RM10C (pH) HYBRID RECORDER

OUTLINE

RM10C(pH) is 100mm calibrated hybrid recorder in a 144x144 DIN front panel and short depth of 174mm case housing.

FEATURES

- ■ AUTOMATIC BUFFER CALIBRATION
- ■ SHORT CASE DEPTH SIZE OF 174mm
- ■ IP65: Dust-PROOF, WATER-PROOF
- ■ WIDE LED WITH 18mm HEIGHTS DISPLAY
- ■ ALLOWS USER-SELECTED CONSUMABLES
- ■ RS-232C COMMUNICATION INTERFACE IN STANDARD SPECIFICATIONS
- ■ UL, C-UL, CE APPROVED
- ■ WEIGHTS ONLY 2.0kg
- ■ OPTIONAL PORTABLE HOUSING CASE AVAILABLE

SPECIFICATIONS

● Input signal

Sensor input   1
    Glass electrode (pH) or ORP electrode

Temperature compensation input
    $1k\Omega$, 350Ω, 500Ω, $6.8k\Omega$, $10k\Omega$, none
    ($25°C$ constant)

Range: sensor input
    Glass electrode: $\pm 0.5V$
        ($0 \sim 14pH$)
    ORP electrode $\pm 2000mV$

Scaling: sensor input
    Glass electrode $0 \sim 14pH$
        (4pH width min.)
    ORP electrode $\pm 2000mV$
        (400mV width min.)
    Temperature compensation input
        $-10 \sim 110°C$

Input sampling:
    Sensor input: 200ms
    Temperature compensation input: 1s

● Performance

Linearity: $\pm 0.03pH$ ($\pm 3mV$)
Repeatability: ± 0.02 pH ($\pm 1mV$)
Dead band: Within 0.2%
Allowable signal source resistance:
    $1000M\Omega$ max. in Glass electrode terminal
Common mode reduction ratio:
    100dB min. ($50/60 \pm 0.1Hz$)
Isolation resistance:
    0.5kV DC $20M\Omega$ min. between the each
    terminal and grounding terminal
Dielectric strength:
    1.5kV AC for 1 minute between power terminal
    and grounding terminal. 0.5kV AC for 1 minute
    between input terminal and grounding
    terminal.
Vibration resistance: $10 \sim 60Hz$ $1m/s^2$ max.
Shock resistance: $2m/s^2$ max.
Clock precision: $\pm 50ppm$ max.
Chart feed accuracy: $\pm 0.1\%$ max.

Ohkura

● Structure

Mounting: Panel -mount
         Allowable backward inclination: Within 30 °
Material: (Color)
    Case——Polycarbonate(Black),Glass 10% UL94-V2
    Door frame——Polycarbonate,UL94-V2(Clear)
                Dust-Proof,Water-Proof
                (complies with the IEC529-IP65)

● Power Supply Voltage

Power voltage (rated): 100 ~ 240V AC
Power voltage: 85 ~ 264V AC
Frequency (rated): 50/60Hz
Frequency: 45 ~ 65Hz
Power consumption: 20VA max. (at 100VAC)
                         30VAC max. (at 240 VAC)

● Normal Operating Conditions

Ambient temperature: 0 ~ 50°C
Ambient humidity: 20 ~ 80%RH
Supply voltage: 85 ~ 264V AC
Frequency: 45 ~ 65Hz

● Alarm (Relay output is optional)

Outputs: 2 point
Alarm types: 2 types (H, L)
Contact point capacity:
    2point (a contact) (option)
    30V AC, 3A max. loaded;

● Safety Standard and EMI Standard

Electrical safety:
    IEC1010-1,UL3101-1 installation category II and pollution
    degree 2.
    UL3101-1
Emissions: EN55011 Group1 Class A
Immunity: EN50082-2

● DI function

Function	Description
Chart Feed Start/Stop	Close: Starts Open: Stops
Change Chart Speed	Close: Chart speed 2 Open: Chart speed 1
Comment Print	Prints programmed characters (up to 12 characters per line)
Manual Print	Close: Start to print
Date and Time Print	Close: Start to print

Up to 3 functions among above can be selected in one recorder.

● Output(Option)

Resolution : 12bit
Output   : 4~20mA DC
Load resistance : 600Ωmax

● Communication interface: RS-232C

Baud rate	:1200, 2400, 4800, 9600 (bps)
Type of code	: 7-bit, 8-bit
Error detection	: Vertical parity check and byte addition BCC, time monitor
Start bit	: 1-bit, fixed
Stop bit	: 1-bit or 2-bit
Transmitted data	: Channel data, Clock data

INDIVIDUAL SPECIFICATIONS

Block	Item	DESCRIPTION
Input Unit	Measuring Point	1
	Input Sampling	200ms
	Display Interval	200ms
Record & Printer	Recording Form	Disposable felt pen
	Printing Form	Wire dot (one color ink ribbon)
	Recording Width	100mm
	Step Response	1.0s max. to 95% of step-wise input (IEC 1143)
	Chart Paper	Length : 16m, Width : 114 mm Folding width : 40 mm (Note1)
	Chart Speed	5, 10, 15, 20, 25, 30, 40, 50, 60, 75, 80, 90, 100,120, 150, 160, 180, 200, 240, 300, 360, 375, 450, 600, 720, 750, 900, 1200, 1500, 1800, 2400, 3000, 3600, 4500, 4800, 5400, 6000, 7200, 9000, 10800, 12000 mm/h
	Recording Color	1 pen (Red)
	Printing Color	Purple
Weight		1 pen: 2.0kg max.
Power Consumption		30VA max. (at 100VAC)

Note 1 : Clean Chart Paper: Length 12 m

CONFIGURABLE FUNCTIONS

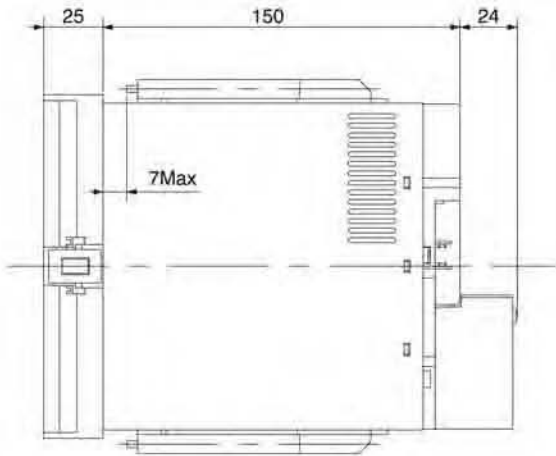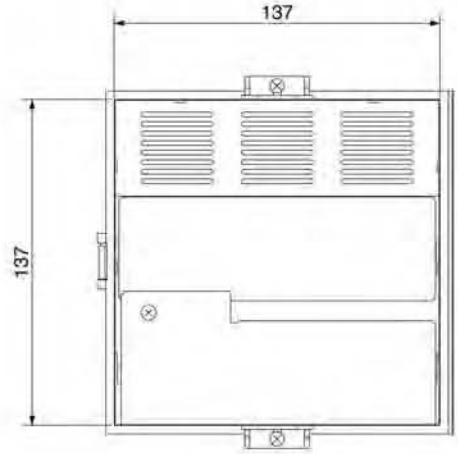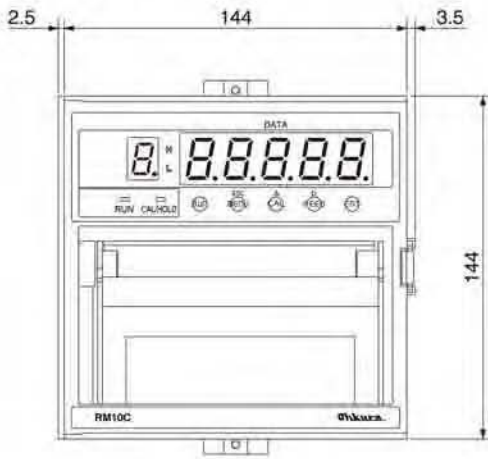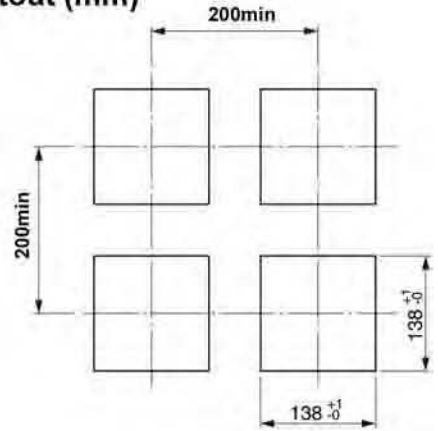| FUNCTION	DESCRIPTION
Tag Number	Tag number up to 5 characters can be programmed, and prints at logging print.
Input offset	Input offset per channel can be programmed.
Alarm print	Prints time, setting number and type of alarm in alarming.
Alarm recovery print	Prints recovery time, setting number and type of alarm at recovery.
Alarm Hysteresis Width	Alarm hysteresis width can be programmed.

STANDARD FUNCTIONS

ITEM	DESCRIPTION
Analog recording	Continuous pen tracing.
Digital display	Indicates process variable, date, chart speed, alarm set point in front display.
Logging print	Prints date, time, chart speed, process variable and unit at a programmed interval.
List print	Prints chart speed, type of sensor input, range, type of temperature compensation input, alarm set point, alarm differential point, alarm delay point, comment print status, Printing description.
Engineering list print	Prints type of sensor input, type of temperature compensation input, alarm print, logging print on/off, reference time, interval, Sync/Async, buffer calibration mode, error output, DI function, communication setting.
Manual print	Prints measured data by the front key operation. Analog recording stops during manual printing.
Programming	Programs chart speed, alarm set point, logging print interval, date and time.
Memory Backup	Back-up for clock by built-in lithium battery for 10 years, 5 years in unpowered state. A non-volatile memory stores configuration and calibration data.
Alarm	Sets 2 types (H, L) of alarms. Sets a total of 2 levels.
Chart Speed	Selects Chart speed from 41 types.
Clock Indication	Indicates Year, Month, Day, Hour and Minute. Sets the year in A.D, and adjusts leap year automatically.
Self Diagnostics	Occurring some type of the defect to indicate "ERROR".
Scaling	Output scaling is corresponding to the record scaling.

DIMENSIONS (Unit = mm)

Front view: 2.5 | 144 | 3.5, height 144, label DATA, RUN, CAL/HOLD, RM10C, Ohkura

Side view: 137, 137

Bottom view: 25 | 150 | 24, 7Max

Panel Cutout (mm)

200min, 200min, 138 +1 -0, 138 +1 -0

TERMINAL ARRANGEMENT

L N

34 35 36 37 38 39 40   42

ALM1 ALM2 ER.ALM

20 21 22 23 24 25 COM 26 D 27 28

1   5 6 7 8 9 10 11 12 13 14

G R E T1 T2   +   -   TD RD SG

4~20mA   RS-232C
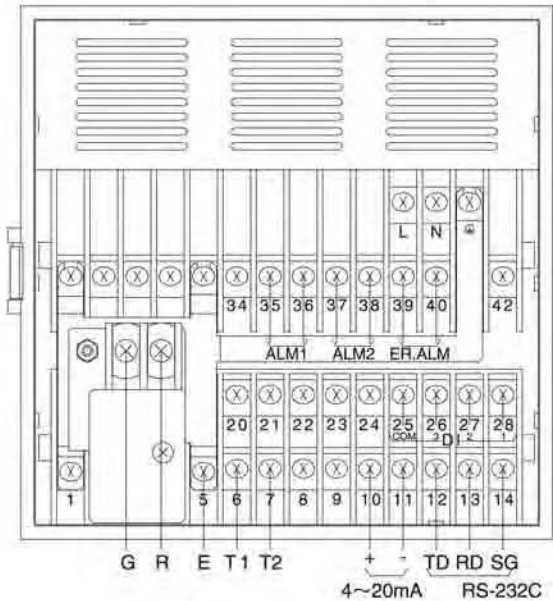
MODEL CODE NUMBER

1	2	3	4	5	6	7	8	9	10	11
R	M	1	0	0	1	C	0			P

① ② ③ ④

① Communication

0	RS-232C (Standard)

④ Specification

P	pH meter

③ Current output (Option)

0	None
1	Provided

② DI/DO (Option)

0	None
1	Relay output
2	3 DI
3	3 DI + relay output

ACCESSORIES

DESCRIPTION	MODEL	NUMBERS	NOTE
Chart paper	HZCGA0145EL001	1	0 ~ 14 pH
Ribbon cartridge	WPSR188A000002A	1	for pen model
Cartridge pen	WPSR196A000001A	1	for 1 pen type
Mounting bracket	H4A14175	1	Panel mounting unit
Instruction manual	HXPRM10mnC0007	1	
Packing	H4A14900	1	for IP65

⚠CAUTION

Do not install this device before consulting instruction manual

Specifications are subject to change without notice.

For further information, a quotation or a demonstration please contact to: