

DPR 250

250 MM DIGITAL STRIP CHART RECORDER PRODUCT SPECIFICATION SHEET

43-DR-03-09 3/98

OVERVIEW

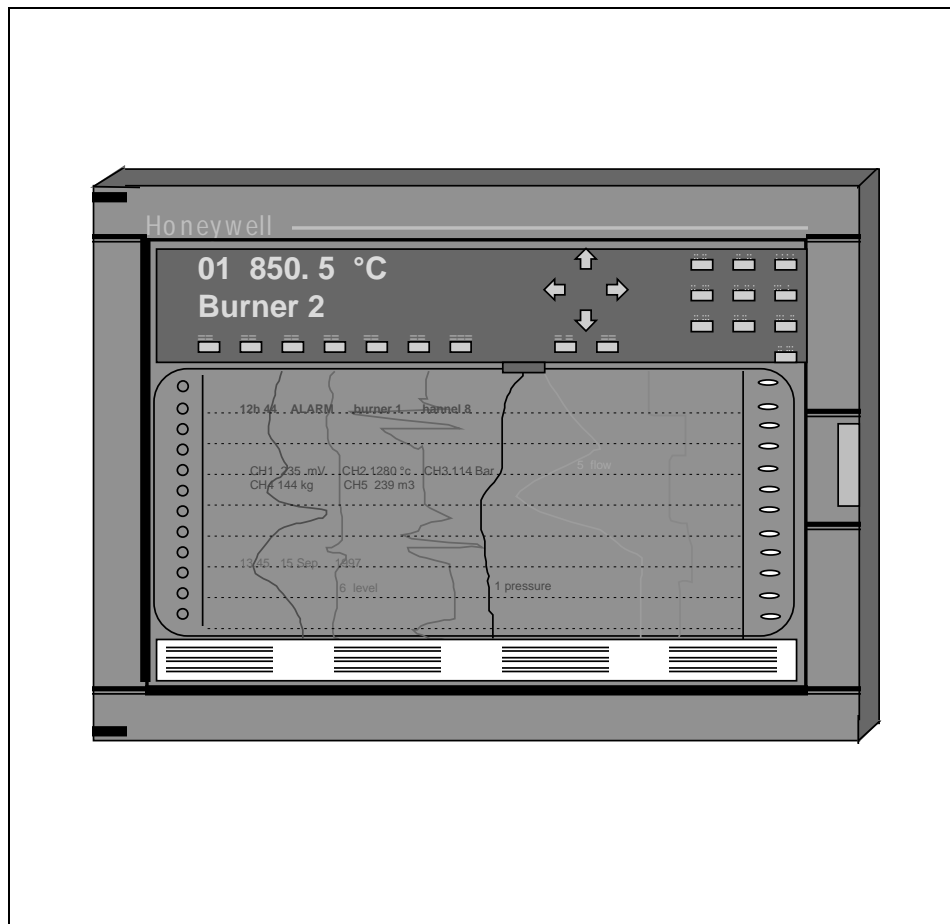
The DPR250 recorder offers the best price/performance of any 250mm wide chart recorder in the market today.

The recorder is able to monitor up to 64 analog inputs or any combination of analog inputs, digital inputs and outputs that total up to 80.

It produces clear, fully documented charts at any speed, and in different formats, providing the best, most flexible presentation of the process data.

The large, bright display, with fluorescent chart illumination, provides easy viewing of the data and chart. The flexible product configuration in 5 languages makes it easy to set up and use.

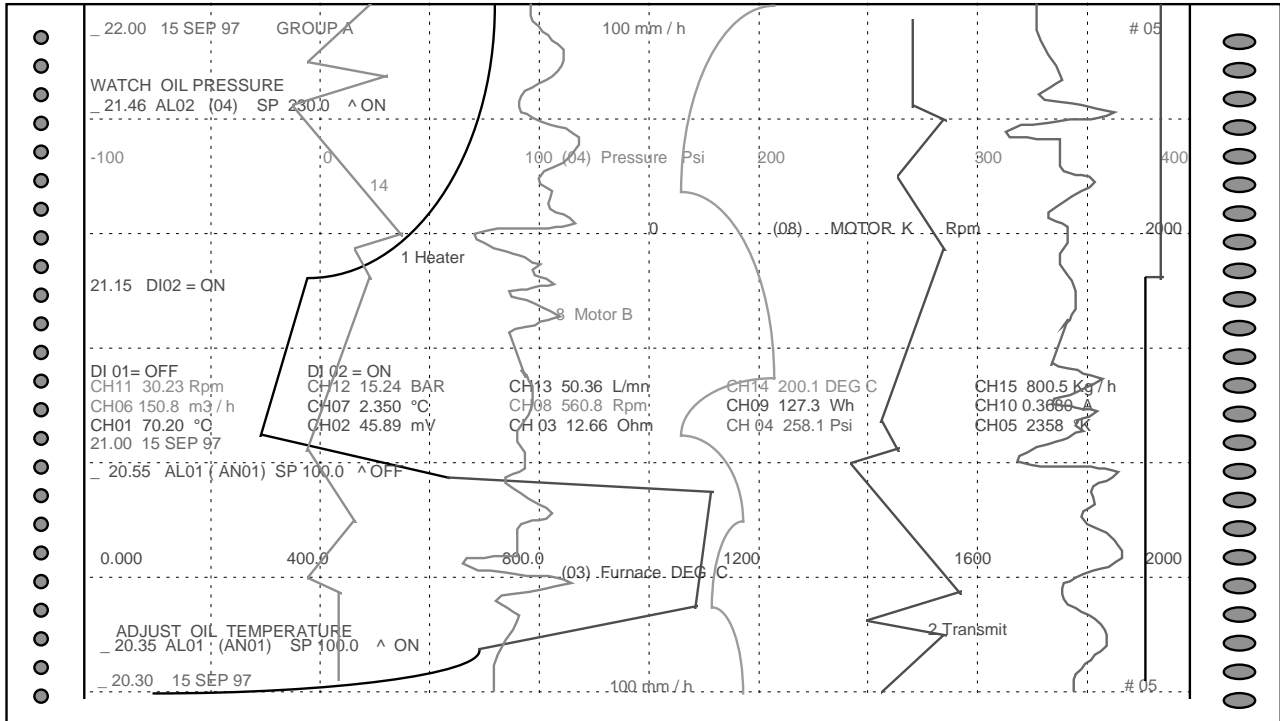
The DPR250 is especially suited to match the needs of chemical, pharmaceutical, power generation, metals processing, environmental monitoring, and other applications where the best chart resolution is required.



MAIN FEATURES

- 250 mm (10 inch) chart width.
- 0.05% accuracy full scale on a wide choice of inputs and ranges.
- Each input span is adjustable within the selected range, with up to 2 ranges per input.
- Universal (T/C, RTD, mV, mA, V), or linear input board (mV, mA, V).
- Fast scanning of inputs (20/sec.)
- Fluorescent display of 2 row of 16 digits, adjustable brightness.
- Roll or fan fold chart capability using the same cassette. Fully documented chart with trace color assignment, thin or thick trace, alarm in red tagging, zooming, zoning, trend, tabular, messages.
- Channel groups available.
- I/O capability : up to 64 analog inputs, up to 48 output relays, up to 48 digital inputs, up to 8 retransmitted signals.
- Advanced math package
- Full configurability through the front keys, front PC jack or communication link.
- 2 chart speeds fully configurable from 1 to 5000 mm/h (0.04 to 200 inch/hr).
- Up to 64 messages of 64 characters
- Firmware upgradable by PC (Flash memory).
- Input calibration traceability per channel, or per group of channels.
- Up to 2 custom-input characterizations available.
- Up to 64 alarm set points freely assignable on analog inputs, maths, communication.
- Up to 48 internal output relays assignable on analog inputs, maths, events, logic inputs.
- Configurable Periodic chart documentation.
- Periodic report.
- Universal power supply : 100 to 230 Vac/dc.
- PC application software (LPCS) for trending, monitoring, archiving, configuration.
- Up to 8 retransmitted signals.
- Universal communication: ASCII, MODBUS RTU - RS232/422/ 485.
- Metal door/case, IP55 protection.

Trend printing mode



The trend printing mode offers a large flexibility of documentation which includes :
 Date and Time, Alarm reporting with : Time, Alarm SP, Channel #, Set Point value, Alarm, Chart certification,
 Chart Speed with engineering unit , User defined message, Range subdivision, Recorder identification, Red on
 alarm, Chart range, Channel reference with tag name (Configurable), Thick channel trace, Process value,
 Channel tag name, Zone format, Channel reference, Engineering Unit, Tabular print out.

Tabular printing mode

DI01= OFF	DI02 = ON	CH08 560.0 Rpm MOTOR B	CH09 127.3 Wh POWER
CH07 2350 °C BURNER	CH05 2358 °K FURNACE	CH06 150.8 M ³ /h FLOW	
CH04 258.1 PSI PRESSURE	CH02 45.90 mV TRANSMIT	CH03 12.70 OHM COIL	
CH01 70.20 °C HEATER			
23.50 15 SEP 97			
DI01= OFF	DI02 = OFF	CH08 560.0 Rpm MOTOR B	CH09 127.3 Wh POWER
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23.30 15 SEP 97			

Rugged, Simple and modular Construction

- **Easy to install ... easy to use ... easy to maintain :** The DPR250 with its modular design and rugged construction, simplifies maintenance. Many parts are common with the DPR180 thus reducing spare parts inventory. It's operator - friendly configuration keys, the sophisticated display, easy product configuration and customized charts insure accurate monitoring and recording of the process.

- **Easy access :** the access to the chart, and the ink cartridge is very easy. The simple, modular construction of plug-in modules, along with the low cost and extra long life of consumables, further reduces the maintenance cost.

- **Universal power supply module :** the universal switching mode power supply simplifies installation of the recorder by accepting voltages from 100 to 230 V ac/dc, 50/60 Hz.

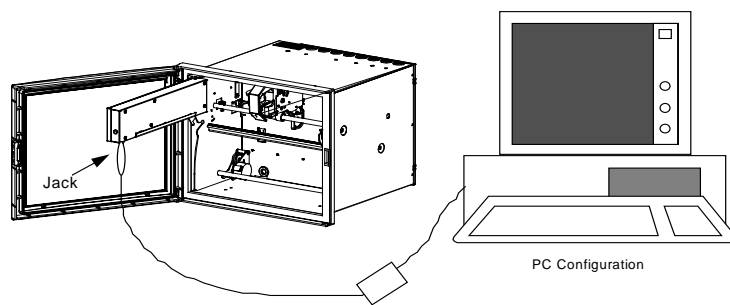
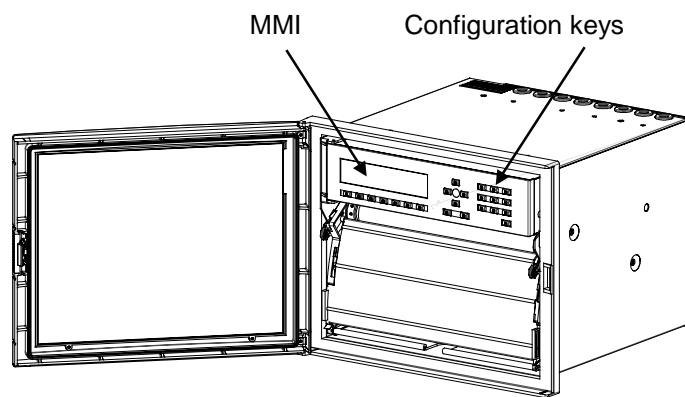
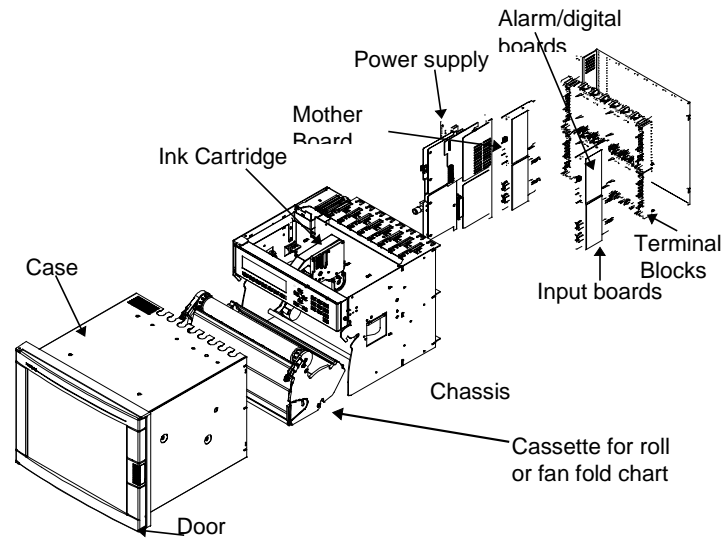
- **Local configuration :** A user friendly program with local language prompts (English, French, German, Italian or Spanish) permits a full configuration of the recorder using the front keys. A multilevel password protects against unauthorized changes of product configuration.

- **Digital Display :** The Vacuum fluorescent dot matrix display, is 2 lines of 16 digits, 8.5 mm high. This allows for flexible displaying and provides clear

operator information. Display illumination is configurable to allow for improved viewing based on customer requirements.

- **Chart illumination :** The chart illumination makes traces and current printed values immediately visible, even from a distance and in any ambient light condition.

- **Two paper types :** Either chart roll or fan fold paper can be installed into the common chart cassette. The large capacity cassette holds 35 meters (115ft) of chart paper, reducing the maintenance time required between chart changes. Uses the same charts and ink cartridge as the DPR3000, thus providing for common consumables.



- **PC configuration :** By using the front communication jack, the recorder can be configured from a personal computer, using an optional PC interface module. In addition to configuration, the PC interface provides the ability to upload, download, modify, store the recorder configuration and initiates service diagnostics as well as being able to upgrade the recorders product firmware. The PC Configuration software allows the creation of a custom characterization of up to 50 points for special ranges.

DPR 250 FUNCTIONAL SPECIFICATIONS

Technical data

Technology		Microprocessor-based (32 bits), with non volatile memory. Flash memory for product software upgrade, or specials, via the front jack.
Analog inputs	<i>Number of inputs</i>	From 4 up to 64 in group of 4. Above 32 inputs it could limit the total number of alarm outputs or digital inputs.
	<i>Input boards</i>	2 types : 4 linear inputs per board : mV, V, mA 4 universal inputs per board : mV, V, mA, T/C, RTD, Ohms
	<i>Signal source</i>	Thermocouple with cold junction compensation, or with remote compensation temperature configurable between 0 to 80°C (32 to 176°F) Line resistance up to 1000 Ohms for T/C, mV, mA, V RTD Pt100 Ohms, 3 wire connections, 40 Ohms balanced max.
	<i>Basic math functions</i>	Square root extraction or channel differential are standard.
	<i>Filter</i>	Digital filter configurable per input from 0 to 99 sec.
	<i>Field calibration</i>	Channel calibration 0 to 100% span (or calibration of a group of identical channels) can be made to certify sensor loop.
	<i>Burnout</i>	T/C, mV, V (except following ranges) configurable to upscale, downscale or none Volt : -500, 0, 500 mV ; -1, 0, 1V ; -2, 0, 2V; -5, 0, 5V ; 0, 10V ; -10, 0, 10V : Inherent to Zero volt. RTD : inherent upscale ; mA : inherent downscale.
	<i>Scanning time</i>	2 channels = 105 msec, 4 ch = 210 msec, 8 ch = 420 msec, 12 ch = 630 msec, 16 ch = 840 msec, 20 ch = 1 sec, 24 ch = 1.2 sec, 32 ch = 1.6 sec, 64 ch = 3.3 sec.
	<i>Input impedance</i>	10 MOhms for T/C and mV inputs; > 1 MOhm for V input
	<i>Stray rejection</i>	Series mode > 60 dB. Common mode at 120 Vac > 130 dB
Display	<i>Fluorescent display</i>	2 rows of 16 digits, 8.5 mm (.33 inch) high, matrix display. Can display 1 or 2 PV values (5 digits) per line, engineering units (5 digits), alarm status, tag name, math, speed, event messages etc.
	<i>Brightness</i>	The display brightness is configurable
Record	<i>Chart</i>	250 mm width
	<i>Traces</i>	Up to 32 traces, configurable in 6 colors, thin or thick traces, plus digital traces
	<i>Trace assignment</i>	Traces are configurable on analog inputs, math, communication or digital inputs
	<i>Scaling</i>	Per input, up to 2 analog scales can be configured to be printed on the chart, with engineering units, channel reference and tag name. Each input can be configured independently. The scale can be linear, with up to 10 sub-divisions
	<i>Print mode</i>	Trend : Up to 32 traces, with periodic chart documentation configurable in time, from 1 minute to 24 hours with date, time, scales, digital PV print-out over traces or on blank paper, with channel reference, digital traces, alarm messages and customer message. Tabular : Tabular print-out configurable in time from 1 to 1440 minutes with channel number, tag name, digital PV value, engineering unit, alarm status.
	<i>Zoning</i>	Each input can be scaled between 0 to 100% of the chart (minimum zone = 20%).
	<i>Printing group</i>	Up to 2 groups of channels can be defined, with printing selection by : Alarm, logic inputs or logic triggers
	<i>Pen carriage speed</i>	1.95 second full scale
Chart length		Roll or fan fold chart 35 meters (115 ft)

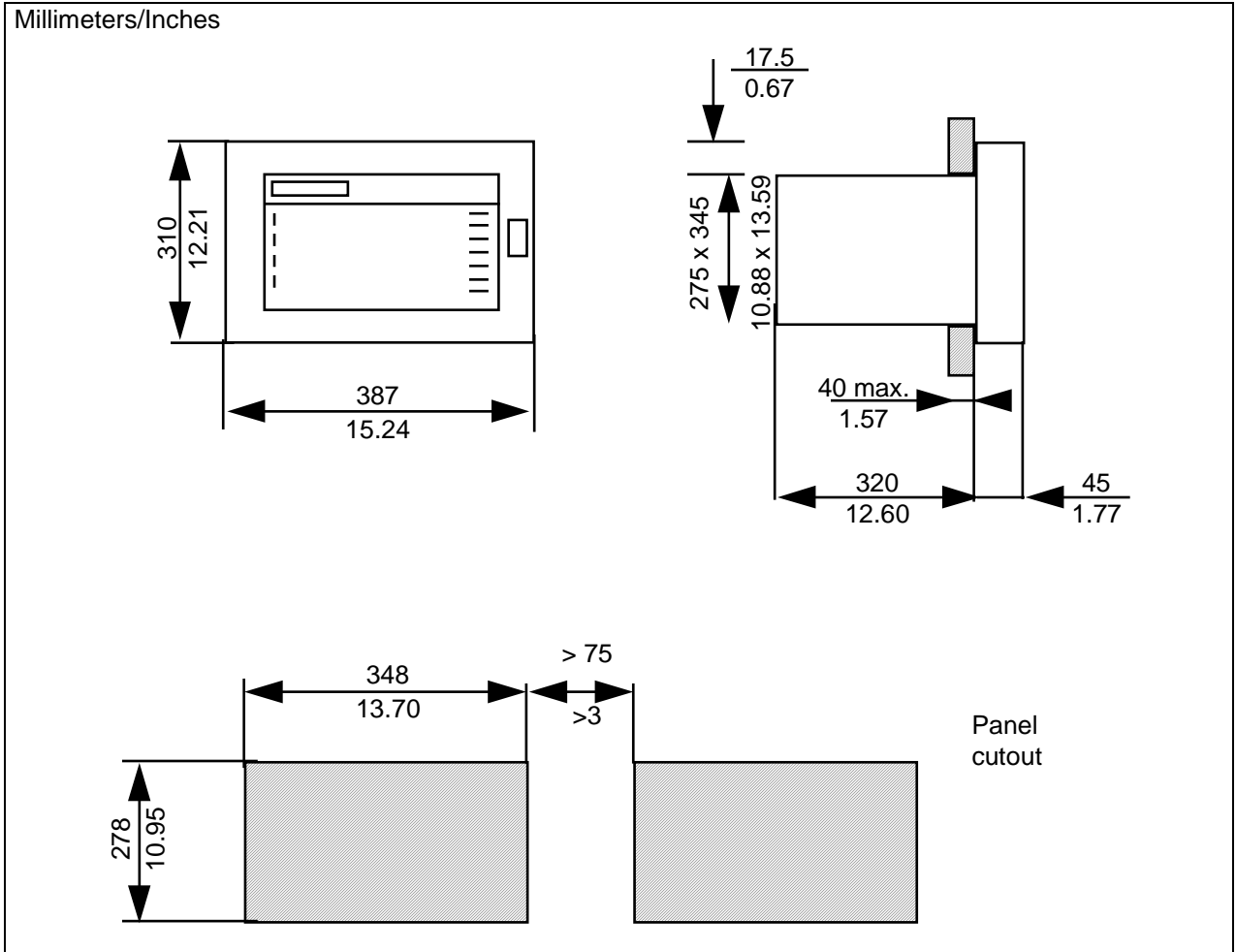
Technical data (continued)

Chart speed		1 or 2 chart speed, fully configurable, selected by : Logic input, alarm communication, front key.
	<i>Speed setting</i>	Speeds 1 and 2 are configurable from 1 (0.04) up to 5000 mm/hr (200 inch)
	<i>Resolution</i>	Chart resolution is 0.19 mm (0.0075 inch)
Product configuration	<i>Access</i>	The configuration can be accessed using front keys, PC configurator, or ASCII communication with LPCS software.
	<i>Protection</i>	2 password levels protect the unit configuration from unauthorized access. Level 1 = limited access, Level 2 = full protection.
	<i>Front keyboard</i>	Configurable and alphanumeric keys allow the operator to change the recorder operation
	<i>PC configuration</i>	Through the front jack, the unit can be configured from a PC using a Honeywell PC interface. This provides the facility to copy the product configuration, modify, store, download or upload the configuration, access service diagnostics, and also to upgrade the recorder firmware.
Logic inputs (optional)	<i>Number of inputs</i>	Up to 48 input contacts, organized in groups of 6 contacts per card Dry contacts (5 mA - 5 Vdc)
	<i>Actions</i>	change speed 1 to speed 2, tab interval 1 to 2, digital print-out, print message, print inhibit, event traces, print math calculations. Change range, start/stop math operations Change print group, actuate a relay output Up to 48 event traces are configurable in color and position from 0 to 100% of the chart
Alarms	<i>Set points</i>	Up to 64 set points, freely assignable to analog inputs, math or communication.
	<i>Alarm type</i>	High, low, change rate low, change rate high, change rate high-low or deviation with configurable alarm occurrence.
	<i>Actions</i>	Can trigger a message, print channel in red in alarm, print in alarm, change the range, change the speed/tabular, print digital PV's Start/stop the math, select the print group, actuate a relay output
	<i>Relay output (optional)</i>	Up to 48 internal relays : 2 A, 250 Vac on resistive load. 1 SPST contact output, normally closed contact (NC), configurable to normally open (NO). Configurable alarm relay acknowledgement.
Alarm event		The recorder can be configured to display events such as : 1 alarm, 1 channel in burnout, paper out, battery fail, communication interrupted.
Alphanumeric documentation	<i>Messages</i>	Up to 64 freely assignable messages of 64 characters each Can be printed with or without date and time over the traces, by alarms, logic inputs, communication, when alarm is ON, OFF or ON/OFF.
	<i>Process Values</i>	Periodic digital print-out at time intervals configurable from 1 minute to 24 hours or through alarms, digital inputs, communication.
	<i>Tag name</i>	Each channel can have up to an 8 character name
	<i>Chart scales</i>	each can be configured from 0 to 9 subdivisions
	<i>Periodic reports</i>	startup time and period configurable Min, Max, average of selected channels or (math computation) are printed in alphanumeric. Report size max. = 20 lines.
User-Defined Actuation		Up to 50 breakpoints can be used to define a custom range/actuation. Up to 2 ranges can be defined using the PC Configurator. Polynomial characterization available as special.

Technical data (continued)

Mathematic package (optional)		Many functions are available such as : Basic math, SqRt, Fo, totalization, mass flows, energy consumption, averages, timers, min., max., carbon potential, alarm/logic pulse totalization, RH. The calculations are stored during power interruption.
	<i>Actions</i>	The results can be recorded as a trace, a tabular print-out, a periodic report, or to the communication link, or used to generate a current output signal
Communication (optional)	<i>Protocols</i>	ASCII in RS 232, 422, 485 MODBUS RTU in RS 422/485
	<i>PC supervision</i>	In ASCII communication, an application software package, LPCS, provides the following functions : Monitor the PV's, alarms, events status Archiving of data in ASCII files Send a message to the recorder Configure the recorder
Retransmitting signals (optional)	<i>Current output</i>	Up to 8 signals, 4 to 20 mA dc, can be generated by the recorder (Organized in blocks of 4 output signals) Max. Line impedance = 400 Ohms These can be configured for : analog traces, math calculations, PV's from the communication link. The zero and span are configurable.
Clock timer	<i>Format</i>	Year, month, hour, minute can be set
	<i>Power interruption</i>	Battery backed (10 years time, 3 years power off)
	<i>Accuracy</i>	10 ⁻⁵ at reference conditions
Power supply		100 to 230 Vac/dc, (24 Vac/dc on request) Power consumption = 100 VA max
Packaging	<i>Weight</i>	22 Kg max. (48 lbs)
	<i>Front bezel</i>	310 x 387 mm (12.2 x 15.24 inches)
	<i>Panel cutout</i>	278 x 348 mm (10.9 x 13.70 inches)
	<i>Depth</i>	320 mm (12.6 inch) including the rear cover
	<i>Front protection</i>	IP55
	<i>Lock</i>	Latch, optional key DIN 43832-N
	<i>Door</i>	Die cast aluminum : Dark gray or black (optional), door opens to 180°
	<i>Mounting</i>	Panel mounting ± 30° from the horizontal
	<i>Wiring</i>	Screw terminals : Terminal blocks plug on to the boards at the back of the recorder
Noise immunity		89/336/EEC EMC Directive for industrial environment
Safety protection		CE mark conformity with 73/23/EEC Low Voltage Directive Complies with EN 61010-1 installation category II, pollution degree 2 Designed to meet UL and CSA C22.2 N 1010.1-92 standard (approval pending) (for altitude < 2000m)
Electrical insulation	<i>Input/input</i>	Continuous operation at 280 V ac or 400 Vdc (except for RTD)
	<i>Input/grd;</i>	Test voltage 2.1 kV dc for 1 minute
	<i>alarm</i>	Test voltage 3.25 kV dc for 1 minute
	<i>relay/grd</i>	Test voltage 3.25 kV dc for 1 minute
	<i>Input/line;</i>	Test voltage 3.25 kV dc for 1 minute
	<i>Line/grd;</i>	Test voltage 3.25 kV dc for 1 minute
	<i>Logic/grd</i>	Test voltage 500 Vdc for 1 minute
Temperature	<i>Ambient</i>	0 to 50°C (32 to 132°F), 0 to 40°C (32 to 104°F) for fan fold paper
	<i>Storage</i>	-40 to 70°C (-40 to 160°F)
Humidity	<i>Roll chart</i>	10 to 90% RH non-condensing
	<i>Fan fold</i>	15 to 80% RH non-condensing
Vibrations		Frequency 10 to 60 Hz, amplitude 0.07 mm, 60 to 150 Hz acceleration 1 g

Dimensions



Distributor :



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