

100mm HYBRID CHART RECORDER



LARGE
18mm LED

SHORT DEPTH
(150mm)

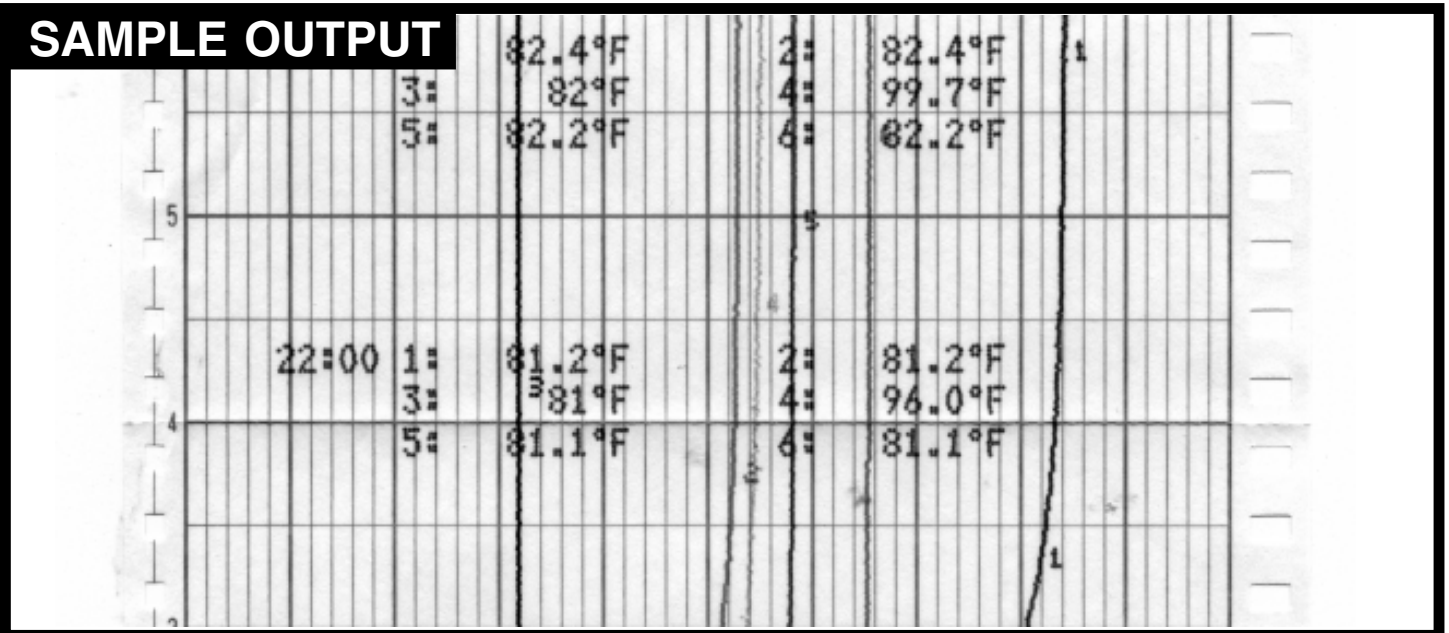
STANDARD

- 1 PEN, 2 PEN or 6 DOT
- UNIVERSAL INPUT - T/C, RTD, mA, V
- REAL TIME CLOCK
- PROGRAMMABLE
 - Range, Speed, Log Pint, Scaling,
 - Square Root, Integration, Zone Print
 - Digital Filter (pen), Alarm Hysteresis
- IP65 - WATERPROOF
- UL, CSA, CE APPROVALS
- RS232C COMMUNICATIONS

OPTIONS

- ALARM - PAPER OUT
- PORTABLE HOUSING
- RS 485
- 3 - DIGITAL INPUT
- CHART STOP/START
- CHANGE CHART SPEED
- DATE & TIME PRINT
- MANUAL PRINT
- 3 - ALARM RELAY (1,2 PEN)
- 6 - ALARM RELAY (6-DOT)

SAMPLE OUTPUT



STANDARD FUNCTIONS

ITEM	DESCRIPTION
ANALOG RECORDING	(1/2pen) Continuous pen recording (6dot) 6 color dot print
DIGITAL DISPLAY	Indicates Channel #, Process variable, date, chart speed, alarm setpoint
LOGGING PRINT	Prints date, time, scale, chart speed, PV & ENG unit at set intervals
LIST PRINT	Prints chart speed, input type, range, eng unit, alarm SP, comment print status, printing desc., logging print ON/OFF config, Zone print config, point focus config
ENG LIST PRINT	Print config of channel/tag print switch, alarm print, log print ON/OFF, reference time, interval, alarm hysteresis, burnout protect, scaling print ON/OFF, DI function
AFFIX PRINT (6dot)	Prints channel number beside analog line
MANUAL PRINT	Prints measured data by front key operation analog recording stops during manual print.
SKIP (6dot)	Can skip printing certain channels
PROGRAMMING	Programs chart speed, alarm setpoint, logging print interval, skip, date and time
MEMORY BACKUP	Backup for clock-10yr lithium battery. Non volatile memory - config and cal data
ALARM	Sets 2 types of alarms(H/L) / channel
CHART SPEED	Selects chart speed
CLOCK INDICATION	Indicates year, month, day, hr, min Automatic leap year calculation
SELF DIAGNOSTICS	Indicates "ERROR"
SCALING	Indicates and records scaling values for engineering units

CONFIGURABLE

ITEM	DESCRIPTION
BURNOUT PROTECTION	Sets pointer at +100% with open input
TAG NUMBER	Prints channel tag at log print Pen-max 5 characters 6dot - max 7
TEMP COMPENSATION	Can be specified
COPY FUNCTION	Channel configuration can be copied from 1 channel to another
INPUT OFFSET	Input offset can be programmed
ZONE RECORDING	Recording within a specified range for a channel
POINT FOCUS RECORDING	Programmable
DECADE RECORDING	Records and indicates up to 5 decade
ALARM PRINT	Prints time, channel, setpoint, alarm type
ALARM RECOVER PRINT	Prints recovery time, channel, setpoint, alarm type
SQUARE ROOT	Available for non-linear scaling
INTEGRATION	Sum, balance, averaging can be integrated
DAMPING (pen)	Dampens pen response
ALARM HYSTERESIS	Programmed as 0% or 0.5%FS

SPECIFICATIONS - RM10C

1. INPUT (CAN BE MIXED INPUT)

Thermocouple	J, K, T, E, B, R, S, N, U, L, Au-Fe, PR-40-20,PLII
RTD	Pt100 ohms RTD (DIN or JIS),
Linear Current	4-20maDC
Linear Voltage	+/-10mV, 0-20mV, 0-50mV, +/-200mV, 0-5V, +/-10V, +/-1V
Range	See Table below
Accuracy	See Table below
Sample Rate	120 mS (1/2pen) 10sec / 6 Channel (6-dot0)
Input Impedance	10Mohm min in mV, TC input 200kohm min in mV, TC input (burnout protection) 1Mohm min in Volt input 250ohm (external shunt resistor) in 4-20mA input
Allowable Signal Source Resistance	10Kohm max in mV, TC input 100ohm max in mV, TC input (burnout protection) 1Kohm max in Volt input 10ohm max per line rtd input
Norm Mode Reject	60dB min (50/60Hz +/-0.1)
Common Mode Reduction Ratio	140dB min (50/60Hz +/-0.1)

2. RECORDING / PRINTING

Recording	(1/2pen) Disposable Felt Pen (6dot) Wire Dot 6-color Ribbon
Printing	(1/2pen) Wire Dot 1-color Ribbon (6dot) Wire Dot 6-color Ribbon
Dot Print Interval	(6dot) Selectable - 10, 20, 30, 60sec, / 6 Channel
Chart Paper	Length - 16m (52ft), Printing Width - 100mm
Chart Speed	(1/2pen) Selectable 5-12000mm/hr (41 ranges) (6dot) Selectable 0-1500mm/hr (34 ranges)
Print Colors	(1/2pen) Pen1 - red, Pen2 - green (6dot) Purple, Red, Green, Blue, Brown, Black
Periodic Printing (Selectable)	Actual Process Values, Date, Time, All programming Print
Chart Feed Accuracy	+/-0.1% max

3. ALARMS (Option)

Number of Relays	Qty 3 (1/2pen) or 6 (6-dot)
Alarm Types	Process High, Process Low
Relay Rating	3A, 250VAC max (resistance) NO 3A, 30VDC max (resistance)
Setting Accuracy	Digital readout accuracy - see chart
Hysteresis	0.5% of Full Scale (adjustable)
Printing	Can print alarm on chart in alarm condition
Chart Sensor	Detects when paper out

4. DIGITAL INPUTS (Option)

Number of DI	3 (option)
External Contact Functions	Rating 50vdc, 16mA Chart stop/start Change chart speed (toggles between 2 speeds) External logging print (prints when relay on) Date time print

5. COMMUNICATIONS

Standard	RS232
Optional	RS485 (Modbus)

6. POWER

Rating	85 - 265 VAC (45/65Hz) 30VA max
--------	---------------------------------

7. ENVIRONMENTAL & PHYSICAL

Operating Temp	0 - 50°C
Humidity	20- 80%
Isolation Resist	Each Terminal/ground - 500vdc, 20Mohm
Dielectric	Power term/ground - 1.5KVAC Input Term/ground - 0.5vac, 1min
Instrument Size	144mmW x 144mmH x 150mmD
Cutout	138mmW x 138mmH
Weight	1pen-2kg, 2pen-2.5kg, 6dot-1.5kg
Front Face	IP65 (waterproof)
Max Incline	30° Max
Vibration Resist	10-60Hz 1m/s ² max
Shock Resistance	2m/s ² max

MEASUREMENT RANGE & ACCURACY

TYPE	RANGE	MEASUREMENT RANGE	DIGITAL DISPLAY ACCURACY	DIGITAL RESOLUTION	ANALOG ACCURACY (DIGITAL ACCURACY)	SPECIAL NOTES
DC VOLTS		-10 to 10mV	+/-0.2%reading + 3digits	10uV	+/-0.3% SPAN	
DC VOLTS		0 to 20mV	+/-0.2%reading + 3digits	10uV	+/-0.3% SPAN	
DC VOLTS		0 to 50mV	+/-0.2%reading + 2digits	10uV	+/-0.3% SPAN	
DC VOLTS		-200 to 200mV	+/-0.2%reading + 3digits	100uV	+/-0.3% SPAN	
DC VOLTS		-1 to 1V	+/-0.1%reading + 3digits	1mV	+/-0.3% SPAN	
DC VOLTS		0 to 5V	+/-0.2%reading + 2digits	1mV	+/-0.3% SPAN	
DC VOLTS		-10 to 10V	+/-0.3%reading + 3digits	10mV	+/-0.3% SPAN	
DC AMPS		4-20mA	+/-0.2%reading + 2digits	0.01mA	+/-0.3% SPAN	
THERMOCOUPLE	B	0.0 to 1820.0C	+/-0.15%reading + 1C	0.1C	+/-0.3% SPAN	400-600C : +/-2C
THERMOCOUPLE	R1	0.0 to 1760.0C	+/-0.15%reading + 1C	0.1C	+/-0.3% SPAN	0-100C: +/-3.7C, 100-300C : +/-1.5C
THERMOCOUPLE	R2	0.0 to 1200.0C	+/-0.15%reading + 0.8C	0.1C	+/-0.3% SPAN	0-100C: +/-3.7C, 100-300C : +/-1.5C
THERMOCOUPLE	S	0.0 to 1760.0C	+/-0.15%reading + 1C	0.1C	+/-0.3% SPAN	0-100C: +/-3.7C, 100-300C : +/-1.5C
THERMOCOUPLE	K1	-200.0 to 1370.0C	+/-0.15%reading + 0.7C	0.1C	+/-0.3% SPAN	-200to-100C: +/-0.15% of reading+1C
THERMOCOUPLE	K2	-200.0 to 500.0C	+/-0.15%reading + 0.4C	0.1C	+/-0.3% SPAN	-200to-100C: +/-0.15% of reading+1C
THERMOCOUPLE	K3	-200.0 to 300.0C	+/-0.15%reading + 0.3C	0.1C	+/-0.3% SPAN	-200to-100C: +/-0.15% of reading+1C
THERMOCOUPLE	E1	-200.0 to 800.0C	+/-0.15%reading + 0.5C	0.1C	+/-0.3% SPAN	
THERMOCOUPLE	E2	-200.0 to 300.0C	+/-0.15%reading + 0.4C	0.1C	+/-0.3% SPAN	
THERMOCOUPLE	E3	-200.0 to 150.0C	+/-0.15%reading + 0.3C	0.1C	+/-0.3% SPAN	
THERMOCOUPLE	J1	-200.0 to 1100.0C	+/-0.15%reading + 0.5C	0.1C	+/-0.3% SPAN	-200to-100C: +/-0.15% of reading+0.7C
THERMOCOUPLE	J2	-200.0 to 400.0C	+/-0.15%reading + 0.4C	0.1C	+/-0.3% SPAN	-200to-100C: +/-0.15% of reading+0.7C
THERMOCOUPLE	J3	-200.0 to 200.0C	+/-0.15%reading + 0.3C	0.1C	+/-0.3% SPAN	-200to-100C: +/-0.15% of reading+0.7C
THERMOCOUPLE	T1	-200.0 to 400.0C	+/-0.15%reading + 0.5C	0.1C	+/-0.3% SPAN	-200to-100C: +/-0.15% of reading+0.7C
THERMOCOUPLE	T2	-200.0 to 200.0C	+/-0.15%reading + 0.4C	0.1C	+/-0.3% SPAN	-200to-100C: +/-0.15% of reading+0.7C
THERMOCOUPLE	C	0.0 to 2320.0C	+/-0.15%reading + 1C	0.1C	+/-0.3% SPAN	
THERMOCOUPLE	Au-Fe	1.0 to 300.0K	+/-0.15%reading + 1K	0.1K	+/-0.3% SPAN	1 to 20K +/-2.4C
THERMOCOUPLE	N	0.0 to 1300.0C	+/-0.15%reading + 0.7C	0.1C	+/-0.3% SPAN	
THERMOCOUPLE	PR40-20	0.0 to 1880.0C	+/-0.15%reading + 1C	0.1C	+/-0.3% SPAN	0-300C: +/-37.6C, 300-800C : +/-18.8C
THERMOCOUPLE	PLII	0.0 to 1390.0C	+/-0.15%reading + 0.7C	0.1C	+/-0.3% SPAN	
THERMOCOUPLE	U	-200.0 to 400.0C	+/-0.15%reading + 0.5C	0.1C	+/-0.3% SPAN	-200to-100C: +/-0.15% of reading+0.7C
THERMOCOUPLE	L	-200.0 to 900.0C	+/-0.15%reading + 0.5C	0.1C	+/-0.3% SPAN	-200to-100C: +/-0.15% of reading+0.7C
RTD SENSOR	Pt100-1	-200.0 to 650.0C	+/-0.15%reading + 0.3C	0.1C	+/-0.3% SPAN	
RTD SENSOR	Pt100-2	-200.0 to 200.0C	+/-0.15%reading + 0.2C	0.1C	+/-0.3% SPAN	
RTD SENSOR	JPt100-1	-200.0 to 630.0C	+/-0.15%reading + 0.3C	0.1C	+/-0.3% SPAN	
0.1C	JPt100-2	-200.0 to 200.0C	+/-0.15%reading + 0.2C	0.1C	+/-0.3% SPAN	

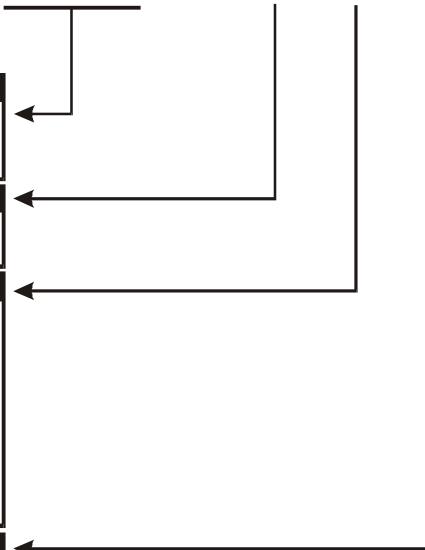
DIGITAL INPUT FUNCTIONS

FUNCTION	DESCRIPTION
START / STOP FEED	Saves paper when machine is shut down.
CHANGE SPEED	Can have faster chart speed for startup and troubleshooting.
COMMENT PRINT	Identifies print line with up to 16 characters per line (ie. top , bottom)
MANUAL PRINT	Dot prints process values.
DATE / TIME PRINT	Can identify when line starts / stops

MODEL CODE

RM10 **C**

MODEL
01 - 1 PEN RECORDER
02 - 2 PEN RECORDER
06 - 6 DOT RECORDER
COMMUNICATION
0 - RS-232C (STANDARD)
1 - RS-485 (OPTION)
DIGITAL INPUTS / OUTPUTS
1,2 PEN MODELS
0 - NONE
1 - 3 RELAY OUTPUT
2 - 3 DIGITAL INPUT
3 - 3 RELAY + 3 DIGITAL INPUT
6 DOT MODEL
0 - NONE
1 - 6 RELAY OUTPUT
2 - 3 DIGITAL INPUT
3 - 6 RELAY + 3 DIGITAL INPUT
OUT of PAPER SENSOR
0 - NONE
1 - YES



ACCESSORIES

PART#	DESCRIPTION
RM10C-250	250ohmRESISTOR (4-20mA)
RM10C-CASE	PORTABLE CASE
RM10C-PAPER12	PAPER (12pack)
RM10C-PEN1	PEN1-RED (6pack)
RM10C-PEN2	PEN2-GREEN (6pack)
RM10C-1/2-RIBBON	RIBBON (1/2 PEN RECORDERS)
RM10C-6-RIBBON	RIBBON (6 DOT RECORDER)