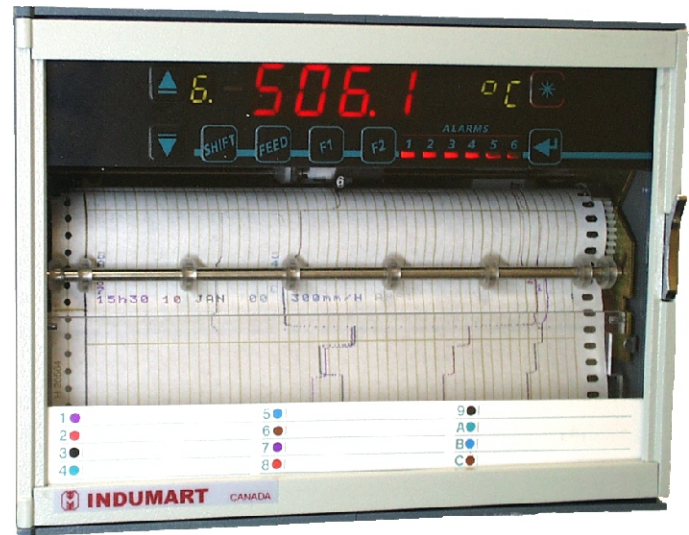
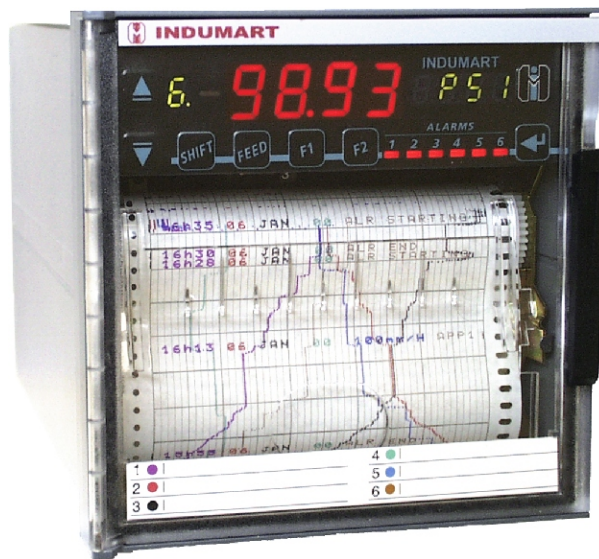


SERIES: MPR200

**MICROPROCESSOR
BASED**



- 6 or 12 UNIVERSAL ANALOGUE AND 4 LOGIC INPUTS
- 100 mm OR 150 mm PAPER WIDTH
- 12 ALARM SET POINTS WITH 6 LED INDICATIONS
- DIGITAL INDICATION OF CHANNELS, PROCESS VALUES AND TAG No'S
- FRONT PANEL CONFIGURATION
- PC CONFIGURATION (OPTION)
- CLOCK AND TIMER
- LINE THICKENING FEATURE
- SQUARE ROOT EXTRACTION
- SENSOR FAILURE INDICATION
- SOFT LEVEL AND HARD LEVEL LOCKING
- INPUT FILTERING AND OFFSET ADJUSTMENT
- ON/OFF SWITCH PLACED INSIDE THE RECORDER
- CUSTOM MESSAGE PRINTING PLUS TIME AND ALARM STAMPING
- PROGRAMMABLE AND REMOTELY CHANGEABLE CHART SPEEDS
- THERMOCOUPLE COLD JUNCTION TEMPERATURE COMPENSATION
- INPUT/OUTPUT/POWER SUPPLY/DIGITAL COMMUNICATION ISOLATION
- LOGIC OUTPUT BOARDS (OPTION)
- UP TO 6 OUTPUT RELAYS (OPTION)
- RETRANSMISSION OUTPUTS (OPTION)
- AUXILIARY POWER SUPPLIES (OPTION)

INTRODUCTION

Indumart *MPR200 series* Multipoint Strip Chart Recorders are microprocessor-based, standard DIN size 144 x 144 mm or 144 x 192 mm instruments which come as six-pen or twelve-pen universal input analogue recorders. The standard depth of the unit is only 200 mm, ideal for control panel mounting.

Inputs to *MPR200 Series* recorders can be thermocouple, RTD, potentiometer, millivolt DC, volt DC and mA current signals. For excellent accuracy in temperature recording, thermocouple and RTD characteristics are fully linearised by means of software. Additionally, thermocouple measurements benefit from an internal platinum resistance detector for automatic cold-junction temperature compensation.

Value of all input signals, both digitally and graphically, along with their corresponding channel identification numbers, date, time of the day, chart speed, alarm initiation and custom messages are printed in six different colours on the roll or fanfold chart.

A bright, large size, 4-digit LED display indicates the value of each input along with other displays for channel and tag numbers.

The recorder accepts four logic inputs. These inputs perform special functions such as: turning the recorder on or off, changing the speed of the chart, digital printing of displayed channels and message printing.

Configuration is accessed through the front panel keys and is both password and hardware protected. For fast configuration, values of any channel or alarm can be copied to other channels very easily. The *MPR200 Series* also supports PC-based configuration and provides the advantages of off-line configuration. Communication with other instruments are provided by the means of digital serial communications which support both binary and Modbus communications.

Twelve High or Low alarm set points along with their hysteresises can be assigned to six LED indicators and/or to six optional output relays. While in the alarm area, the channel will be recorded with a double or a wide trace line. Alarm starting and alarm ending messages can be recorded on the chart for more illustration.

While configuring the recorder, two chart speeds can be specified. With the aid of one of the logic inputs, the speed of the chart can switch between these two speeds. Other chart speeds may also be defined such as: being proportional to one of the analogue inputs or to the number of pulses on one of the logic inputs. In these cases, the span of the chart speed is adjustable.

The recorder is designed to provide electrical isolation between each individual input by the means of relay multiplexing. Inputs and outputs and power supply are isolated for up to 1500 V. Serial communication boards are also isolated from the microprocessor board for up to 500 V.

The *MPR200 Series* allows various option boards to be fitted in the three option slots. Logic output boards, current or voltage retransmission boards, auxiliary power supplies, RS-232 or RS-485 communications and up to six alarm relays may be added to the recorder. These option boards may be purchased along with the recorder, or ordered and placed in the available slots inside the unit by the operator at a later time.

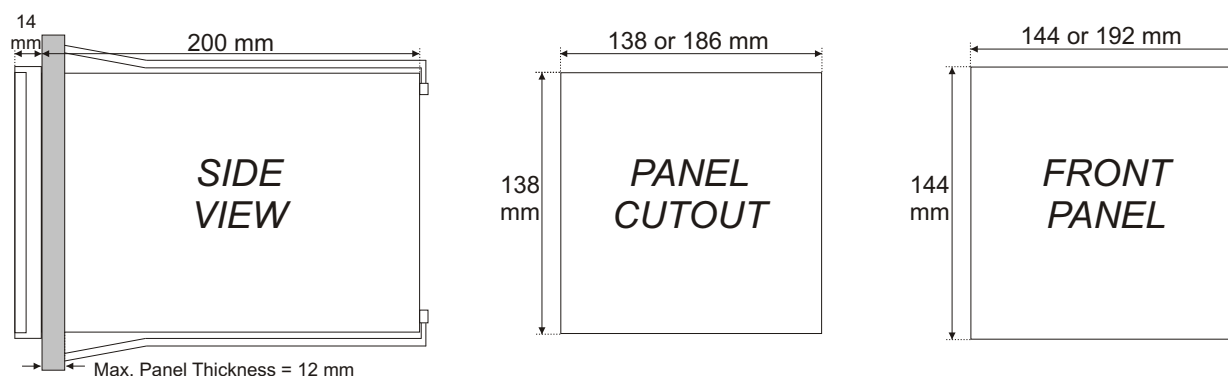
The retransmission option provides up to three analogue outputs. The re-transmitted outputs could be current or voltage with 12 bits resolution and isolated for up to 500 VAC from the rest of the recorder.

Each auxiliary power supply board is capable of providing a supply of 22 VDC with a current limitation of 28 mA, sufficient for operating a transmitter.

SPECIFICATIONS

Number of Input	6 or 12 analogue inputs and 4 digital inputs	Pen Type	Disposable six-nib cartridge, 6 colours (purple, red, black, green, blue, brown)
Analogue Input Type	Thermocouples (K, J, T, S, R, N & B), RTD, mA with shunt, potentiometer < 10 k Ω , millivolt DC, up to 10 VDC and up to 460 V using the optional voltage divider	Chart Speed	1 to 1000 mm/h
Digital Input Type	Dry contact 0-5 V or 0-10 V	Chart Type	16m roll / fanfold, 8m fanfold
RTD Resistive Load	20 Ω maximum	Chart Width	100 or 150 mm
Accuracy	0.1% for linear inputs 0.15% for RTD and T/C + cold junction compensation	Printing	Vertical step: 0.2 mm (0.2%) Horizontal step: 0.3 mm
Digital Display	7-segment LED; Cyclic or continuous	Sensor Failure	Flashing display
Input Display	4-digit, 14 mm high, red	Relays	3 A, 250 VAC or 30 VDC
Tag or Unit Display	4-digit, 7.6 mm high, yellow	Logic Output	0 to 10 V $\pm$ 10%; 10 mA
Channel # Display	1-digit, 7.6 mm high, yellow	Aux. Power Supply	22 $\pm$ 10% VDC @ 28 mA
Alarm Status Display	6 red LED's	Output Retransmission	0-20 or 4-20 mA, 500 Ω max. 0-5, 1-5, 0-10 or 2-10 V, 40 mA
Scan Rate	250 ms per scanned channel, 100 ms if recording only one channel	Output Accuracy	$\pm$ 0.1% if factory calibrated
Alarms	12 configurable high and low	Digital Communications	RS-232 or RS-485
Isolation	Inputs: 500 V I/O/power supply: 1500 V RS/ μ P board: 500 V Common points between the measured analogue input and the logic input	Digital RS-232	Limited to <30 m distance; MODBUS, ASCII or RTU; 300 to 9600 Bauds; Monodrop
Power Supply	115 or 230 VAC, 12 to 72 VDC / 18 to 48 VAC	Digital RS-485	Limited to <1 km distance; MODBUS, ASCII or RTU; 300 to 9600 Bauds; Multidrop (<32 devices)
Noise Rejection	Common mode: > 120 db	Case	Metallic with hinged door
Power Consumption	Lower than 20 VA	Front Panel Sealing	IP-54 on front panel
		Working Temperature	0...+50°C
		Storage Temperature	-20...+70°C
		Panel Size	144 x 144 mm or 144 x 192 mm
		Panel Cutout	138 x 138 mm or 138 x 186 mm
		Weight	3.5 kg for 144 mm width 4.6 kg for 192 mm width

DIMENSIONS



ORDER CODES

Model **MPR200**

No.OF CHANNELS
(6 or 12)

RECORDER SIZE

144 x 144 mm
144 x 192 mm

CHART PAPER

16-meter roll
16-meter fanfold
8-meter fanfold

POWER

115 / 230 VAC, factory set 115 VAC
115 / 230 VAC, factory set 230 VAC
12 to 72 VDC / 18 to 48 VAC (option)

FIRST OUTPUT BOARD

Not required
Logic
1 changeover relay
2 relays with common point
Current
Voltage
Auxiliary power supply

SECOND OUTPUT BOARD

Not required
Logic
1 changeover relay
2 relays with common point
Current
Voltage
Auxiliary power supply

THIRD OUTPUT BOARD

Not required
Logic
1 changeover relay
2 relays with common point
Current
Voltage
Auxiliary power supply
Serial RS-232
Serial RS-485

NOTE: Please specify the number of shunts required.
If requiring voltage dividers, please specify the number of high voltage inputs (1 to 6)



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