Temperature Controller for Piping
LH100

PERFORMANCE SPECIFICATION
CHINO

The LH100 series is a downsized temperature controller for piping with built-in SSR, which enable to shorten installation time with push-in wire connectors. Standard provision of RS485 communications, Digital Inputs and Event Outputs enable to realize cost-effective temperature control.

LH100
(without setting display)

LH110
(with setting display)

■FEATURES

- **Downsized controller with built-in SSR (Max 7A)**
  By connecting with heater, enable to control temperature in a space-saving and less wiring.

- **Standard provision of digital communications and event functions**
  The LH100 series is having RS485 communications, digital inputs and event outputs as standard provision, which realize centralized control and monitoring with graphic panels.

- **Detachable push-in wire connectors**
  After making the wiring in advance, it supports one-time connection for enabling you to reduce wiring time at the site.

- **Designing for safety**
  The fuse* and relay are built in the controller, and the high current when the load is short-circuited and the load power supply when the equipment is abnormal are cut off.
  *Unable to replace the fuse outside factory.

- **Various mounting**
  Can be mounted to vertical pipes and horizontal pipes from various directions. In addition, since the controller can be directly mounted to the DIN rail, it can also be used for control other than piping temperature.

- **Easy-to-use setting display (LH110)**
  You can setup and check parameters directly with the controller. The setting display can be installed in either vertical or horizontal orientation, and is designed to be easy to see and operate.

- **Indicates operation status with front LED (LH100)**
  The front LED of the controller notifies you of the startup status, communications, event outputs, etc. Parameter setup / confirmation is possible from communications or dedicated software package.

- **Dedicated software package (can be downloaded at our web site)**
  One-time parameter setup can be made with software package by connecting the controller and the PC with USB engineering cable (sold separately). USB bus powered.

- **International safety standards**
  Conform to CE, UKCA and cUL

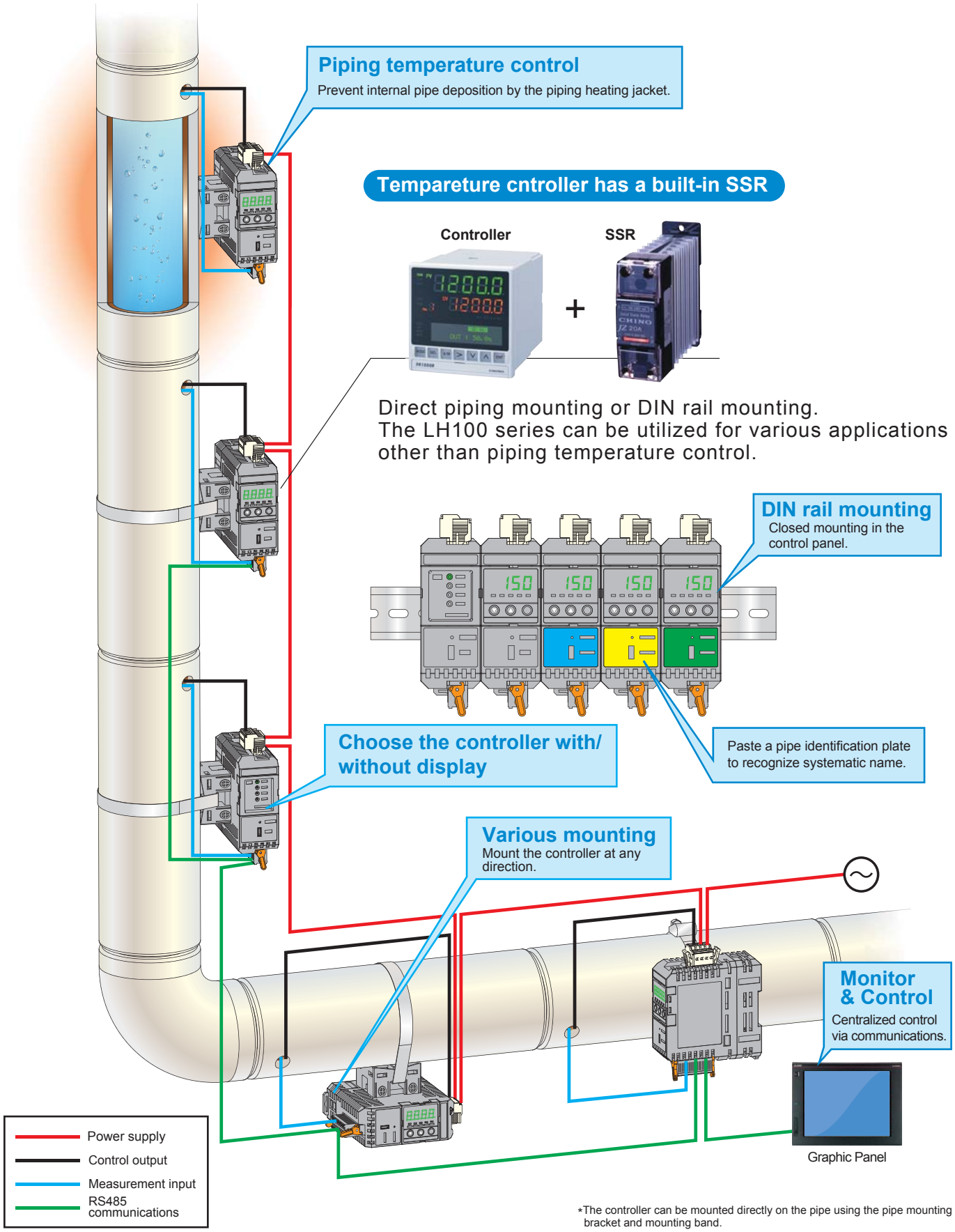
■MODELS

LH1□□NN

- Setting display unit
  - 0：None
  - 1：Included
- Additional functions
  - 0：None
  - 1：Moisture-proofing*1

*1 Not applicable with CE/UKCA marking and UL certification

The LH100 series has an easy-to-use function for controlling the temperature for piping.



*The controller can be mounted directly on the pipe using the pipe mounting bracket and mounting band.

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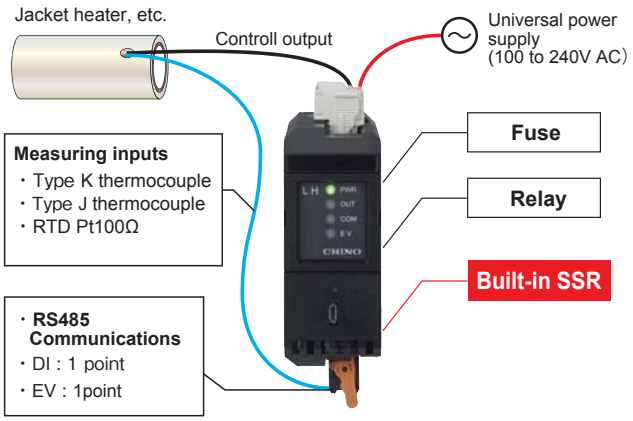
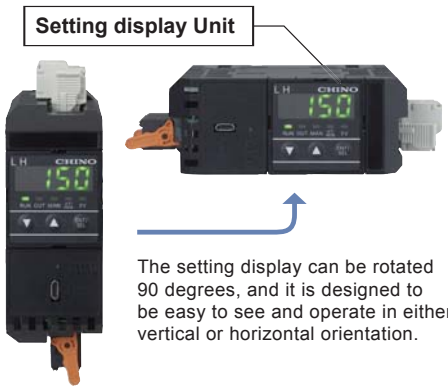
Digital Inputs and Event Outputs enable to realize cost-effective temperature control.

LH100 (without setting display)



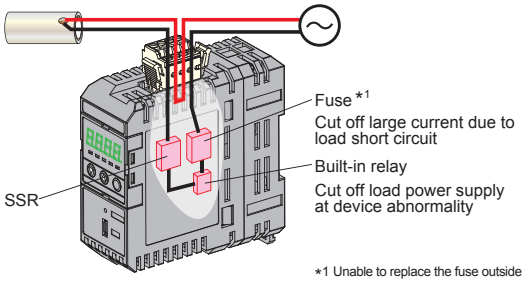
LH110 (with setting display)



The setting display can be rotated 90 degrees, and it is designed to be easy to see and operate in either vertical or horizontal orientation.

Protective circuit

This product has built-in fuse and built-in relay as a protective circuit.

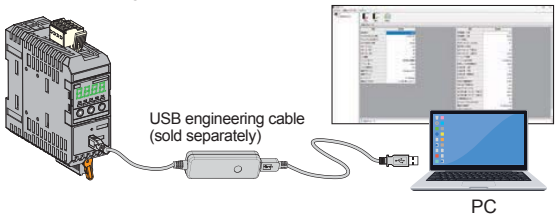


*1 Unable to replace the fuse outside factory.

Parameter setting

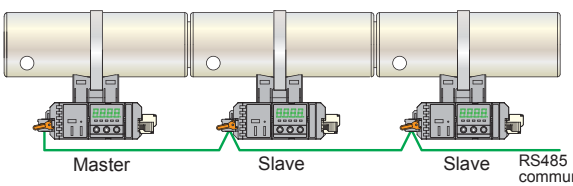
Dedicated software package (Free download at our website)

Connect the controller and PC with a USB engineering cable (RZ-EC6) and use this software package to set parameters at a time, and display the operating status.



Multiple unit setup (Master/Slave)

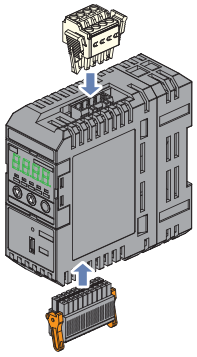
You can transmit SV and Run/Ready parameters in the master unit to slave units by RS485 and set multiple units at once without using a PC.



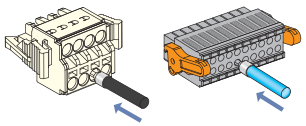
*Unable to use host communications.

Installation

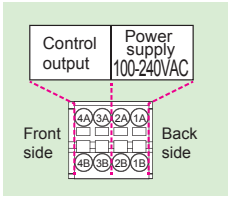
Reduces on-site wiring man-hours and working time



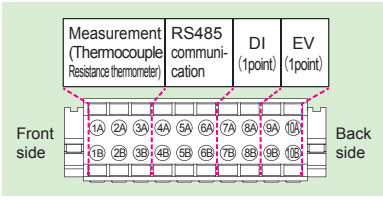
Easy wiring with detachable connector, then support instantaneous mounting.
Easy-to-use connector (Push-in type)
+ Wiring is completed just by inserting the wires
+ With a lock system to prevent a connector off



Connector of power supply*2 and heater



Connector of sensor, communications,*3 DI and EV



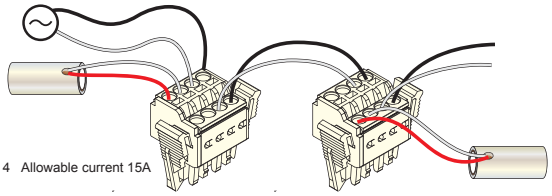
*2 Each A and a B terminal are connected inside the connector.
*3 Each A and a B terminal are connected inside the unit.

Wiring processing (the ferrule terminal pressure arrive)

Connector of power supply and heater	Connector of sensor, communication,DI and EV
0.25 to 2.5mm²	0.14 to 1.0mm²

Crossover wiring

Save wiring for power supply line *4 and communications line.



*4 Allowable current 15A

SPECIFICATIONS

Input specifications

Number of inputs: 1 point
Input signal: Thermocouple K, J... 0 to 800℃
Resistance thermometer Pt... 0 to 800℃
Accuracy: The performance by which ±0.2% FS 1digit of the measuring range
＊Precision in the reference operating condition
The reference mark compensation precision: ±2℃
Input sampling: Approx. 0.1 seconds

Control specifications

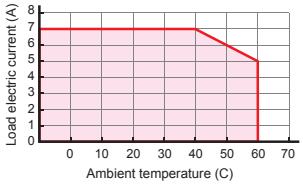
Number of output: 1 point
Output: Triode AC switch output (zero crossing)
Load current: At most 7 A (There is an ambient temperature de rating.)
Control cycle: 0.1 seconds
Pulse cycle: 0.5 to 180 seconds
Protection circuit: Rated 12.5A fuse (not replaceable)
Security function: Relay for load power supply insulations

General specifications

Rated voltage: 100 to 240V AC
Rated power supply frequency: 50/60Hz
Power supply passage wiring permissible current: 15A
Power consumption: Undertaken, at the time of non-connection
Setting indicator pear
At most 4 VA (100V)/at most 6 VA (240V)
There is a setting indicator
At most 5 VA (100V)/at most 7 VA (240V)
Load connection the time
(ambient temperature: Less than 40℃)
Setting indicator pear At most 704 VA (100V)/at most 1686 VA (240V)
There is a setting indicator At most 705 VA (100V)/at most 1687 VA (240V).
Outer material: Incombustible polycarbonate (UL94V-0)
Weight: Approx 220 g (without indicator)
Approx 230 g (with indicator)

Ambient temperature

Ambient temperature: -10 to 60℃
Ambient humidity: 20 to 90%rh (without dew condensation)



Digital input

Number of input: 1 point
Input signal: No-voltage point of arrangement or open collector
Function: AUTO/MANUAL, RUN/READY and built-in relay ON/OFF

Event output

Number of output: 1 point
Output capacity: 24VDC 50mA
Function: Absolute value warning, deviation warning, absolute value deviation warning, control loop abnormal warning and FAIL warning

Communication interface (Dominance communication)

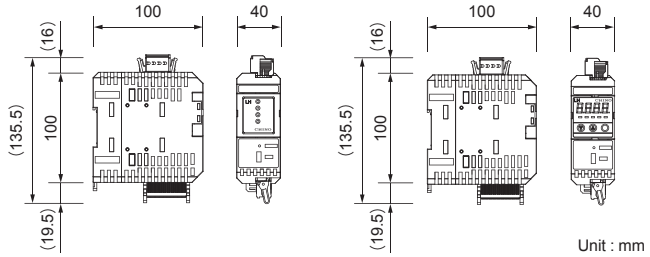
Communications: RS485
Bit rate: 9600 (defaults)/19200/38400 bps
Communications protocol: Modbus RTU (defaults)/ASCII
Communications character: 8N1 (defaults), /8E1/8O1/8N2/8E2/8O2/7E1/7O1/7E2/7O2
Transmission distance: Less than 500 m

Safety and the EMC standard

EMC order: EN61326-1 fitness (CE and UKCA) ClassA.
Safe: EN61010-1 fitness (CE and UKCA) and EN61010-2-030 fitness (CE and UKCA)
UL61010-1 authentication (UL) and UL61010-2-030 authentication (UL)
CAN/CSA C22.2 No.61010-1 authentication (cUL)
CSA C22.2 No.61010-2-030 authentication (cUL)
Overvoltage category: II and pollution degree: 2.

EXTERNAL DIMENSION

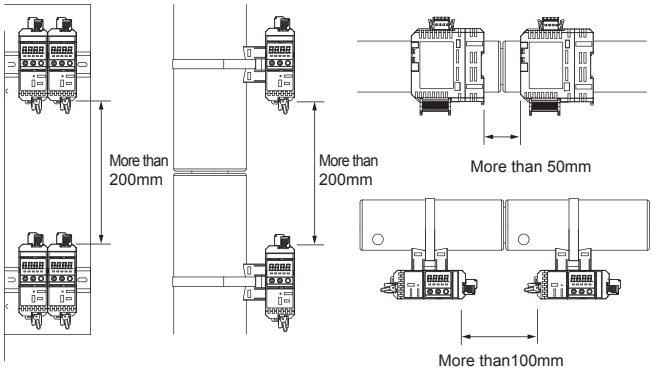
LH100 LH110



Unit : mm

Installation

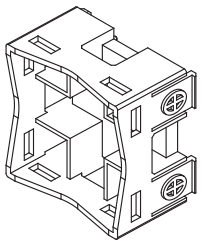
DIN rail installation Vertical pipe installation Horizontal pipe installation



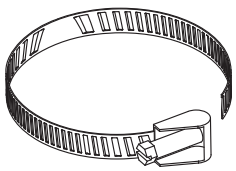
Accessories

Name	Models	Function
Pipe mounting bracket	CX-LH1	For mounting the unit with pipe
Pipe clamp ring	CX-LH2	For clamping the unit with pipe
USB engineering cable	RZ-EC6	For connecting the unit with PC

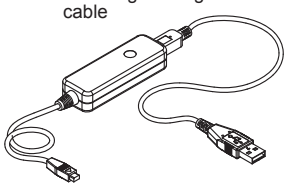
Pipe mounting bracket



Pipe clamp ring



USB engineering cable



Specifications subject to change without notice. Printed in Japan (I) 2022. 8

CHINO CORPORATION
32-8 KUMANO-CHO,ITABASHI-KU,TOKYO 173-8632
Telephone : +81-3-3956-2171
Facsimile : +81-3-3956-0915
E-mail : inter@chino.co.jp
Website : https://www.chino.co.jp/