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Continuous-line Recorder



ABOUT

The Point Master 200 is a microcontrollerbased multipoint recorder which is available in two different version.

The recorder can be connected to transmitters and/or attached directly to thermocouples or resistance thermometers.

Additional functions such as the text printout, the balance sheet and the use of event markings enhance the information value of the logged process variables. Alarm signaling and remote control features contribute to make the PM200 a highly versatile instrument. The standby function supports triggered recording.



FEATURES

- 6 measuring channels
- Optional LED DisplayFormat 144 mm x 144 mm;
- installed depth 250 mm
- With text printout
- 2 alarm values per measuring channel
- Report function
- 4 event markers
- Connection of process signals, thermocouples and resistance thermometers
- Channels are electrically isolated and ungrounded

2 DIFFERENT MODELS

PM201 – LED display

PM202 – Scale display

STANDARD

95 V...240 V AC/DC Parameter definition Plastic door No limit and binary inputs Scale 0...100

OPTIONS

24V ... 85 V AC/DC Custom demand Metal door with glass with limit and binary inputs Custom demand

RECORDERS & DATA ACQUISITION





Specifications

Continuous-line Recorder

Chart speed

Chart speed: 0/2.5/5/10/20/30/60/120/240/300/600/1200 mm/h external changeover for optional speed

Charts: 32 m roll chart or 16 m foulded chart

Visible chart length: 60 mm

Recording width: 100mm (chart width 120 mm, DIN 16 230)

Chart feed-in (with continuous rollpaper): via automatic take-up reel (daily chart tear-off or take-up of 32 m possible)

Power supply

95 V, -10 % ... 240 V, +10 % UC 24 V, -25% ... 85 V, +10 % UC Frequency range: 47.5...63 Hz Power consumption: approx. 20 W / 25 VA

International standards

IEC 848	DIN 43 782	Compensation recorders
IEC 1010-1	DIN EN 61 010-1	Electrical Safety
		(Test voltages)
IEC 664	VDE 0110	Insulation class
IEC 68-2-6	DIN IEC 68-2-6	Mechanical capabilities
		(Vibrations)
IEC 68-2-27	DIN IEC 68-2-27	Mechanical capabilities
		(Shock)
IEC 529	DIN 40 050	Degree of protection
IEC 801	DIN VDE 0843	Immunity of electromagnetic
		interference against
		electromagnetic influences
IEC 721-3-3	DIN IEC 721-3-3	Environmental capabilities
IEC 742	DIN EN 60 742	VDE 0551 classification
		Safety transformer

General and safety data Environmental capabilities	•
Climatic category 3K3 acc. to DIN IEC 721-3-3	
Ambient temperature 02550 °C	•
Transport and storage temperature -40+70 °C	
Relative humidity <75 % annual average, max. 85 % Avoid condensation. Pay attention to air humidity on recording paper acc. to DIN 16 234	
Mechanical capabilities	
Tested acc. to DIN IEC 682-27 and DIN IEC 68-2-6 during transportation	•
Shock 30 g/18 ms Vibrations 2 g/5150 Hz	•
In operation Vibrations 0.5 g / ± 0.04 mm / 5150 Hz / 3 x 2 cycles	•
RS 485 interface	•
a) for parameter-setting b) link to higher-order systems for bidirectional data transmission.	•
The data protocol is based on the PROFIBUS standard	
	•

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Specifications

Measuring section

Deviation

Class 0.5 acc. to IEC 484, referred to nominal range Additionally, if location of start and/or end of measurement changes:

t (0.1% x - 0.1) scale span

Dead zone o.25 % of scale span

Response time

1 s

Print cycle time for all channels 3...360 s, variable

Measuring value damping using first-order-low-pass filter; time constant 0...60s per measuring channel, can be parameterized

Measured variable / nominal ranges

Direct current

0...20 mA, 4...20 mA; R, approx. 50 Ω ± 2,5 mA; R, = 50 Ω ± 5 mA; R, = 50 Ω ± 20 mA; R, = 50 Ω

Direct voltage $0...25 \text{ mV}; \pm 25 \text{ mV}, \text{ R}, \ge 2 \text{ M}\Omega$ $0...100 \text{ mV}; \pm 100 \text{ mV}, \text{ R}, \ge 2 \text{ M}\Omega$ $0...500 \text{ mV}; \pm 500 \text{ mV}, \text{ R}, \ge 2 \text{ M}\Omega$ $0...25 \text{ V}; \pm 2.5 \text{ V}, \text{ R}, \ge 200 \text{ k}\Omega$ $\pm 10 \text{ V}, \text{ R}, \ge 200 \text{ k}\Omega$ $\pm 20 \text{ V}, \text{ R}, \ge 200 \text{ k}\Omega$

Thermocouples, $R, \ge 2 M\Omega$ Type B, E, J, K, L, N, R, S, T, U The nominal measuring range corresponds to the definition ranges of the selected types. Reference junction parameters can be entered internally or externally. Sensor break monitoring can be activated.

Continuous-line Recorder

Resistance thermometer Pt 100 in 2- or 3-wire circuit -50+150 °C; -50+500 °C; -200850 °C Max. line resistance of 2-wire circuit: 40 Ω 3-wire circuit: 80 Ω
Measuring ranges
Start of measuring range can be parameterized over 080 % of the given nominal range
End of measuring range can be parameterized over 20100 % of the given nominal range
Square-root function can be parameterized for direct current and direct voltage nominal ranges
User linearization can be parameterized for direct current and direct voltage nominal ranges
Effects
Temperature
± (0.2 + (0.05 x rominal range 0.05)) % / 10 K
± 1 °C / 10 K for internal reference junction correction
Reference temperature: 25 °C
Supply voltage 0.1 % for 24 V, -25 % 85 V, +1- % UC 0.1 % for 95 V, -10 %240V, +10 % UC
Parasitic voltage: 0.5 % of measuring span
External magnetic field 0.5 mT
With shock and vibration ± 0.5 % of measuring span during and after the effect
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PM200

Specifications

Recording section / measured value display

Scale design

Scale

1 to 6 graduationsCharacter size for specific number of graduations:Graduations123456Character size (mm)444222

Channels display by vertical row of LEDs on left hand side of scale

Scale/channel assignment by vertical row of LEDs on right-hand side of scale

Operator and display panel (behind the chart unit)

Display (for entering parameters only) 5-digit, 7-segment display Numeral size 4 x 7 mm

Operation

with a function key on the rear of the scale plate and 3 keys behind the chart unit

Display versions

The displays are used in the operation mode to display tag number (single-digit), measured value (5-digit), dimensional unit (7-digit), alarm status.

Parameters and parameter values are displayed in the parameter definition mode.

- LC display (illuminated) 16-digit; character size 3.1 x 5.5 mm
- Operation with one function key on the display and 3 keys behind the chart unit
- LED display 16-digit; character size 3 x 5 mm
- Operation with 6 keys on the display

Continuous-line Recorder



PM200

Specifications

Recording trends Event recorder for 10 events

Recording The start, duration and end of event are recorded as an open square

Display (in the case of display version) Last event displayed as clear text message I/O converter required

Cycle time Can be varied between 3...360 s

Text output

Only possible with chart speeds ≤ 240 mm/h

Character size approx. 1.5 x 2 mm

Scope of text output

- Ten lines of text, each containing either max. 32 characters max. 30 characters and time max. 24 characters and time / date Triggered at preset cyclic intervals or in response to events by internal (alarm values) / external initiation (binary inputs)
- 2. Printout of chart speed, date and time Triggered when recorder is switched on and when chart speed is changed
- 3. Printout of current measured values Triggered at preset cyclic intervals or in response to events by internal / external initiation
- Printout of triple lines assigned to measuring points
 Line 1: scale line with channel designation and printout
 of measuring unit
 Line 2: text specific to measuring points, max. 54 characters
 - Line 3: alarm pointers
- Printout of balance sheet table comprising: Message line Start and end times of balance sheet interval Min./max. values during the balance sheet interval Average and cumulative values or over balance sheet interval
 - Triggering: cyclical and external
- 6. Lists of all active parameters Triggered manually in parameter mode

Continuous-line Recorder

Chart speed

	(
Various speeds can be defined 0/2.5/5/10/20/30/40/60/120/240/300/600/1200 mm/h Optional: external speed switching and shutdown Option "Alarm monitoring and binary inputs/outputs required	
Chart paper 32 m chart roll or 16 m folded	(
Visible chart length 60 mm	(
Recording width 100 mm (chart width 120 mm, DIN 16 230)	(
Chart feed-in (roll paper) The start of the paper engages automatically in the take-up reel (charts tom off daily or 32 m van be wound up)	
Power supply Power supply unit	
95 V, -10 %240V, +10 % UC 24 V, -25 % 85V, +10 % UC Frequency range: 47.563 Hz Power consumption: approx. 20 W / 25 VA fully equipped	
RS 485 interface a) for parameter-setting b) link to higher-order systems	(
Mechanical features	(
Tested acc. to DIN IEC 68-2-27 and DIN IEC 68-2-6 During transportation Shock 30 g/18 ms Vibrations 2 g/5150 Hz In operation Vibrations 0.5 g / ± 0.04 mm / 5150 Hz / 3 x 2 cycles	
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Specifications

Continuous-line Recorder

RS 485 interface

"Alarm monitoring and binary input" options

External chart speed switching Control voltage: 24 V DC / 6 mA external

Alarm monitoring

2 alarm values per channel for absolute value monitoring 6 internal relays can be freely assigned to alarm values Output: normally open contact

(The roots of the contacts are interconnected)

Contact loading: 30 V / 100 mA 14 additional relays available via external I/O converter

Event marking

4 markings are possible Recording at approx. 2 %, 5 %, 95 % and 98 % recording width Control voltage: 24 V DC / 6 mA external

10 event markings

can be used (without measured value recording) via external I/O converter

Balance sheet function

The balance sheet function can be selected for each measuring channel. External control of the balance sheet interval is via a selectable binary input. Control voltage: 24 V DC / 6 mA external

Electromagnetic compatibility

The protection objectives of EMC guideline 89/336/EWG as regards radio interference suppression acc. to EN 55 011 and immunity to interference acc. to EN 50 082-2 are met.

Radio interference suppression acc. to EN 55 011 Threshold class B German Post Office Degree 243/92

Immunity to interference

Test acc. to IEC 801 / EN 60 801

Type of test	Test intensity	Effect	Severity
Burst (5/50 ns) on mains line measuring line	2 kV 1 kV	≤1% ≤1%	3 3
Surge (1,2/50 µs) on 230 V mains line common differential 24 V mains line common differential	2 kV 1 kV 1 kV 0.5 kV	≤1% ≤1%	3 2
HF field radiated 80 MHz1 GHz conducted 0.1580 MHz	10 V/m 10 V	≤1% ≤1%	3 3
1 MHz pulse on mains line common differential	2 kV 1 kV	≤1% ≤1%	3 3
ESD (1/30 ns)	6 kV	≤1%	3

The NAMUR industrial standard RMC is met. (Interface lines shielded)

Permissible parasitic voltages

	Permissible parasitic voltage
Serial parasitic voltage Peak to peak	< 0.3 x measuring span max. 3 V
Normal mode rejection	75 dB
Common mode parasitic voltage	60 V DC / 250 V AC
Common mode suppression	83 dB for DC 96 dB for AC



PM200

Specifications

Connection, housing and mounting

Electrical connections

Degree of protection IP 20 Threaded-head terminals for measuring inpits, control inputs and alarm value relay outputs. Max. wire cross-section 2 x 1 mm² Screw terminals for mains connections Max. wire cross-section 1 x 4 mm² RS 485 interface via 9-pin SUB-D connector

Housing

Moulded plastic for panel and mosaic panel field mounting (dimensions see dimensional drawing)

Degree of case protection acc. to IEC 529 Front IP 54; Rear IP 20

Case colour

Pebble grey to RAL 7032 or grey-white to RAL 9002

Case door

Moulding material option: metal frame door with glass

Mounting orientation

lateral (-30°...0...+30°), inclination towards the back 20°, towards the front 20°

Mounting distance horizontal or vertical 0 mm, case door must open at 100°

Weight: approx. 3.5 kg

Continuous-line Recorder

Default settings	
Scale with one graduation 0100 will be supplied automatically if no scale graduation is specified when ordering the recorder	
 Basic parameters If no particular definition is given when ordering the recorder, the PS200 will be supplied with the following parameter setting: All measuring channels with measuring range 020 mA Speed 1: 20 mm/h Speed 2: 120 mm/h Alarm values are set to end positions (0 and 20 mA) Measured value damping and zoom, printer and alarm functions are off No password defined These parameter defaults can be initialized at any time when the recorder is in service mode 	
Electrical safety	
Tested acc. to DIN EN 61 010-1 (Classification VDE 0411) or IEC 1010-1	
Class of protection: I	
Overvoltage category III at mains input II at inputs and outputs	
Degree of pollution: 2 within the device and at the terminals	
Test voltage 3.75 kV measuring channels against power supply 2.20 kV earthing conductor against power supply	
Functional extra-low voltage (PELV) between mains input – measuring channels, control lines, interface lines to VDE 0100 part 410 and VDE 0106 part 101	
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Ordering information

Continuous-line Recorder

CORAME SAS

MESURE-CONTROLE-AUTOMATISME Tél: ROUEN 02 35 59 62 50 / CAEN 02 31 35 76 45

info@corame.fr

www.corame.fr

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Multipoint Recorder PointMaster 200 Catalog No. V41	411A-		Code		YOUR	1
Standard colour RAL 7032 (pebble grev)			Code		CHOICE	
Version						
PointMaster 200 S scale version		1				
Pointmaster 200 D2 with LED display		3				
Measuring range						
Universal version for:						
process signals, thermocouples, resistance thermometers		9				
Power supply		_				
95 V240 V AC/DC		5				
24 V85 V AC/DC		6				
Recording		_				
on rolled chart paper (32 m)		1				
on folded chart paper (16 m)		2				
Case	- F	-				
RAL 7032 with moulded door, H&B design		-				
RAL 7032 with metal frame door (glass window), H&B design		3				
Parameter definition	- F	1				
standard		-				
Alarm monitoring and binary inputs		2				
without		-				
with	⊢	ĭ				
Create the required Code No. for each chappel		-				
Scale						
Character height for 1 and 2 graduations: 5mm						
Character height for 3, 4, 5 and 6 graduations: 2mm		- 1				
1st graduation (above)	- F	3	1			
2nd graduation		3	2			
3rd graduation		3	3	·		
4th graduation		3	4			
5th graduation		3	5	·		
6th graduation (below)		3	6	·		
without		_		0		
0100		- 1		1		
as specified				3		
Additional		-				
Labelling of the tag name plate						
Character height 3mm (max. 31 characters per tag)						
		5	7	2		
Channel 1		2				
Channel 1 Channel 2	E	5	7	5	t	
Channel 1 Channel 2 Channel 3	E	5 5	7 7	5 8		
Channel 1 Channel 2 Channel 3 Channel 4		5 5 5	7 7 8	5 8 1		
Channel 1 Channel 2 Channel 3 Channel 4 Channel 5		5 5 5 5 5	7 7 8 8	5 8 1 4		
Channel 1 Channel 2 Channel 3 Channel 4 Channel 5 Channel 6		5 5 5 5 5 5	7 7 8 8 8	5 8 1 4 7		
Channel 1 Channel 2 Channel 3 Channel 4 Channel 5 Channel 6 Operating Manual		5 5 5 5 5	7 7 8 8 8	5 8 1 4 7	- - - -	
Channel 1 Channel 2 Channel 3 Channel 4 Channel 5 Channel 6 Operating Manual German		5 5 5 5 5 2	7 7 8 8 8 2	5 8 1 4 7 D	- - - -	
Channel 1 Channel 2 Channel 3 Channel 4 Channel 5 Channel 6 Operating Manual German		5 5 5 5 5 2 Z	7 7 8 8 8 2 2	5 8 1 7 D E	-	
Channel 1 Channel 2 Channel 3 Channel 4 Channel 5 Channel 6 Operating Manual German English French		5 5 5 5 5 7 2 2 2 2	7 7 8 8 8 2 2 2 2	5 8 1 7 D E F	- - - - -	
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Channel 1 Channel 2 Channel 3 Channel 4 Channel 5 Channel 6 Operating Manual German English French Certificates Constructor's test certificate M acc. to DON 5535-18-4.2.2 and inspection certificate B acc. to EN 10204-3.1B Consumables Print head Roll chart paper	Catal 41481-	5 5 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	7 7 8 8 2 2 2 2 9 9 0. 6659	5 8 1 4 7 D E F 9		
Channel 1 Channel 2 Channel 3 Channel 4 Channel 5 Channel 6 Operating Manual German English French Certificates Constructor's test certificate M acc. to DON 5535-18-4.2.2 and inspection certificate B acc. to EN 10204-3.1B Consumables Print head Roll chart paper with hourly time imprint for 20mm/h	Catal 41481-	5 5 5 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	7 7 8 8 2 2 2 2 2 2 9 9 00. 0659	5 8 1 7 D E F 9		
Channel 1 Channel 2 Channel 3 Channel 4 Channel 5 Channel 6 Operating Manual German English French Certificates Constructor's test certificate M acc. to DON 5535-18-4.2.2 and inspection certificate B acc. to EN 10204-3.1B Consumables Print head Roll chart paper with hourly time imprint for 20mm/h without time imprint; with baselines	Catal 41481- 40920- 40920-	5 5 5 5 5 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7	7 7 8 8 2 2 2 2 2 2 9 9 0. 0659 90505	5 8 1 7 D E F 9		
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