APPLICATION NOTES

ESM-3722

Digital ON/OFF and PID Hatcher Controller

ESM-3722 series Hatcher controllers are designed for controlling hatcher process.Device can be used easily with PID or On-Off control form and
manual start of egg tray rotator

Features

-4 Digit for Temperature Display
-4 Digit for Humidity Display
-Temperature Input (NTC,PTC,PT-100,0/2..10mV
0/4..mA or ProNem Mini PMI-P)
-Humidity Input (0/2..10mV,0/4..mA or
ProNem Mini PMI-P)
-4 Output (Heating Control Output,Egg Rotator Tray Output,Humidity Control Output,Alarm Control Output
-Relay or SSR Output
-PID or ON/OFF Selectable Temperature Control
-Auto-Tune PID
-Set Value Boundaries
-Manuel Start From Front Panel for
rotator.

Tecnical Specifications

Input:

Pronem Mini PMI-P
Temperature +Humidity Sensor

Output:
Heating Control: Relay
(5A@250Vac "at resistive load")
or SSR Driver output
(Maximum 20mA@12Vdc)
Alarm Control:Relay
(3A@250Vac"at resistive load")
Humidity Control:Relay
(3A@250Vac"at resistive load")
Egg Tray Turning Engine Control:Relay
(3A@250Vac"at resistive load")

Supply Voltage

230Vac (+%15) 50/60Hz-1,5VA
115Vac (+%15) 50/60Hz-1,5VA
24Vac (+%15) 50/60Hz-1,5VA
10...30Vdc-1,5VA

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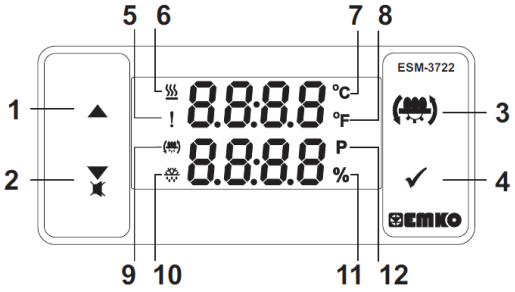
Button Definition



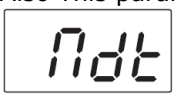
BUTTONDEFINITIONS:

1. **Increment Button :**In main operation screen, press this button to change display temperature and humidity sensor value.
It is used to increase the value in theTemperature and Humidity Set screens and Programming mode.

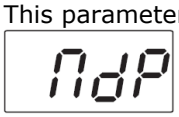
2. **Decrement, Silencing Buzzer Button :**
It is used to decrease the value in the Set screen and Programming mode.
It is used to silence the buzzer.

3. **Manual Start of Egg Tray Rotator Operation Button:**
In the main operation screen, if this button pressed engine starts.When the button is released the engine start will be passive and engine stops.

Additional İnformation;
Time of Automatic Egg Tray Rotator
Also This parameter value can be adjusted form 00:00 to 99:00 minute/second.



Repeat cycle of Automatic Egg Tray Rotator
This parameter value can be adjusted form 00:00 to 24:00 hour/minute.



4. **Set Button:**In the main operation screen; if this button pressed for the first time, Temperature set value will be
displayed. Value can be changed using increment and decrement buttons. When Set button is pressed again, value is saved and Humidty set value will be displayed next. Value can be changed using increment and decrement buttons. When Set button pressed again, value is saved and returns back to main operating screen.
To access the programming screen; in the main operation screen, press and hold this button for 5 seconds.
It is used to save value in the Set screens (Temperature or Humidity) and programming screen.

LED DEFINITIONS

5.Alarm led :
It is active when alarm statuses.

6. Heating Output Led :
This led indicates that heating output is active.

7.Celcius led :
Indicates that device is in Cmode.

8.Fahrenheit led :
Indicates that device is in F mode.

9.Egg Tray Rotator Output Led:
This led indicates that Egg Tray Rotator Output is active.

10.Humidificating Output Led:
This led indicates that humidity output is active.

11.Precent Sign ledi :
Indicates that device is in Humidity Set screen.

12.Program led :
Indicates that device is in programming mode .

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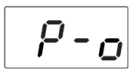
Parameters

Temperature Control Selection Parameter On/Off or PID



On- Off selected

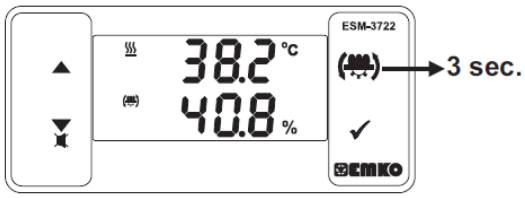
PID selected

Minimum Humidity Set Value Parameter

Humidity set value can not be lower than this value.
This parameter value can be adjusted from minimum value of device scale to maximum humidity set value parameter.

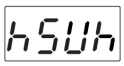
Manuel Start of Egg Tray Rotator Operation with Engine Button

While button protection parameter value is "**PRT "** 0,1,2 or 4 in main operation screen if engine button is pressed,manuel engine start will be active.
When the button is released the engine start will be passive and engine stops



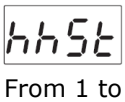
(One of the products that use our device)

Maximum Humidity Set Value Parameter

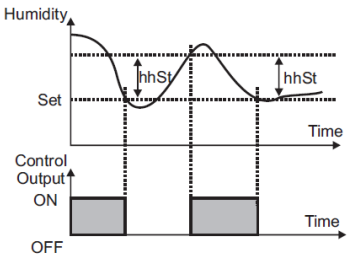


Humidity set value can not be greater than this value.This parameter value can be adjusted from minimum humidity set value parameter HsuL to maximum value of the device scale.

Hysteresis Parameter for Humidity



From 1 to 10 for Humidity Sensor (0%RH, 100%RH)
From 0.1to 10.0 for Humidity Sensor (0.0%RH,100.0%RH)
In ON/OFF control algorithm,
value is tried to keep equal to set value by opening or closing the last control element.
ON/OFF controlled system, temperature value oscillates continuously. Temperature value's oscillation period or amplitude around set value changes according to controlled system. For reducing oscillationperiod of temperature value, a thresholdzone is formed below or around set valueand this zone is named hysteresis.



If you want to discover more about the product please scan the QR code.