

DPR 100 FUNCTIONAL SPECIFICATIONS

Technical data																
Analogue inputs																
DPR 100A pen recorder	1, 2 or 3 continuous traces. Pen 1 also prints all chart documentation.															
DPR 100B multipoint recorder	1 up to 6 channels. Inputs are scanned by relays, galvanically isolated and individually configurable to any listed actuation.															
Signal source	Thermocouple with individual cold junction compensation. Line resistance up to 1000 ohms T/C, mV, mA, Volt. RTD Pt 100 3-wire connections, lead resistance per wire 40 Ω balanced.															
Field calibration	A channel field calibration 0 % and 100 % span, may be made to certify input sensor loop.															
Burnout	T/C, mV, Volt; factory set to upscale (configurable to downscale or none) RTD : inherent upscale. mA : inherent downscale.															
Scanning time	<table border="1" style="margin-left: 20px;"> <thead> <tr> <th style="text-align: left;">Pen: Chart Speed</th> <th colspan="2" style="text-align: center;">Inputs</th> </tr> <tr> <th></th> <th style="text-align: center;">mV, V, mA</th> <th style="text-align: center;">T/C, RTD</th> </tr> </thead> <tbody> <tr> <td style="padding-left: 20px;">at 10-60 mm/h</td> <td style="text-align: center;">330 ms</td> <td style="text-align: center;">2 sec</td> </tr> <tr> <td style="padding-left: 20px;">at 60-300 mm/h</td> <td style="text-align: center;">330 ms</td> <td style="text-align: center;">1 sec</td> </tr> <tr> <td style="padding-left: 20px;">at > 300 mm/h</td> <td style="text-align: center;">330 ms</td> <td style="text-align: center;">330 ms</td> </tr> </tbody> </table> <p>Mpt: 5 seconds for 6 channels.</p>	Pen: Chart Speed	Inputs			mV, V, mA	T/C, RTD	at 10-60 mm/h	330 ms	2 sec	at 60-300 mm/h	330 ms	1 sec	at > 300 mm/h	330 ms	330 ms
Pen: Chart Speed	Inputs															
	mV, V, mA	T/C, RTD														
at 10-60 mm/h	330 ms	2 sec														
at 60-300 mm/h	330 ms	1 sec														
at > 300 mm/h	330 ms	330 ms														
Input impedance	10 Mohm for T/C, mV inputs. >1 Mohm for volt inputs.															
Stray rejection	Series mode ≥ 60 db. Common mode at 250 VAC ≥ 130 db.															
Logic inputs (option)																
Actions	Up to 2-dry contact inputs (1,5 mA - 12 VDC). Change chart speed 1 to speed 2. Print inhibit. Event marking: Pen: Pen 1 used as operation marker on the right side of the chart. Multipoint: 2 traces maximum on the right side of the chart. (L ₁ = purple, L ₂ = red).															
Scales																
Per	1 analog scale per pen in accordance with the input range configuration.															
Multipoint	1 analog scale, 0 to 100 linear.															
Recording span																
Scaling	Per input, an analog scale is printed on the chart with the engineering unit. Each input can be configured differently.															
Pen offset	Distance between pens: 2 mm. Chart definition: 1 step = 0.2 mm.															
Pen carriage speed	1 second full scale.															
Chart length	Fan fold 18 m, (as DIN 16230) Roll 24 m															

Pen trace	Pen Multipoint	1400 m per pen. 250 m per colour.
Chart speed	Speed setting Stepping chart motor	1 or 2 chart speeds, fully configurable, selected by a logic input. Speed 1 : fully adjustable per step of 1 mm/H, within limit. Speed 2 : choice as per the model selection guide. Pen: 10 to 6000 mm/h (.5 to 240"/h). Mpt: 10 to 1500 mm/h (.5 to 60"/h). Resolution 0.12 mm.
Alarms (option)	Pen 1,2,3 or Mpt 3 CH Mpt (6 CH) Hysteresis Outputs Rating contact	2 alarm set-points per channel, (factory set* 1 low, 1 high). 1 alarm set-point per channel, (factory set* high). 0.5% to 99% of Scale (Factory Set at 0,5%). Up to 6 alarm relays output contacts. 1 SPST normally closed contact (may be configured into normally open contact). 2 A, 250 VAC on resistive loads. * other selections configured by PC
Power supply	To transmitters Power consumption:	85 to 264 VAC, 50/60 Hz or 24 or 48 VAC/DC (+10 -15% nominal) 24 VDC, 50 mA max (optional). 3 pens: 30 VA max. Multipoint : 30 VA max.
Clock timer	Format Power interruption Accuracy	Year, month, hour, minute can be set. Battery back-up time of 10 years with 3 years off power. ± 10%.
Packaging	Weight Front face Depth Front window Front protection Lock Cut out Construction Optional	Pen: 3,5 kg Multipoint: 3,5 kg 144 x 144 mm according to DIN 43718. 245 mm/9.7" behind panel, including terminals and line protection cover. Acrylic. IP 54 (IEC 529). Latch or key (DIN 43832-N). DIN 138 x 138 mm. Silicon-free. Chart illumination. Rear terminal cover.
Mounting		Panel mounting ± 30° from horizontal: (DIN 43834).
Wiring		Rear screw terminals. Terminal modules are plugged on the instrument.
Writing	Pen Multipoint	1 cartridge per pen, fibre tip, 1400 m of trace per colour (blue, red, green). 1 print wheel, 6 colours, 250 m of trace per colour (purple, red, black, green, blue, brown).
Noise immunity		Meets or exceeds: IEC 801-2: electrostatic discharge: meets level 3 IEC 801-3: radiated electrostatic field: meets level 3 IEC 801-4: electrical fast transients: meets level 3 IEC 801-5: line voltage surge: meets level 3 VDE 871 radio EMI interference (EN55022 class B): meets level B

Safety protection	Complies with 414, 348 and 1010-1 installation category 2 for personal protection Designed to meet UL and CSA C22.2, N142 standard (CSA approved).
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Electrical insulation	
Input to input	Test voltage 350 VAC for 1 min (except for RTD input) or 280 VAC with option State Relay.
Input to ground	Test voltage 1.5 kVAC for 1 min.
Input to line voltage	Test voltage 2.3 kVAC for 1 min.
Line voltage to ground	Test voltage 2.3 kVAC for 1 min.
Alarm relay to ground	Test voltage 2.3 kVAC for 1 min.
Logic input to ground	Test voltage 350 VAC for 1 min.

Temperature	
Ambient	0 to 50°C (32 to 120°F). Optionally 0 to 60°C (32 to 140°F).
Storage	-40 to +70°C (0 to +160°F). 10 to 90 % RH non condensing

Humidity	
Roll	10 to 90% RH non-condensing.
Fan fold	15 to 80% RH non-condensing

Vibrations	Frequency 10 to 60 Hz - Amplitude 0.07 mm 60 to 150 Hz - Acceleration 1 g.
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Accuracy

Reference conditions	
Temperature	20°C ± 2°C (68°F ± 3°F).
Humidity	65% ± 5% RH.
Line voltage nominal	± 1%.
Source resistance	0 Ω.
Series mode	0 V.
Common mode	0 V.
Frequency nominal	± 1%.
Accuracy	0.25% of total span (IEC 873).

Rated limits and associated drifts		
Parameter	Rated limits	Influence on accuracy
Temperature	0 to 50°C (32 to 120°F)	0.1% per 10°C Cold junction 0.3°C/10°C
Supply voltage	85 to 264 V	No influence
Source resistance	T/C, mV	6 μV per 100 Ω of line resistance 1000 Ω max
	RTD	0.1°C per Ω in each wire balanced leads, 40 Ω max.
Humidity	10 to 90% RH at 25°C	0.1% max.
Long term stability		0.1% per year
Vibrations	2.5 mm at 0 to 14 Hz 1 g at 14 to 250 Hz	

Extreme conditions

Operating	Temperature	0 to +60°C (0 to 140°F).
	Humidity	10 to 90% RH non-condensing.
Storage	Temperature	-40 to +70°C (-40 to 160°F).
	Humidity	5 to 95% RH non-condensing.

Available ranges

Thermocouples		°C	°F
		J	-50 to +150 0 to 400 0 to 800
K	0 to 400 0 to 800 0 to 1200 0 to 1400	0 to 800 0 to 1500 0 to 2400 0 to 2500	
Nicrosil-Nisil (N)	0 to 400 0 to 800 0 to 1200 0 to 1400	0 to 800 0 to 1500 0 to 2400 0 to 2500	
S	0 to 1600	0 to 3000	
R	0 to 1600	0 to 3000	
T	-100 to +200 0 to 150 50 to 150	-150 to +400 0 to 300 100 to 300	
Note : (Provision to accept T/C input for remote compensation box at fixed temperature of 50°C or 60°C).			

RTD's		°C	°F
		Pt 100 (Alpha = 0.00385)	-50 to + 50°C -50 to +150 0 to 100 -200 to +200 0 to 400

mV and Volt	0 to 10 mV	0 to 1 V
	0 to 20 mV	0 to 5 V
	0 to 50 mV	1 to 5 V
	10 to 50 mV	0 to 10 V
	0 to 100 mV	

mA	0 to 20 mA or 4 to 20 mA linear 4 to 20 mA SQRT input resistor 250 ohms required
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