypad and display, and a serial communication channel. Operator interaction is carried out via the keypad and display through a series of simple, user friendly menus. Status of all sensors, or of a selected sensor, is seen on the display in measurement mode. Configuration and calibration modes are used for system setup and optimization, and are accessed only by an authorized operator.

Outputs of the System Include:

- Standard outputs include a digital port (RS-232 or RS-422), two contact relays, and one two-wire 4-20 mA signal.
- Optional relays — each one can be assigned to a specified sensor or a few sensors, and will activate when an assigned set point is exceeded or when a certain status is reached. This feature can be used for control purposes.
- Optional 4-20 mA output channels — each one can be assigned to a specified sensor and give a continuous output related to the measurement of that sensor.
- Communication channel for periodic status data flow and connection to a PC.



- Optional data logging is used when a connection to the communication channel cannot be used as a permanent installation.

DSP-220 Configurations

The BDSP-220 is a stand alone Basic Digital Controller that can support up to eight sensors. In applications with sensors located remotely from the control room, or if support of more than eight sensors is required, an expanded configuration can be used.

The expanded configuration is based on CDSP-220 Controller unit which can master up to four FEDSP-220 front-end slave units. A maximum of forty sensors can be monitored in this configuration. Calibration and setup of the sensors can be done either from a PC using the DSP-220 SHELL software, or directly from the BDSP-220 or CDSP-220 keypad and display.

The DSP SHELL runs on a PC with Windows® 95, 98, 2000, or XP operating system. It communicates directly with the local DSP-220 unit, which is connected via the PC serial port to BDSP-220 or CDSP-220. The FEDSP-220 remote units can be accessed via the CDSP-220.



DSP-220 Technical Specifications

Operational and Design Information

BDSP-220 Basic Digital Controller

Sensor Support	Up to eight ID-22X sensors can be monitored
Resolution	0.1%
Status Lights	Water, Oil, High Oil, Air, Power On and Fail status indicators
Serial Port	RS-232 full duplex or RS-422 half duplex.
Baud Rates	300 to 9600
Keyboard	16 keys, sealed, tactile
Display	LCD, four alphanumeric lines, illuminated
Test	Built in test for sensors and system diagnostics
Processor	Intel 80C196 16-bit microcontroller
Memory	Nonvolatile memory for saving setup and calibration parameters
Time/Date	Software real time clock and date
Enclosure	NEMA 4x (IP-65): 375 x 250 x 170 mm (14.8 x 9.8 x 6.7 in) EEx d IIB T6: 430 x 338 x 335 mm (16.9 x 13.3 x 13.2 in) NEMA 7: Available on request
Temperature	Ambient temperature range: 0° - +70° C (32° - +158° F)
Humidity	5 to 95% non-condensing
Power	110 VAC or 220 VAC or 24 VDC or 12 VDC. Consumption: 10 W
Distance	Maximum installation distance to ID-22X sensor up to 1200 m (3937 ft) subject to hazardous area restrictions

CDSP-220 Controller

Specifications	Same as the BDSP-220 with additional communication port to support one to four FEDSP-220 units, thus monitoring up to 40 ID-220 sensors
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FEDSP-220 Front End Digital Controller

Specifications	Same as the BDSP-220 but without keyboard, display and status lights
Distance	Installation distance between CDSP-220 and FEDSP-220 units is up to 1200 m (3937 ft)

DSP-220 Controller Options

Options on Main Board

Relays	Two relays, SPDT, 240 VAC, 3A. Each relay can be assigned to any sensor or a group of sensors, with a specified threshold or status activation plus programmable delay
4-20 mA	One 4-20 mA output current source type, which can be assigned to any sensor
Data Logging	Events logging of sensors status in nonvolatile memory. Data can be extracted through the serial port

Options on Accessory Board

Up to 32 additional relays
Up to 8 additional 4-20 mA outputs
Additional serial port

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