Honeywell

DPR 250 250 MM DIGITAL STRIP CHART RECORDER PRODUCT SPECIFICATION SHEET

43-DR-03-09 March 2010

OVERVIEW

The DPR250 recorder offers the best price/performance of any 250mm (10"inch) wide chart recorder in the market today.

The recorder is able to monitor up to 64 analogue inputs or any combination of analogue 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.

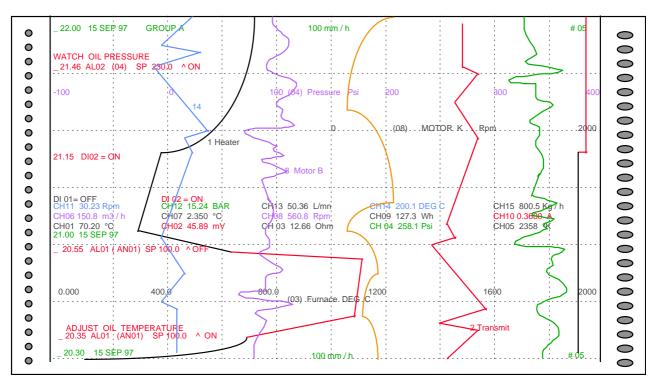
- I/O capability : up to 64 analogue inputs, up to 48 output relays, up to 48 digital inputs, up to 8 retransmitted signals.
- Advanced math package
- Full configurability through the front keys, front PC jack or communication link.
- 2 chart speeds fully configurable
 from 1 to 5000 mm/h (0.04 to 200 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 analogue inputs, maths, communication.
- Up to 48 internal output relays assignable on analogue inputs, maths, events, logic inputs.
- Configurable Periodic chart documentation.
- Periodic report.
- Universal power supply : 100 to 240 Vac/dc.
- Up to 8 retransmitted signals.
- Universal communication: ASCII in RS232, 422/485.
 MODBUS RTU in RS422/485.
 ETHERNET/MODBUS RTU Interface.
- Metal door/case, IP55 protection.



DPR250

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

Rugged, Simple and modular Construction

DPR250

• 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.

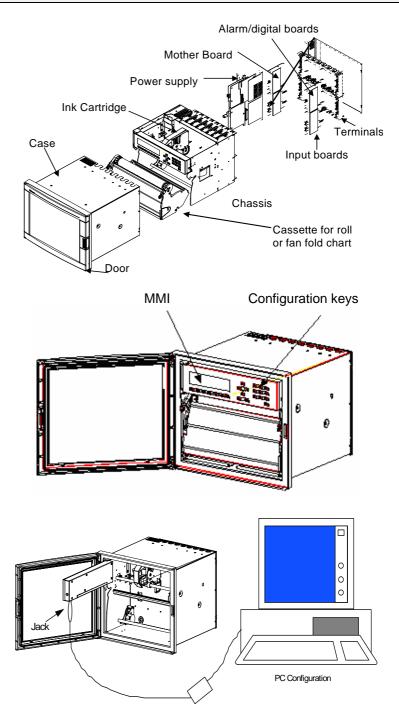
• Universal power supply module : the universal switching mode power supply simplifies installation of the recorder by accepting voltages from 100 to 240 Vac/dc, 50/60 Hz.

• 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 (0.33"). 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

DPR250

Technology		Microprocessor based (22 bits) with non-visibility memory				
Technology		Microprocessor-based (32 bits), with non volatile memory.				
Analogua	Number of inputs	Flash memory for product software upgrade, or specials, via the front jack. From 4 up to 64 in groups of 4. Note. Above 32 inputs could limit the total number				
Analogue inputs	Number of inputs	of alarm outputs or digital inputs.				
	Input boards	2 types : 4 linear inputs per board : mV, V, mA				
	input boards	4 universal inputs per board : mV, V, mA, T/C, RTD, Ohms				
	Signal source	Thermocouple with cold junction compensation, or with remote compensation				
	olgridi source	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.				
	Basic math	Square root extraction or channel differential are standard.				
	functions					
	Filter	Digital filter configurable per input from 0 to 99 sec.				
	Field calibration	Channel calibration 0 to 100% span (or calibration of a group of identical channels)				
		can be made to certify sensor loop.				
	Burnout	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.				
	Scanning time	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.				
	Input impedance	10 MOhms for T/C and mV inputs; > 1 MOhm for V input				
D '	Stray rejection	Series mode > 60 dB. Common mode at 120 Vac > 130 dB				
Display	Fluorescent	2 rows of 16 digits, 8.5 mm (.33 inch) high, matrix display.				
	display	Can display 1 or 2 PV values (5 digits) per line, engineering units (5 digits), alarm				
	Prightpage	status, tag name, math, speed, event messages etc. The display brightness is configurable				
Record	Brightness Chart	250 mm (10") width				
Record	Traces	Up to 32 traces, configurable in 6 colors, thin or thick traces, plus digital traces				
	Trace assignment					
	Scaling	Traces are configurable on analogue inputs, math, communication or digital input Per input, up to 2 analogue scales can be configured to be printed on the chart,				
	Scalling	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				
	Print mode	Trend : Up to 32 traces, with periodic chart documentation configurable in time,				
	1 millinoud	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.				
	Zoning	Each input can be scaled between 0 to 100% of the chart (minimum zone = 20%).				
	Printing group	Up to 2 groups of channels can be defined, with printing selection by :				
		Alarm, logic inputs or logic triggers				
	Pen carriage speed	1.95 second full scale				
Chart length		Roll or fan fold chart 35 meters (115 ft)				
Chart speed		1 or 2 chart speed, fully configurable, selected by : Logic input, alarm				
		communication, front key.				
	Speed setting	Speeds 1 and 2 are configurable from 1 (0.04") up to 5000 mm/hr (200")				
	Resolution	Chart resolution is 0.19 mm (0.0075")				

Technical data

Product configuration	Access	The configuration can be accessed using front keys or the PC configurator,				
	Protection	2 password levels protect the unit configuration from unauthorized access. Level 1 = limited access, Level 2 = full protection.				
	Front keyboard	Configurable and alphanumeric keys allow the operator to change the recorder operation				
	PC configuration	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)	Number of inputs	Up to 48 input contacts, organized in groups of 6 contacts per card Dry contacts (5 mA - 5 Vdc)				
	Actions	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	Set points	Up to 64 set points, freely assignable to analogue inputs, math or communication.				
	Alarm type	High, low, change rate low, change rate high, change rate high-low or deviation with configurable alarm occurrence.				
	Actions	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				
	Relay output (optional)	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	Messages	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.				
	Process Values	Periodic digital print-out at time intervals configurable from 1 minute to 24 hours or through alarms, digital inputs, communication.				
Tag name Chart scales		Each channel can have up to an 8 character name				
		each can be configured from 0 to 9 subdivisions				
	Periodic reports	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.				
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.				
	Actions	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)	Protocols	ASCII in RS232, 422/485. MODBUS RTU in RS422/485. ETHERNET/MODBUS RTU Interface, Interface configured with standard IP address and is utilized with 3 rd party software that provides TCP/IP modbus driver and OPC capability.				
	PC supervision	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)	Current output	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 : analogue traces, math calculations, PV's from the communication link. The zero and span are configurable.				

Technical data

DOMOLA	Actions	Analaysian of DV/ target	evente with file nomes. Elle statis CAMP (
PCMCIA (optional)	Actions	Archiving of PV traces, alarms and events with file names. File size is 24Mbytes max.					
(optional)	PC Analysis	Logging time selectable from 1 sec up to 30 minutes.					
	FC Analysis	TrendManager Pro provides an easy and powerful way to analyse trend, alarm and event files as well as to export the spreadsheet format (CSV).					
Clock timer	Format	Year, month, hour, minute can be s					
	Power						
	interruption	Battery backed (10 years time, 3 years power off)					
	Accuracy	10 ⁻⁵ at reference conditions					
Power supply	, 1000/1009	10° at reference conditions 100 to 240 Vac/dc, (24 Vac/dc on request). Power consumption = 100 VA max					
Packaging	Weight	22 Kg max. (48 lbs)					
Tackaging	Front bezel	310 x 387 mm (12.2 x 15.24 inches)					
	Panel cutout	278 x 348 mm (10.9 x 13.70 inches)					
	Depth	320 mm (12.6 inch) including the rear cover					
	Front protection	IP55					
	Lock	Latch, optional key DIN 43832-N					
	Door	Die cast aluminum : Dark gray or black (optional), door opens to 180°					
	Mounting						
	Wiring	Panel mounting \pm 30° from the horizontal					
Noise immunity	vviring	Screw terminals : Terminal blocks plug on to the boards at the back of the recorder This product is in conformity with the protection requirements of the following European					
Noise minunity		Council Directives:	le protection requirements of the following European				
		 73/23/EEC, the Low Voltage Directive and 89/336/EEC, the EMC Directive. 					
		 Conformity of this product with any other "CE Mark" Directive(s) shall not be assumed. EMC Classification: EN 50081-2-1993 Electromagnetic Compatibility – General 					
		 Emission Standard, Part 2: Industrial Environment. EN 50082-2-1995 Electromagnetic Compatibility – General Immunity Standard, Part 					
		2:Industrial Environment.					
Safety		Complies with EN61010-1 and UL 3121 for process control instrumentation.					
protection		Pollution Degree 2. Installation Cat					
Electrical	Input/input	Continuous operation at 280 Vac o					
insulation	Input/gnd; alarm	Test voltage 2.1 kV dc for 1 minute					
	relay/gnd	Test voltage 3.25 kV dc for 1 minute					
	Input/line;	Test voltage 3.25 kV dc for 1 minute					
	Line/gnd;	Test voltage 3.25 kV dc for 1 minute					
	Logic/gnd	Test voltage 3.25 kV dc for 1 minute					
		Test voltage 500 Vdc for 1 minute					
Temperature	Ambient	0 to 50°C (32 to 132°F), 0 to 40°C ((32 to 104°F) for fan fold paper				
	Storage	-40 to 70°C (-40 to 160°F)					
Humidity	Roll chart	10 to 90% RH non-condensing					
	Fan fold	15 to 80% RH non-condensing					
Vibrations			0.07 mm, 60 to 150 Hz acceleration 1 g				
Accuracy	Reference	Temperature = $23^{\circ}C \pm 2^{\circ}C (73^{\circ}F \pm 3^{\circ}F)$					
	conditions	Humidity = 65% RH ± 5%					
		Line voltage = Nominal \pm 1%					
		Source resistance = 0 Ohm					
		Series mode and common mode = $0 V$					
		Frequency = Nominal \pm 1%					
	Accuracy	Field calibration accuracy 0.05% of the selected range (IEC 873),					
). Cold junction accuracy : ± 0.5°C (32.9°F)				
Rated limits	Parameters	Rated limits	Influence on accuracy				
and associated	Temperature	0 to 50°C (32 to 120°F)	0.15% per 10°C (50°F) of change				
drifts			Cold junction 0.3°C/10°C (32.5°F/50°F)				
	Supply voltage	85 to 250 V	No influence				
	Source	T/C, mV	$6 \mu V$ per 400 Ohms of line resistance max.				
	resistance		= 1000 Ohms				
		RTD	0.1°C per Ohm in each wire balanced eads				
			40 Ohms max. (From 0 to 400°C (32 to 752°F)				
	Humidity	10 to 90% RH at 25ºC	0.1% max.				
	Long-term		0.1% per year				
	stability						

Available ranges

Linear	RTD/Ohms		Thermocouples			
mV 0 to 10 mV -10, 0, +10 mV 0, 20 mV -20, 0, +20 mV 0, 50 mV -50, 0, +50mV 10, 50 mV	Pt 100 at 0°C -50, 0, 150°C -58, 0, 302°F 0, 100°C** 32, 212°F** 0, 200°C 32, 392°F 0, 400°C	JIS -50, 0, 150°C -58, 0, 302°F 0, 100°C** 32, 212°F** 0, 200°C 32, 392°F 0, 400°C	J -50, 0, 150°C J -58, 0, 302°F J 0, 400°C J 32, 752°F J -200, 0, 870°C J -328, 0, 1598°F L -50, 0, 150°C	S 0, 1600°C S 32, 2912°F S -20, 0, 1760°C S -4, 0, 3200°F N 0 , 400°C N 32, 752°F N 0, 800°C	U -50, 0, 150°C U -58, 0, 302°F U 0, 150°C U 32, 302°F U 50, 150°C U 122, 302°F U -200, 0, 400°C U -328, 0, 752°F	
0, 100 mV -100, 0,+100mV 0, 500 mV -500, 0, +500mV	32, 752°F -200, 0, 800°C -328, 0, 1472°F Ni 50 ohms	32, 752°F -200, 0, 500°C -328, 0, 932°F Ref. range	L -58, 0, 302°F L 0, 400°C L 32, 752°F L -200, 0, 870°C L -328, 0, 1598°F	N 32, 1472°F N 0, 1200°C N 32, 2192°F N -200, 0, 1300°C N -328, 0, 2372°F	NiMo 0, 1400°C NiMo 32, 2552°F MoCo 0, 1400°C MoCo 32, 2552°F	
Volt 0, 1 ∨	-80, 0, 320ºC -112, 0, 608ºF	0, 320ºC 32, 608ºF	K 0, 400⁰C	T -50, 0, 150⁰C	W-W26	Ref. range
0, 2 V -2, 0, +2V 0, 5 V -5, 0, +5 V	Ni 508 ohms -80, 0, 150°C -112, 0, 302°F	,	K 32, 752°F K 0, 800°C K 32, 1472°F K 0, 1200°C	T -58, 0, 302°F T 0, 150°C T 32, 302°F T 50, 150°C	-20, 0, 2320°C -4, 0, 4208°F W5-W26	400, 2300°C 750, 4200°F Ref. range
1,5 V 0, 10 V -10, 0, +10 V	Cu 10 Ohms -20, 0, 250°C** -4, 0, 482°F		K 32, 2192⁰F K -200, 0, 1370ºC K-328, 0, 2498⁰F	T 122, 302⁰F T -200, 0, 400⁰C T -328, 0, 752⁰F	-20, 0, 2320°C -4, 0, 4208°F PR 20-40	400, 2300°C 750, 4200°F Ref. range
mA 0, 20 mA 4, 20 mA	Ohms 0, 200 ohms 0, 2000 ohms		R -20, 0, 1760⁰C R -4, 0, 3200⁰F		0, 1800°C 32, 3272°F B 40, 1820°C B 104, 3308°F	600, 1800°C 1110, 3300°F Ref. range 400, 1820°C 752, 3308°F

Notes :

1. Ranges with ** have an accuracy of 0.25%.

For non linear temperature transmitter, the transmitter range MUST be identical to the input range of the recorder.
 The mA inputs has to be connected on a 250 Ohms input across the input terminals.

4. 0.5% per 10°C on Cu 10 ohms; 0.3% per 10°C on Pt100< 200°C

5. The Reference range is the same as the stated range unless noted

Minimum system requirements for PC software

DPR250

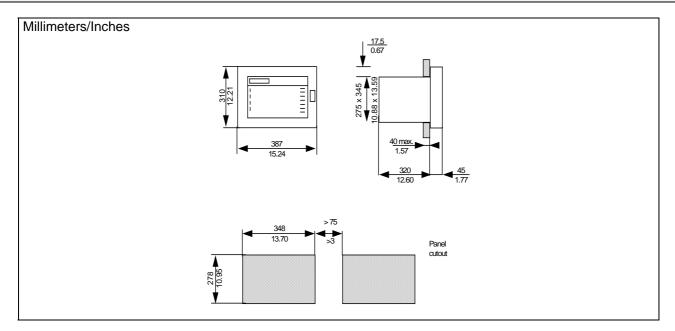
NOTE: Make sure you are an "Administrator" before installing the product. Windows 7 Professional, Ultimate or Enterprise OS 32-bit or 64-bit edition requires 1 GHz Processor, 2GB RAM ٠ and 15GB Hard Disk Space Windows XP SP1 professional requires a 233 Mhz CPU with 128 MB of RAM Windows 2000 SP4 professional requires a Pentium 133 Mhz CPU with 64 MB of RAM Windows NT Workstation 4.0 SP5 requires a 486 Mhz CPU with 32 MB of RAM

- Windows 98SE requires a Pentium 150MHz processor with 32 MB of RAM
- 10MB free on your hard disk for the PC Configuration software.
- Recommended video resolution: 800x600 or higher.

DPR250

Dimensions

DPR250



Warranty/Remedy

Honeywell warrants goods of its manufacture as being free of defective materials and faulty work-manship. Contact your local sales office of warranty information. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair of replace without charge those items it finds defective. *The foregoing is Buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.* Specifications may change without notice. The information we supply is believed to be accurate and reliable as of printing. However, we assume no responsibility for its use. While we provide application assistance personally, through our literature and the Honeywell website, it is up to the customer to determine the suitability of the product in the application.

Sales and Service

For application assistance, current specifications, pricing, or name of the nearest Authorized Distributor, contact one of the offices below.

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