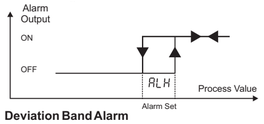
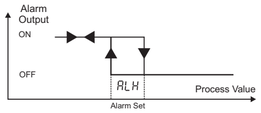
5.2 Alarm Output Graphics of ESM-3722HT

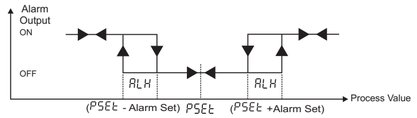
Process High Alarm



Process Low Alarm

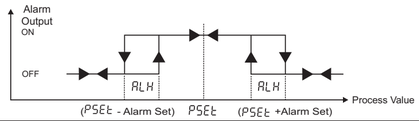


Deviation Band Alarm

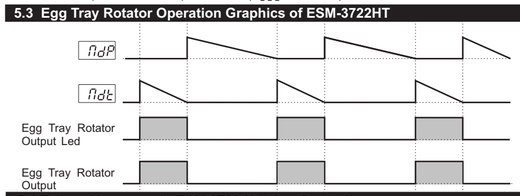


PSEt= Process Set Value (Temperature or Humidity)

Deviation Range Alarm



5.3 Egg Tray Rotator Operation Graphics of ESM-3722HT



5.4 Failure Messages in ESM 3722 Hatcher Controller

1- Sbr 1 Screen Blinking Temperature Sensor failure . Sensor connection is wrong or there is no sensor connection. While this message shown on this display,if buzzer function selection buF is 3, 5, 7 or 8 internal buzzer starts to operate.

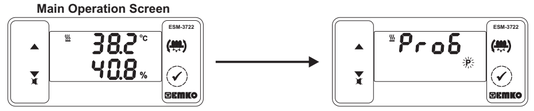
2- Sbr2 Screen Blinking Humidity Sensor failure . Sensor connection is wrong or there is no sensor connection. While this message shown on this display,if buzzer function selection buF is 4, 6,7 or 8 internal buzzer starts to operate.

3- In main operating screen if the upper display is blinking, it means that temperature alarm exits and alarm output is active .if buzzer function selection buF is 1, 5 or 8 internal buzzer starts to operate.

4- In main operating screen if the lower display is blinking, it means that humidity alarm exits and alarm output is active .if buzzer function selection buF is 2, 6 or 8 internal buzzer starts to operate.

5.5 Entering To The Programming Mode, Changing and Saving Parameter

Main Operation Screen



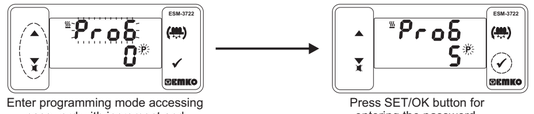
When SET button is pressed for 3 seconds, "P" led turn. If programming mode entering password is different from 0, programming mode entering screen PrG will be observed.

Note1: If programming mode accessing password is 0, Temperature Unit screen C-F is observed instead of programming screen PrG

Programming Mode Entering Screen

Press SET button for accessing to the password entering

Password Entering Screen



Enter programming mode accessing password with increment and decrement buttons.

Password Entering Screen

Press SET/OK button for entering the password.

Note2: If programming mode accessing password is 0, only three parameters are accessible, and the parameter values can be changed.

Programming Screen

Press SET button for accessing to the parameter value. Press increment button for accessing to the next parameter, press decrement button for accessing to the previous parameter.

Temperature Unit Selection Parameter Value

Change the value with increment and decrement buttons.

Temperature Unit Selection Parameter Value

Press set button for saving the parameter.

Decimal Separator Enabling Selection Screen

Press increment button for accessing to the next parameter, press decrement button for accessing to the previous parameter.

If no operation is performed in programming mode for 20 seconds, device turns to main operation screen automatically.

6. Manual Start of Egg Tray Rotator Operation with Engine Button

3 sec.

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

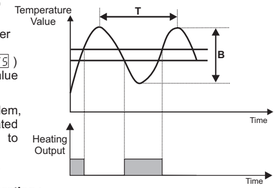
7. Auto Tune Metod

Auto Tune method is used for determining PID parameters used by the device.

Starting Auto Tune (Limit Cycle Tuning) Operation by the user :

- Adjust temperature control on/off or PID parameter (P-o =1)
- Adjust auto tune selection parameter (Atun= YES)
- In the main screen **"Atun"** and Temperature value are should alternately.

If Auto Tune operation is finished without any problem, the device saves the new PID coefficients, calculated using the previously found "T" and "B" values, to memory and continue to run.
Atun parameter is adjusted no automatically.



Cancelling Auto Tune (Limit Cycle Tuning) operation :

1 - If sensor breaks;
2 - If auto tune operation can not be completed in 8 hours ;
3 - If user adjusts Atun parameter no ;
4- During auto tune operation if the user changes the temperature control from pid to on/off;
5 - If process set value is changed while auto tune operation is being performed;
Auto tune is canceled. "Atun" is not displayed. Then, without doing any changes in PID parameters, device continues to run with previous PID parameters.

8. Specifications

Device Type	: Hatcher Controller
Housing&Mounting	: 76 mm x 34.5 mm x71 mm Plastic housing for panel Panel cut out is 71 x 29 mm.
Protection Clas	: Ip65 at front, Ip20 at rear.
Weight	: Approximately 0.2 Kg
Enviromental Ratings	: Standart,indoor at an altitude of less than 2000 meters with none condensing humidity.
Storage / Operating Temperature	: -40 °C to +80 °C / -30 °C to +80 °C
Storage / Operating Humidity	: 90 % max. (None condensing)
Installation	: Fixed installation
Overvoltage Category	: II.
Pollution Degree	: II, office or workplace, none conductive pollution
Operating Conditions	: Continuous
Supply Voltage and Power	: 230V~ (±%15) 50/60Hz - 1.5VA : 115V~ (±%15) 50/60Hz - 1.5VA : 24V~ (±%15) 50/60Hz - 1.5VA : 24V⎓ (±%15) 50/60Hz - 1.5VA : 10 -30V⎓ 1.5W
Temperature Sensor Input	: NTC, PTC, PT-100,0/2..10V⎓,0/4..20mA⎓ or ProNem Mini PMI-P

8. Specifications

NTC input type	: NTC (10 kΩ @25 °C)
PTC input type	: PTC (1000 Ω @25 °C)
Termoresistance input type	: PT-100 IEC751 (ITS90)
Humidity input type	: 0/2..10V⎓,0/4..20mA⎓ or ProNem Mini PMI-P
Accuracy	: ± 1 % of full scale
Sensor Break Protection	: Upscale
Control Form	: PID or ON / OFF
Relay Outputs	: 5 A@250 V ~ at Resistive Load (Heating Output) : 3 A@250 V ~ at Resistive Load (Humidificating, Alarm and Egg tray rotator Output
Optional SSR Driver Output	: Maximum 30mA, Maximum 15V
Temperature Display	: 8 mm Red 4 digit LED Display
Humidity Display	: 8 mm Green 4 digit LED Display
LED Displays	: P (Green),%(Green),°C (Red), °F(Red), Alarm (Red), Humidifier Output (Red), Egg tray rotator Output (Red) Heating Output (Red),
Internal Buzzer	: ≥83dB
Upprovals	: CE EAC

10. Other Informations

ESM-3722 (77x35 DIN Size)	A	B	C	D	E	/	FG	HI	/	U	V	W	Z
			0		0	/			/				0

A	Power Supply Voltage
2	24V⎓ (±%15) 50/60Hz - 1.5VA
3	24V~ (±%15) 50/60Hz - 1.5VA
4	115V~ (±%15) 50/60Hz - 1.5VA
5	230V~ (±%15) 50/60Hz - 1.5VA
8	10 - 30 V ⎓ 1.5W

B	Temperature Sensor Input	Scale(°C/°F)
1	PT 100, IEC751(ITS90)	0°C/32°F ;100°C/212°F
2	PTC (Not-1)	0°C/32°F ;100°C/212°F
3	NTC (Not-1)	0°C/32°F ;100°C/212°F
4	0/2..10Vdc Voltage Input	User defined
5	0/4..20mA Current Input	User defined
6	ProNem Mini PMI-P	-20°C/-4°F ; 80°C/176°F

C	Humidity Sensor Input	Scale (%)
4	0/2..10Vdc Voltage Input	0% - 100%
5	0/4..20mA Current Input	0% - 100%
6	ProNem Mini PMI-P	0% - 100%

E	Heating Output
1	Relay Output (5 A@250 V ~,,at Resistive Load 1NC, 1 NO)
2	SSR Drive Output (Maximum 30mA,Maximum 15V)

FG	Humidifier Output
01	Relay Output (3A@250 V ~,,at Resistive Load ,1 NO)

HI	Egg Try Rotator Output
01	Relay Output (3A@250 V ~,,at Resistive Load ,1 NO)

U	Alarm Output
1	Relay Output (3A@250 V ~,,at Resistive Load ,1 NO)

V	Temp.Sensor which is given with ESM-3722
0	None
1	PTC-M6L40,K1.5 (PTC Air Probe 1.5 m silicon cable)
2	PTCS-M6L30.K1.5.1/8"(PTC Liquid Probe with 1.5 m silicon cable)
3	NTC-M5L20.K1.5 (NTC Probe thermoplastic moulded with 1.5m cable for cooling application)
4	NTC-M6L50.K1.5 (NTC Probe stainless steel housing with 1.5m cable for cooling application)
6	ProNem Mini PMI-P (2.5m cable for Temperature and Humidity application)
9	Customer

All order information of ESM-3722 Hatcher Controller are given on the table at above. User may form appropriate device configuration from information and codes that at the table and convert it to the ordering codes.Firstly, supply voltage then other specifications must be determined. Please fill the order code blanks according to your needs. Please contact us, if your needs are out of the standards.

Note-1: If input type is selected PTC or NTC (B = 2, 3), Temperature sensor is given with the device.For this reason, if input type is selected as PTC,sensor type (V = 0,1 or 2) or if input type is selected as NTC, sensor type (V = 0, 3 or 4) must be declared in ordering information.

EMKO

ESM-3722 77x35 DIN Size Hatcher Controller

ESM-3722 77 x 35 DIN Size Digital Hatcher Controller

- 4 Digits for Temperature Display
- 4 Digits for Humidity Display
- Temperature Sensor Input
  NTC, PTC, PT-100, 0/2..10V, 0/4..20mA or ProNem Mini PMI-P
  (Must be determined in order.)
- Humidity Sensor Input
  0/2..10V, 0/4..20mA or ProNem Mini PMI-P
  (Must be determined in order.)
- 4 Output
  Heating Control Output
  Egg tray rotator Output
  Humidification Control Output
  Alarm Control Output
- Relay or SSR Outputs (Must be determined in order.)
- Selectable Temparature Control (PID or ON / OFF)
- Auto-Tune PID
- Set value boundaries
- Manual Start of tray rotator from front panel
- Alarm parametreters
- Adjustable internal buzzer according to the alarm situations
- Password protection for programming mode,

Instruction Manual. ENG ESM-3722 01 V04 02/15

1.3 Installation

A visual inspection of this product for possible damage occurred during shipment is recommended before installation.
It is your responsibility to ensure that qualified mechanical and electrical technicians install this product.

If there is danger of serious accident resulting from a failure or defect in this unit, power off the system and separate the electrical connection of the device from the system.

The unit is normally supplied without a power supply switch or a fuse. Use power switch and fuse as required.

Be sure to use the rated power supply voltage to protect the unit against damage and to prevent failure Keep the power off until all of the wiring is completed so that electric shock and trouble with the unit can be prevented.

Never attempt to disassemble, modify or repair this unit. Tampering with the unit may results in malfunction, electric shock or fire.

Do not use the unit in combustible or explosive gaseous atmospheres.

During putting equipment in hole on the metal panel while mechanical installation some metal burrs can cause injury on hands, you must be careful.

Montage of the product on a system must be done with it's fixing clamps. Do not do the montage of the device with inappropriate fixing clamp. Be sure that device will not fall while doing the montage.

It is your responsibility if this equipment is used in a manner not specified in this instruction manual.

1.4 Warranty

EMKO Elektronik warrants that the equipment delivered is free from defects in material and workmanship. This warranty is provided for a period of two years. The warranty period starts from the delivery date. This warranty is in force if duty and responsibilities which are determined in warranty document and instruction manual performs by the customer completely.

1.5 Maintenance

Repairs should only be performed by trained and specialized personnel. Cut power to the device before accessing internal parts.
Do not clean the case with hydrocarbon-based solvents (Petrol, Trichlorethylene etc.). Use of these solvents can reduce the mechanical reliability of the device. Use a cloth dampened in ethyl alcohol or water to clean the external plastic case.

1.6 Manufacturer Company

Manufacturer Information:
Emko Elektronik Sanayi ve Ticaret A.Ş.
Demirtaş Organize Sanayi Bölgesi Karanfil Sk. No:6 16369 BURSA/TURKEY
Phone : +90 224 261 1900
Fax : +90 224 261 1912
Repair and maintenance service information:
Emko Elektronik Sanayi ve Ticaret A.Ş.
Demirtaş Organize Sanayi Bölgesi Karanfil Sk. No:6 16369 BURSA/TURKEY
Phone : +90 224 261 1900
Fax : +90 224 261 1912

1.Preface

ESM 3722-HT 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 properties.

1.1 Environmental Ratings

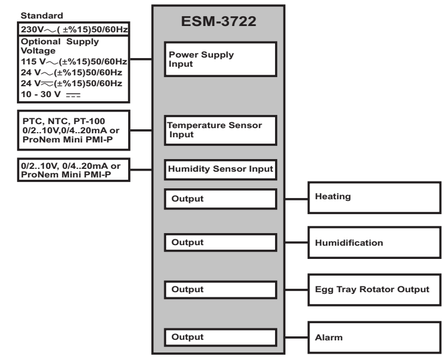
Operating Temperature : 0 to 50 °C

Max. Operating Humidity : 90% Rh (non-condensing)

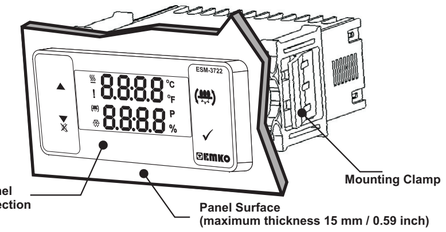
Altitude : Up to 2000 m.

Forbidden Conditions:
Corrosive atmosphere
Explosive atmosphere
Home applications (The unit is only for industrial applications)

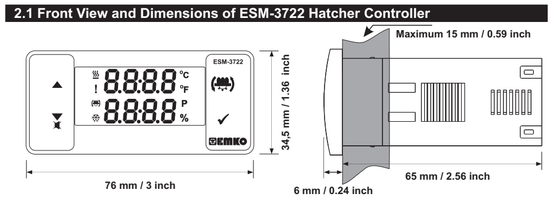
1.2. General Specifications



2. General Description



2.1 Front View and Dimensions of ESM-3722 Hatcher Controller



2.2 Panel Cut- Out