ZL-7918A Humidity and Temperature Controller

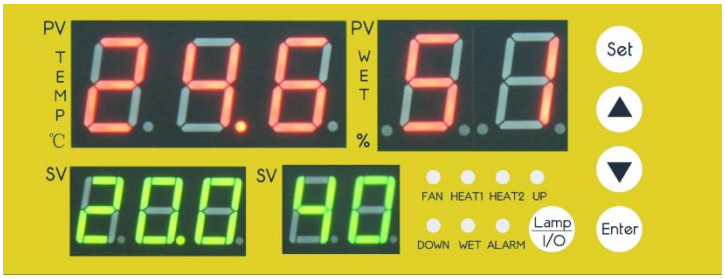
For Incubator A6.0

Feature

ZL-7918A is an intelligent temperature and humidity controller, safe and stable, convenient to operate, applicable for control of incubator, climate chamber, warehouse, and so on.

Specification

◇ Power supply: 100 ~ 240Vac, 50/60Hz.
◇ One temperature sensor (L = 2.0 meter), one humidity sensor (L = 2.0 meter).
◇ Setting range: Humidity 0 ~ 99% RH. Temperature 1 ~ 75℃
◇ Display range: Humidity 0 ~ 99% RH. Temperature -9.9 ~ 99℃.
◇ Measuring accuracy: Humidity ±3%@25℃. Temperature ±1%@25℃.
◇ Output control: 7 outputs (main-heater, aux-heater, lamp, humidity, egg-right-turning, egg-left-turning, fan).
◇ Output load: heater ≤ 1500W. Lamp ≤ 100W. Humidity, egg-turning and fan ≤ 1A/250Vac
◇ Hatched day counter: the maximum value is 99 days.
◇ Egg turn control: Turn period: 1 ~ 999 minutes. Turn driving time: 0 ~ 999 seconds. Turn times counter: 0 ~ 999 times.
◇ Air exhaustion control: Period: 1 ~ 999 minutes. Exhausting time: 0 ~ 999 seconds.
◇ Lamp control: Period: 1 ~ 999 minutes. Illuminating time: 0 ~ 999 seconds.
◇ Operation environment: -10 ~ 45℃, less than 90% RH without dew.
◇ Device dimension: 160 * 80 * 95 mm.
◇ Installation drilling size: 151.5 * 76.5 mm.



Firmware Information

When power supplied, the display shows the model "7918A", and version "A6.0".

Setting and Query

Set *temperature and humidity setpoint*

When ***temperature setpoint*** **(P3)** or ***humidity setpoint*** **(P9)** has been set, the ***temperature and humidity control parameters(P-)*** will be generated ***automatically and accordingly***.
Keeping【*Set*】depressed for 2 seconds to enter into ***temperature and humidity setpoint setting status***.
Press【*Enter*】to switch between ***temperature setting status*** and ***humidity setting status***:
SV window displays "***" + "tt": ***temperature setting status***.
SV window displays "***" + "HH": ***humidity setting status***.
Press【▲】or【▼】to set the setpoint "***" (Keeping the key depressed can fast set).
Keeping【*Enter*】depressed for 2 seconds will exit setting status, the settings **will be saved**, and ***temperature and humidity control parameters(P-)*** will be generated ***automatically and accordingly***.
The setting status **will exit without saving** if there is no key operation for 15 seconds.
Temperature setpoint **(P3)**: factory default setting for is 38℃, set range is 1 ~ 75℃.
Humidity setpoint **(P9)**: factory default setting is 60%RH, set range is 0 ~ 99%RH.

Set *temperature and humidity control parameter* (P-)

Note: Setting these parameters will change the ***automatically generated*** values!
Press【*Set*】and【▲】simultaneously to enter into ***temperature and humidity control parameter (P-)*** setting status.
Press【*Enter*】to select parameter:
SV window displays the selection from "***" + "**P0**"
to "***" + "**PH**".
Press【▲】or【▼】to set the value of the parameter (Keeping the key depressed can fast set).
Keeping【*Enter*】depressed for 2 seconds will exit setting status, the settings **will be saved**.
The setting status **will exit without saving** if there is no key operation for 15 seconds.

***Temperature and humidity control parameter* (P-)** code table:

Code	Function	Range	Note	Factory Default
P0	High temperature warning point	0 ~ 75℃		38.7
P1	Exhaustion temperature up limit	0 ~ 75℃	Start exhausting for cooling	38.2
P2	Exhaustion temperature low limit	0 ~ 75℃	Stop cooling exhausting	38.0
P3	Main temperature up limit	0 ~ 75℃	Main heater stops heating	38.0
P4	Main temperature low limit	0 ~ 75℃	Main heater starts heating	37.9
P5	Aux temperature up limit	0 ~ 75℃	Aux heater stops heating	37.7
P6	Aux temperature low limit	0 ~ 75℃	Aux heater starts heating	37.5
P7	Low temperature warning point	0 ~ 75℃		37.2
P8	High humidity warning point	0 ~ 99%		70
P9	Humidity up limit	0 ~ 99%	Humidify load stops humidifying	60
Pb	Humidity low limit	0 ~ 99%	Humidify load starts humidifying	58
Pc	Exhaustion humidity up limit	0 ~ 99%	Start ventilation for de-humidifying	65
Pd	Exhaustion humidity low limit	0 ~ 99%	Stop de-humidifying ventilation	60
PE	Over wet exhaustion protection	0/1	0: disable; 1: enable	0
PP	Low humidity warning point	0 ~ 99%		50
PH	Sensor selection	0/1	0: ZL-SHr03A; 1: ZL-SHr05A or ZL-SHr05B	1

Set *function control parameter (F-)*

Press【*Set*】and【▼】simultaneously to enter into ***function control parameter (F-)*** setting status.
Press【*Enter*】to select parameter.
SV window displays the selection from "***" + "**F1**"
to "***" + "**Fb**".
Press【▲】or【▼】to set the value of the parameter (Keeping the key depressed can fast set).
Keeping【*Enter*】depressed for 2 seconds will exit setting status, the settings **will be saved**.
The setting status **will exit without saving**, if there is no key operation for 15 seconds.

***Function control parameter* (F-)** code table:

Code	Function	Range	Note	Factory Default
F1	Egg turn period	1 ~ 999 min		90
F2	Egg turn time	0 ~ 999 sec	0: no egg turning function	180
F3	Egg turn times	0 ~ 999 times	0: turn for ever	0
F4	Air exhausting period	1 ~ 999 min		120
F5	Air exhausting time	0 ~ 999 sec	0: no air exhausting	30
F6	Temperature calibration	-9.9 ~ 9.9℃		0.0
F7	Humidity calibration	-20 ~ 20%		0
F8	Illumination period	0 ~ 999 min	0: shut off timer illumination	0
F9	Illumination time	0 ~ 999 sec		120
FF	***Incubated days***	0 ~ 99 day	Can reset only	0
Ft	Egg turn period time saving	0/1	0: not saving. 1: saving	0
FM	***Egg turned counter***	0 ~ 999 times	Can reset only	0
FE	Egg turned counter reset	0/1	0: reset to 0 if turned offline or power supplied 1: keeps after turned offline or power supplied	0
Fb	Buzzing when alarming	0/1	0: No buzzing when alarming 1: buzzing when alarming	1

FM displays as Fn

Check *Incubated Days* and *Egg Turned Counter*

Press【*Enter*】and【▲】simultaneously, SV window displays ***incubated days*** (FF): "days" + "**t1**" for 2 seconds.
Press【*Enter*】and【▼】simultaneously, SV window displays ***egg turned counter*** (FM): "times" + "**t2**" for 2 seconds.

Control and Operation

On/off operation

Keep【*Lamp - I/O*】depressed for 2 seconds, controller switches between online and offline.

Illumination operation

Manual control (effective in both online and offline status)

Press【*Lamp - I/O*】, lamp turns on for **Illumination time (F9)**.

Press【*Lamp - I/O*】, lamp turns off, when lamp is on.

Timer control (effective in online status)

Lamp turns off for every **Illumination period (F8)**, then turns on for **Illumination time (F9)**.

Temperature control

Main heater: When room temperature ≤ **Main temperature low limit (P4)**, the main heater will be on.
When room temperature ≥ **Main temperature up limit (P3)**, the main heater will be off.

Aux. heater: When room temperature ≤ **Aux temperature low limit (P6)**, the aux. heater will be on.
When room temperature ≥ **Aux temperature up limit (P5)**, the aux. heater will be off.

Exhaustion fan: When room temperature ≥ **Exhaustion temperature up limit (P1)**, the fan will be on.
When room temperature ≤ **Exhaustion temperature low limit (P2)**, the fan will be off.

Humidity control

Humidifier: When room humidity ≤ **Humidity low limit (Pb)**, humidity output will be on.
When room humidity ≥ **Humidity up limit (P9)**, humidity output will be off.

Exhaustion fan:

If **Over wet exhaustion protection (PE)** = 1:

When room humidity ≥ **Exhaustion humidity up limit (Pc),** the exhaustion fan will be on.

When room humidity ≤ **Exhaustion humidity low limit (Pd)**, the exhaustion fan will be off.

If **Over wet exhaustion protection (PE)** = 0:

no protecting exhaustion when over wet.

Egg Turn control

Timer egg turning:

For every **Egg turn period (F1)**, egg turn output will be on for **Egg turn time (F2)**.

Egg turn left output and right output will be on alternatively.

1 left turn + 1 right turn = 1 egg-turn. Every egg-turn, ***egg turned counter* (FM)** increases 1.

When ***Egg turned counter* (FM)** reaches ***Egg turn times* (F3)**, stop egg turn, and "*UP*" and "*DOWN*" will be blinking.

Manual egg turning:

Manual egg turning could be operated both in online and offline status.

Keeping【▲】depressed can force left turning. Keeping【▼】depressed can force right turning.

Egg turning status saving:

After power supplied, or every time turned online, the direction of egg turning will be changed.

If power supply loses during egg turning, it will continue after power supply comes back.

Fast check ***Egg turned counter* (FM):**

See paragraph at page 2: Check ***Incubated Days*** and ***Egg Turned Counter***

Reset the value of ***Egg turned counter* (FM)** to zero**:**

If ***Egg turned counter* reset (FE)** = 0**, *Egg turned counter* (FM)** will be reset to after power supplied or tuned offline.

If ***Egg turned counter* reset (FE)** = 1**, *Egg turned counter* (FM)** will keep, after power supplied or tuned offline.
You could set it to zero manually.

Egg tray period status memorized:

If **Egg turn period time saving (Ft)** = 0, the period status of egg tray is not saved.

If **Egg turn period time saving (Ft)** = 1, the period status of egg tray will be saved every 3 minutes.
When power supply comes back, the period timing will continue, with max time error no more than 3 minutes.

Exhaustion Timer control

For **every Air exhausting period (F4)**, the exhaustion fan will be on for **Air exhausting time (F5).**

Alarm control

When room temperature ≥ **High temperature warning point (P0)**, buzzing, and room temperature display blinks.

When room temperature ≤ **Low temperature warning point (P7)**, buzzing, and room temperature display blinks.

When room humidity ≥ **High humidity warning point (P8)**, buzzing, and room humidity display blinks.

When room humidity ≤ **Low humidity warning point (PP)**, buzzing, and room humidity display blinks.

During alarming buzzing, pressing【*Enter*】could stop/restore buzzing.

Temperature and humidity calibration

The sensors have tolerance. They can reach to absolute 0.1℃ and 1% RH accuracy by calibration.
Room temperature can be calibrated by setting **Temperature calibration (F6)**.
Room humidity can be calibrated by setting **Humidity calibration (F7)**.

Incubated days (FF)

***Incubated days* (FF)** records the incubated days.
Fast check ***Incubated days* (FF)**: see page 2: Check ***Incubated Days*** and ***Egg Turned Counter***
***Incubated days* (FF)** is saved in memory. It is not reset after power supply loses, and controller is turned on/offline.
To make use of it, ***Incubated days* (FF)** is necessary to reset manually by setting, before starting a new incubation.
When it reaches to 99, it will not increase any more, and will stay at 99.

Restore to factory setting

Keep【▲】and【▼】depressed simultaneously for 2 seconds, SV window displays "000" + "00". Press【*Lamp - I/O*】twice, buzzer beeps, the controller will restore to factory default settings.

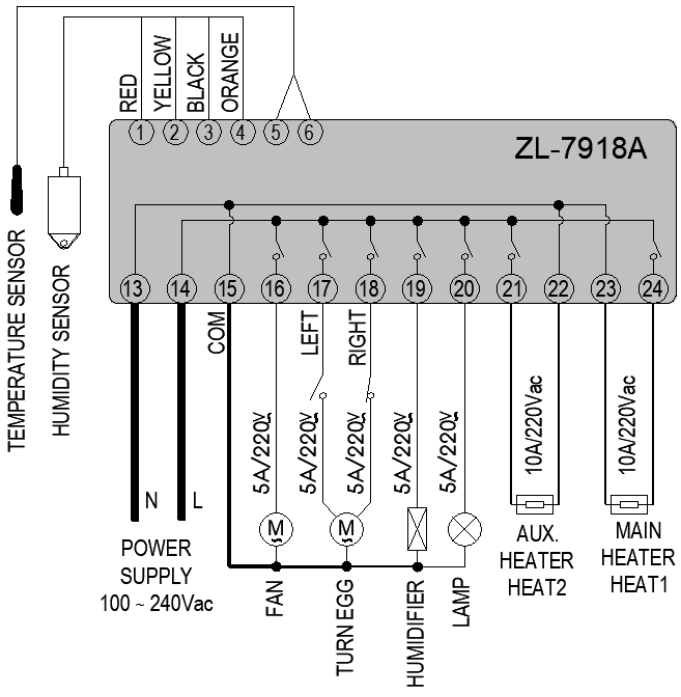
LED indication

LED	On	Blinking	Off
FAN	Fan on during **Air exhausting time (F5)**	Fan on because of temperature/humidity protection exhaustion.	Fan off
HEAT1	Main heater on		Main heater off
HEAT2	Aux. heater on		Aux. heater off
UP	Egg left turning now	**Egg turned counter (FM)** reaches **Egg turn times (F3)**	No left turning
DOWN	Egg right turning now	**Egg turned counter (FM)** reaches **Egg turn times (F3)**	No right turning
WET	Humidifying output on		Humidifying output off
ALARM		*Temperature or humidity* is over warning points, or sensor fails	

Warning code

Code	Indication	Code	Indication	Code	Indication
E1	Temperature sensor failure	E3	High temperature alarm	E5	High humidify alarm
E2	Humidity sensor failure	E4	Low temperature alarm	E6	Low humidify alarm

Wiring Diagram



Attention

The device is shipped with factory default setting. It suits for normal hatching requirements. It is even able to use directly without any setting for other parameters. About factory default setting, see the tables above.

If need to set new temperature and humidity, please operate according to paragraph "Set ***temperature and humidity setpoint***". The ***Temperature and humidity control parameters (P-)*** will be generated automatically and accordingly.
If you try to set the ***Temperature and humidity control parameters (P-)***, please set them based on understanding to avoid hatching failure.

Humidity sensor will not work correctly when covered with dust, water or dew. Please keep it clean and dry. Before clean sensor, be sure there is no static electricity in hands!

Manufacturer is responsible for the device itself, is not responsible to losses resulted by the failure of this device.