

# HR-700 Series



A smaller, lighter recorder with RS-232C provided as standard.



#### Compact: 150mm in depth, 1.5kg in weight

Available for small panel mounting

#### Communication interface

Corresponds to FA( factory automation ) system via communication interface, RS-232C( standard ) or RS-485( option )

#### Larger LED display

LED size: 18mm in height

#### Dust-proof (IEC529 IP65)

Stands up to even harsh environments such as food related plants and kilns

#### Safety standard

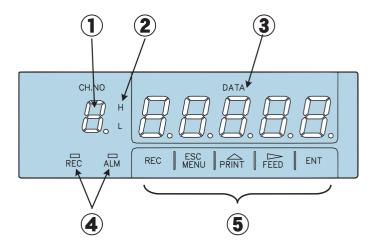
UL/C-UL and CE marking

#### Model

| HR-70 ,        |       |                 | HR-700 (W144×H144×D150mm)   |  |  |
|----------------|-------|-----------------|---|--|--|
| Input<br>point | 1     |                 | 1-point (Pen writing type only)   |  |  |
|                | 2     |                 | 2-point (Pen writing type only) Multi-range system (Input types are selectable. |  |  |
|                | 6     |                 | 6-point ( Dot printing type only )  |  |  |
|                |       | C5              | Communication function (RS-485)   |  |  |
|                |       | RE1             | DI function ( Pen writing type )  |  |  |
| Ontion         | RE6   |                 | DI function ( Dot printing type )   |  |  |
| Option         |       | FL              | Paper-empty detection function  |  |  |
|                |       | LH3             | Alarm output function ( Pen writing type )                                      |  |  |
|                |       | LH6             | Alarm output function ( Dot printing type )                                     |  |  |
|                | Input | Input point 2 6 | 1   |  |  |

• When ordering, select the alphanumeric characters from the table above for  $\Box$ . When adding options, enter the code using a "comma".

#### Display and operation keys



①: Channel number display
Orange LED indicates Channel number 1 to 6.

#### 2: Alarm indicator

Red LED indicates the type of the alarm.
[H]is lit when the alarm is High, and [L]is lit when the alarm is Low. Neither of them is lit when there is no alarm.

#### 3: Data display

Indicates the process variable, time, setting value and setting item by orange indicator.

#### 4: Status indicators

The [ REC ]( orange ) is lit when recording. The [ ALM ]( red ) is lit when the alarm is being activated.

#### 5: Operation keys

Use these keys for setting and other operations.

#### Rated scale and accuracy

|              | D  | Measuring (Digital display)  |            | Recording (analog)                               |
|--------------|--|--|------------|--|
| Input        | Range  | Measuring accuracy   | Resolution | Recording accuracy                               |
| Thermocouple | K1   | K1: $\pm$ (0.15% of rdg+0.7°C)<br>K2: $\pm$ (0.15% of rdg+0.4°C)<br>K3: $\pm$ (0.15% of rdg+0.3°C)<br>However, Range: -200 to100, $\pm$ (0.15% of rdg+1°C)                                       |            |  |
|              | E1 −200.0 to 800.0 °C  | ±(0.15% of rdg+0.5℃)   |            |  |
|              | E3 −200.0 to 150.0 °C  | ±(0.15% of rdg+0.3℃)   |            |  |
|              | J1   | J1,T1:±(0.15% of rdg+0.5℃)<br>J2,T2:±(0.15% of rdg+0.4℃)<br>J3 :±(0.15% of rdg+0.3℃)<br>However, Range: -200 to 100℃, ±(0.15% of rdg+0.7℃)   | 0.1℃       | Measuring accuracy:<br>士(0.3% of recording span) |
|              | R1 0.0 to 1760.0°C<br>R2 0.0 to 1200.0°C<br>S 0.0 to 1760.0°C<br>B 0.0 to 1820.0°C           | R1, S, B:±(0.15% of rdg+1°C) R2:±(0.15% of rdg+0.8°C) However, R1,R2,S: Range 0 to 100°C, ±3.7°C : Range 100 to 300°C,±1.5°C B: Range 400 to 600°C,±2°C (Accuracy is not guaranteed below 400°C) |            |  |
|              | N 0.0 to 1300.0℃   | $\pm$ (0.15% of rdg $\pm$ 0.7°C)   |            | - '  |
|              | E2 −200.0 to 300.0 °C  | $\pm$ (0.15% of rdg $\pm$ 0.4°C)   |            |  |
|              | C 0.0 to 2320.0℃   | ±(0.15% of rdg+1°C)  |            |  |
|              | PR40-20 0 to 1880℃   | $\pm$ (0.15% of rdg+1°C)<br>However, Range 0 to 300°C, $\pm$ 4.0°C<br>Range 300 to 800°C, $\pm$ 3.0°C  |            |  |
|              | Au-Fe 0 to 300 K   | ±(0.15% of rdg+1K)   | 0.1K       |  |
|              | PL-Ⅱ —100 to 1390 °C   | $\pm$ (0.15% of rdg $\pm$ 0.7°C)   |            |  |
|              | U —200.0 to 400.0°C<br>L —200.0 to 900.0°C<br>T1 —200.0 to 400.0 °C<br>T2 —200.0 to 200.0 °C | $\pm$ (0.15% of rdg+0.5°C ) However, Range $-200$ to 100°C: $\pm$ (0.15% of rdg+0.7°C )  | 0.1℃       |  |
|              | Pt100 1 —200.0 to 650.0°C  | ±(0.15% of rda+0.3℃)   | 0.1℃       | Measuring accuracy:<br>士(0.3% of recording span) |
|              | Pt100 2  | $\pm$ (0.15% of rdg+0.2°C)   |            |  |
| RTD          | JPt100 1 −200.0 to 630.0°C   | ±(0.15% of rdg+0.3℃)   |            |  |
|              | JPt100 2 −200.0 to 200.0°C   | ±(0.15% of rdg+0.2°C)  |            |  |
| DC voltage   | −10 to 10mV  | $\pm$ (0.2% of rdg+3 digits)   | 10 µ V     |  |
|              | 0 to 20mV  | ±(0.2% of rdg+3 digits)  |            |  |
|              | 0 to 50mV  | $\pm$ (0.2% of rdg+2 digits)   | 100 µ V    |  |
|              | -200 to 200mV  | $\pm$ (0.2% of rdg+3 digits)   |            |  |
|              | —1 to 1V   | $\pm$ (0.1% of rdg+3 digits)   | 1mV        |  |
|              | —10 to 10V   | $\pm$ (0.3% of rdg+3 digits)   | 10mV       |  |
|              | 0 to 5V  | $\pm$ (0.2% of rdg+2 digits)   | 1mV        |  |

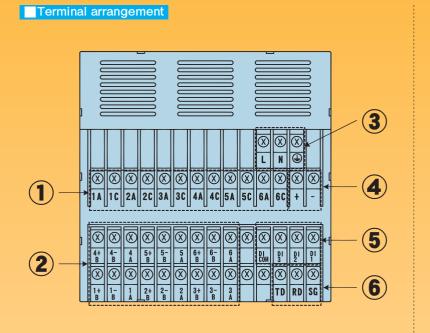
<sup>·</sup> In the case of DC current input, shunt resistor (sold separately) is needed.

#### Standard specifications

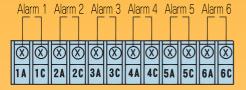
| otarradi a opoom      |  |  |  |
|-----------------------|--|--|--|
| Measuring point       | When ordering, one type can be selected from the following. 1-point(Pen writing type) HR-701, 2-point(Pen writing type) HR-702, 6-point(Dot printing type) HR-706  |  |  |
|                       | Multi-range (Types are selectable.)  • ThermocoupleK, J, R, S, B, E, T, C(W / Re5-26), N, PL-Ⅱ, PR40-20, Au-Fe, U, L  • RTD  |  |  |
|                       | <ul> <li>DC voltage±10mV DC, 0 to 20mV DC, 0 to 50mV DC, ±200mV DC, ±10V DC, ±10V DC, 0 to 5V DC</li> <li>DC current4 to 20mA DC (Needs external 250Ω of shunt resistor which is sold separately.)</li> <li>Scale</li></ul>  |  |  |
| Input                 | Input resistance   |  |  |
| Display               | System Digital indication, 7-segment orange, LED 6 digits (Channel number indicator: 1 digit, Measured value indicator: 5 digits) Contents Channel No., Process variable, Date and year, Chart feed speed, Alarm value Others REC: Lights while recording ALM: Red LED lights when alarm occurs in any channel.  |  |  |
| Performance           | Digital accuracy rating ±0.2%±1digit or less (Within the measuring range of mV and V input. TC and RTD are excluded. Recording accuracy  |  |  |
| Recording             | Chart paper  |  |  |
| Alarm                 | Alarm output is not available. (ALM is lit.) When alarm output is needed, specify alarm output function (Option) Setting points  |  |  |
| Communication         | RS-232C: 1200 / 2400 / 4800 / 9600bps  |  |  |
| Supply voltage        | 100 to 240V AC, 50/60Hz, Allowable voltage fluctuation 85 to 264V AC   |  |  |
| Power consumption     | 1-pen: Approx. 25VA, 2-pen: Approx. 28VA, 6-pen: Approx. 25VA  |  |  |
| Insulation resistance | Between each terminal and ground: $20M\Omega$ or more, at 500V DC  |  |  |
| Dielectric strength   | 1.5kV AC for 1min between power terminal and ground terminal 500V AC for 1min between input terminal and ground terminal 200V AC for 1min between input terminal and the other input terminal  |  |  |
| Ambient surroundings  | temperature: 0 to $50^{\circ}\mathrm{C}$ , humidity: 20 to 80% RH  |  |  |
| Material              | Case: Flame resistant resin ( Black ), Door: Flame resistant resin ( Transparent )   |  |  |
| Door                  | Dust-proof and Drip-proof (IEC529 IP65)  |  |  |
| Mounting              | Panel mounting (Vertical panel), Allowable inclination angle: Backward 0 to 30° or less  |  |  |
| Weight                | HR-701: Approx. 2kg, HR-702: Approx. 2.5kg, HR-706: Approx. 1.5kg  |  |  |
| Added function        | Skipping, Servo-stop, Self-diagnosis, Zone recording, Partial compression/expansion recording, Decade recording and indication, Tag number setting, Copy function, Input offset setting, Computation, Computation between channels, Scaling, Burnout, Memory backup (Clock function is protected by the internal lithium battery. [Battery life: Approx. 10 years]) Setting/Corrected data is protected by non-volatile memory. ) Asynchronous print mode, Printer gap correction function |  |  |
| Accessories           | Chart paper: 1 volume, Ribbon cassette (Dot printing type:1, Pen writing type:1), Cartridge pen (1-pen type: 1, 2-pen type: 2), Packing: 1, Mounting bracket: 1 set, Instruction manual: 1 copy  |  |  |

### ■Optional specifications

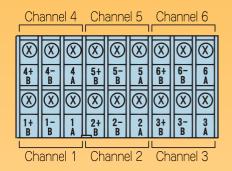
| Communication function [ C5 ]            | Communicating line: RS-485, Communication speed: 1200 / 2400 / 4800 / 9600   |  |  |  |
|--|--|--|--|--|
| DI function<br>[ RE1 ][ RE6 ]            | Settable up to 3 points ( Maximum )  Chart feed Start / Stop : Relay contact ON : Start, Relay OFF : Stop  Changing chart speed : Changes 1st with contact ON and 2nd with contact OFF  Comment print : Prints comments with contact ON ( Up to 16 characters a line )  Log print : Prints with contact ON  Date and time print : Prints date and time with contact ON |  |  |  |
| Empty paper tray detection function [FL] | Detects when the paper tray is empty, stops recording, and activates the alarm. (When adding this option, [LH3]or[LH6]needs to be added.)  |  |  |  |
| Alarm output function [ LH3 ][ LH6 ]     | Output number Pen writing type, 3 points (Built-in option, a contact) Dot printing type, 6 points (Built-in option, a contact) Contact capacity250V AC Maximum 3A (Resistive load) 30V DC Maximum 3A (Resistive load) 125V DC Maximum 0.5A (Resistive load)  |  |  |  |



#### ①: Alarm output terminal (Option)

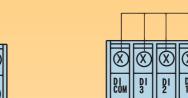


#### 2: Input terminal



#### ③: Power supply terminal

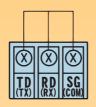


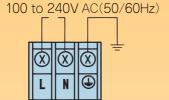


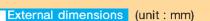
5: DI Function terminal

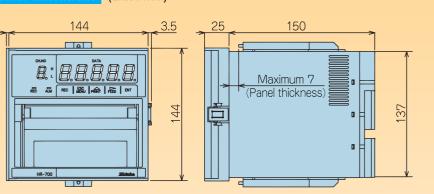
(Option)

## 6: RS-232C Communication terminal

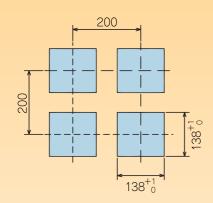




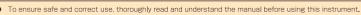


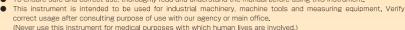


Allowable inclination angle : Backward 0 to  $30^{\circ}$  or less



Panel cutout (unit : mm)





- External protection devices such as protection equipment against excessive temperature rise, etc. must be installed, as malfunction of this product could result in serious damage to the system or injury to personnel. Also proper periodic maintenance is required.
- This instrument must be used under the conditions and environment described in the manual. Shinko Technos Co.,
   Ltd. does not accept liability for any injury, loss of life or damage occurring due to the instrument being used under conditions not otherwise stated in the manual.

#### $\cdot$ This catalog is as of December 2005, and specifications are subject to change without notice.

#### · When inquiring, please consult our agency or the shop where you purchased the unit.

#### Caution with respect to Export Trade Control Ordinance

To avoid this instrument from being used as a component in, or as being utilized in the manufacture of weapons of mass destruction (i.e. military apolications, military equipment, etc.), please investigate the end users and the final use of this instrument. In the case of resale, ensure that this instrument is not illegally exported.

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SAFETY

**PRECAUTIONS** 

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