



## Industrial Kitchen Controllers

Single Deck Bakery Controller (Oven Control.Single)

Double Deck Bakery Controller (Oven Control.Dual)

Cooking Controller (ESM-9944-N / ESM-9945-N)

On-Off Heating Controller with Cooking Time (ESM-3711-HN)

Single & Dual SET Cooling Controller (ESM-3711-CN / ESM-3712-CN)

# Industrial Kitchen Controllers

Single & Double Deck Bakery Controller

OVEN CONTROL.SINGLE  
OVEN CONTROL.DUAL

- ▶ 8 buttons to making different programs
- ▶ 2 isolated thermocupl input J or K (It must be determined in order)
- ▶ Auto-start feature with real time

## Specifications

- ON / OFF temperature control for 2 areas
- Limitation of set value
- Adjustable temperature offset
- Selection of operation with hysteresis
- 4 displays which has 3 digits and 2 displays which has 4 digits (For clock)
- Relay outputs to control 2 Heaters(no/nc), 4 Fans, Brulor, Steam, Lamp and Time-Out
- 1 door status input and 1 brulor failure input
- For failure and set status internal buzzer
- Password protection for programming mode

## Scope of application:

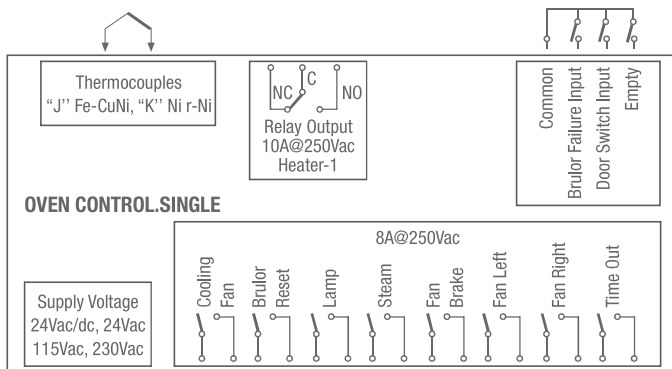
- Start-base ovens -Conversion ovens -Matador ovens

## Measurement Range

**Accuracy:** ±1% of full scale

**Cold Junction Compensation:** Automatically ± 0.1°C/1°C

**Sampling Cycle:** 3 samples per second



## Technical Specification

**Input;** Termokupl (TC): J, K (IEC 584.1) (ITS90)

## Environmental Ratings and Physical Specification

**Operting Temperature:** 0...50°C

**Humidity:** 0-90%RH (none condensing)

## Supply Voltage

24Vac/dc (-%15, +%10) 50/60Hz

24Vac (-%15, +%10) 50/60Hz

115Vac (-%15, +%10) 50/60Hz

230Vac (-%15, +%10) 50/60Hz

## Output

### Heater Control Output:

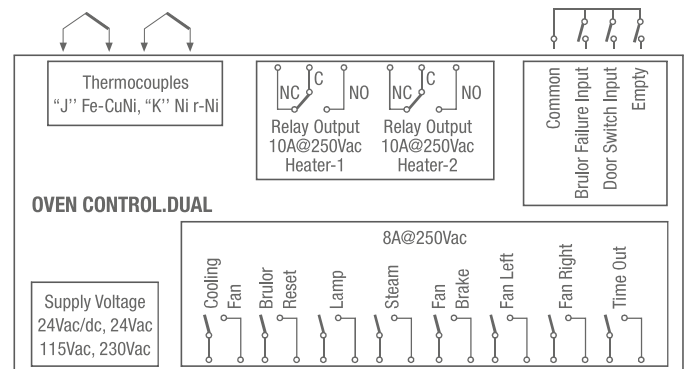
Relay (10A @ 250Vac at resistive load) for heating

### Control Output:

Relay (8A @ 250Vac at resistive load)

(for Fan, Steam, Lamp, Time, Cooling)

**Dimension:** 300x140mm



OVEN CONTROL.SINGLE  
OVEN CONTROL.DUAL

- A** Supply Voltage
- 2 24Vac/dc (-%15, +%10) 50/60Hz
  - 3 24Vac (-%15, +%10) 50/60Hz
  - 4 115Vac (-%15, +%10) 50/60Hz
  - 5 230Vac (-%15, +%10) 50/60Hz

- BC** Input
- 23 J, Fe-CuNi, 0...350 °C
  - 25 K, NiCr-Ni, 0...350 °C

Heater-2(OVEN CONTROL.DUAL) FG

Relay Output 01

SSR Driver Output 02

Heater-1 E

None 0

Relay Output 1

SSR Driver Output 2



Cooking Controller

# Industrial Kitchen Controllers

ESM-9944-N ESM-9945-N



▶ Programmable ON/OFF, P, PI, PD, and PID control types

▶ Ease of Use with Single Display and Port

▶ Adaptation of PID coefficients to the system by Auto Tune / Self Tune

## Specifications

- 4 digits display
- Process input (TC,RTD)
- J,K,R,S Termokupl and
- 2 or 3 wire Pt100 input
- Adjustable Process Offset Value
- Working time selection in minutes or seconds
- Audible alarm by internal buzzer
- Door switch input
- Steam output (ESM-9945)

## Technical Specification

**Input:** Selectable TC (J,K,R,S) or Pt-100

### Measurement Range

**Accuracy:** ±0,25% of full scale

**Cold Junction Compensation :** Automatically ± 0.1°C/1°C

**Sensor Break Protection:** Upscale

**Sampling Cycle:** 10 samples per second

### Supply Voltage

24Vac /Vdc (-%15, +%10) 50/60Hz 3VA

24Vac (-%15, +%10) 50/60Hz 3VA

115Vac (-%15, +%10) 50/60Hz 3VA

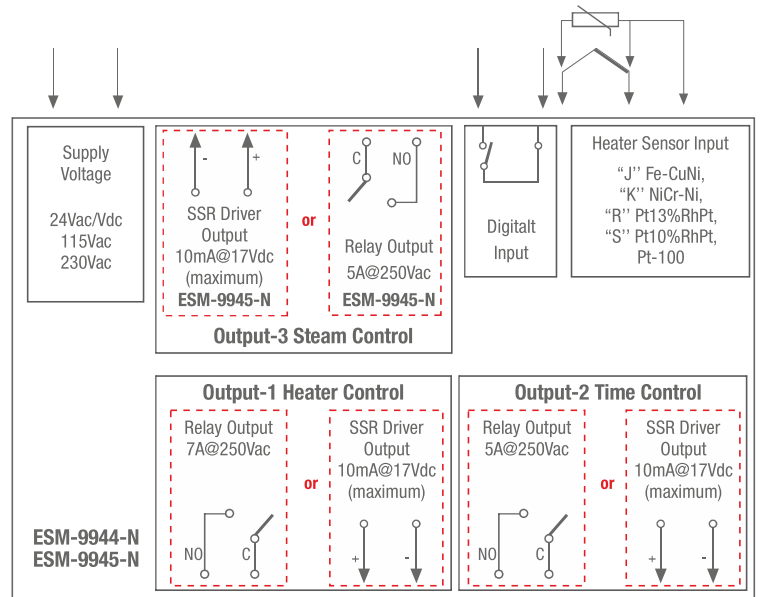
230Vac (-%15, +%10) 50/60Hz 3VA

### Output

#### Heater Control Output:

Relay (7A@250V at resistive load)

SSR Driver Output (max. 10 mA@17Vdc)



### Time Output:

Relay (5A@250V at resistive load)

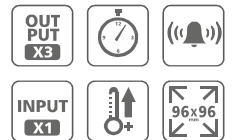
SSR Driver output (max. 10 mA@17Vdc )

### Steam Output (ESM-9945)

Relay (5A@250V at resistive load)

SSR Driver output (max.10 mA@17Vdc )

**Dimension:** 96x96mm, Depth: 100mm



ESM-9944-N  
ESM-9945-N

- A Supply Voltage
- 2 24Vac/dc (-%15, +%10) 50/60Hz
- 3 24Vac (-%15, +%10) 50/60Hz
- 4 115Vac (-%15, +%10) 50/60Hz
- 5 230Vac (-%15, +%10) 50/60Hz

- BC Input
- 25 Selectable TC (J,K,R,S) or Pt-100

- Steam Control Output-3 (ESM-9945-N) HI
- Relay Output (5A@250V at resistive load) 01
- SSR Driver Output (max. 10 mA@17Vdc) 02

- Time Control Output-2 FG
- Relay Output (5A@250V at resistive load) 01
- SSR Driver Output (max. 10 mA@17Vdc) 02

- Heater Control Output-1 E
- Relay Output (7A@250V at resistive load) 1
- SSR Driver Output (max. 10 mA@17Vdc) 2

# Industrial Kitchen Controllers

Cooking  
Controllers

ESM-9944 ESM-9945



On/Off or Proportional control form selection

Pt-100 2 wire or 3 wire temperature input

## Specifications

J type thermocouple, K type thermocouple,  
On/Off or Proportional control form selection,  
Working time selection in minutes or seconds,  
Hysteresis adjustment,  
Audible alarm by internal buzzer,  
Door switch input,  
Steam output (ESM-9945)

## Technical Specification

### Input;

Thermocouple (TC): J, K (IEC 584.1) (ITS90)  
Thermoresistance (RTD): 2 or 3 wire PT-100 (IEC 751) (ITS90)

### Measurement Range

**Accuracy:** ±1% of full scale

**Cold Junction Compensation:** Automatically ±0.1°C/1°C

**Sensor Break Protection:** Upscale

**Sampling Cycle:** 3 samples per second

### Supply Voltage

230Vac (±%15) 50/60 Hz -3VA

115Vac (±%15) 50/60 Hz -3VA

24Vac (±%15) 50/60 Hz -3VA

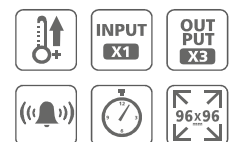
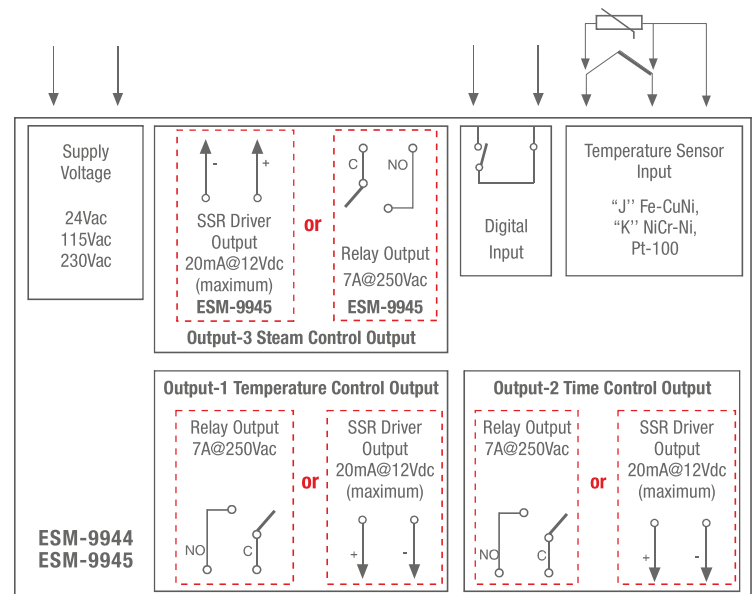
### Applications

Bakery Applications -Fermentation Cabinets-  
Ceramics and Glass ovens -Grain drier cabinet-  
Industrial frier

### Output

#### Temperature Control Output:

Relay (7A @ 250Vac) Resistive Load or optional  
SSR Driver Output (Maximum 20mA @ 12Vdc)



### Time Control Output:

Relay (7A @ 250Vac) Resistive Load or optional  
SSR Driver Output (Maximum 20mA @ 12Vdc)

### Steam Control Output (ESM-9945):

Relay (7A @ 250Vac) Resistive Load or optional  
SSR Driver Output (Maximum 20mA @ 12Vdc)

**Dimensions:** 96x96mm, Depth: 96mm

ESM-9944  
ESM-9945

A Supply Voltage

- 3 24Vac (-%15, +%10) 50/60Hz
- 4 115Vac (-%15, +%10) 50/60Hz
- 5 230Vac (-%15, +%10) 50/60Hz

BC Input

- 03 Pt-100, 0...400 °C
- 05 J, Fe-CuNi, 0...800 °C
- 10 K, NiCr-Ni, 0...999 °C

A

BC

0

E

FG

HI

1

0

0

0

Steam Control Output-3 HI  
Relay (7A @ 250Vac) Resistive Load or optional 01  
SSR Driver Output (Maximum 20mA @ 12Vdc) 02

Time Control Output-2 FG  
Relay (7A @ 250Vac) Resistive Load or optional 01  
SSR Driver Output (Maximum 20mA @ 12Vdc) 02

Temperature Control Output-1 E  
Relay (7A @ 250Vac) Resistive Load or optional 1  
SSR Driver Output (Maximum 20mA @ 12Vdc) 2



On/Off Heating Controller with Cooking Time

# Industrial Kitchen Controllers

ESM-3711-HN



▶ PTC, NTC, PT-100, PT-1000 thermoresistances input types

### Specifications

- 4 Digits Display
- Heating application
- Remote access, data collecting and controlling with Modbus RTU
- Having CE mark according to European Norms
- Alarm parameters
- Installing parameters using Prokey
- Internal buzzer for Alarm situation
- User can select to start cooking time (Timer) when temperature reaches to the set value
- Adjustable temperature offset
- Relay or SSR driver output
- Digital Input (Cooking Time Start/Stop Input)
- Adjustable cooking time from front panel

### Technical Specification

#### Input

- PTC: PTC (1K0hm @ 25°C)
- NTC: NTC (10 K0hm @ 25°C)
- Thermocouple (TC): J, K (IEC 584.1) (ITS90)
- Thermoresistance (RTD): 2 wire PT-100, PT-1000 (IEC 751) (ITS90)

#### Measurement Range

-50°C to 999 °C (refer to ordering information)

**Accuracy:** ±1% of scale

**Cold Junction Compensation:** Automatically ± 0.1°C/1°C

**Sensor Break Protection:** Upscale

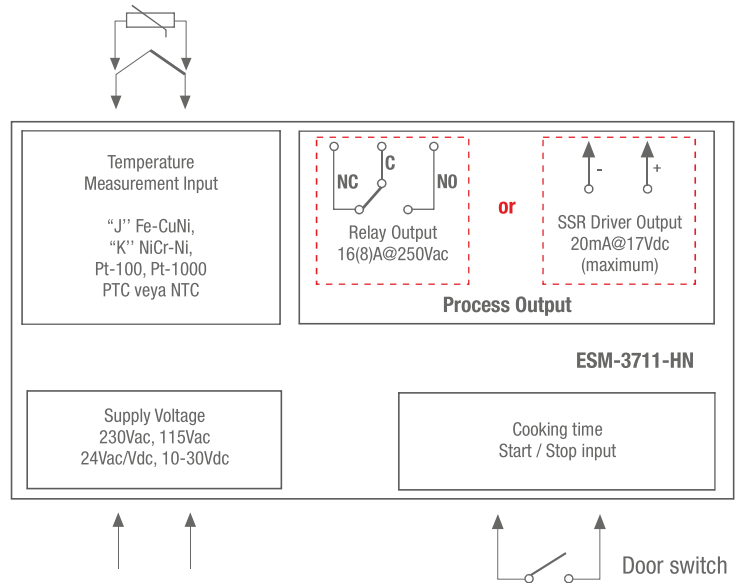
**Sampling Cycle:** 3 samples per second

#### Output

##### Control Output:

- Relay (10A @ 250V "for resistive load") or
- SSR Driver output (Maximum 20mA@12Vdc)

▶ Heating Control According to the Cooking Time

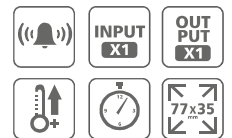


#### Supply Voltage

- 24Vac/Vdc (-%15, +%10) 50/60Hz-1.5 VA
- 24Vac (-%15, +%10) 50/60Hz-1.5 VA
- 115Vac (-%15, +%10) 50/60Hz-1.5 VA
- 230Vac (-%15, +%10) 50/60Hz-1.5 VA
- 10-30V DC 1.5W

#### Environmental Rating and Physical Specification

- Operation Temperature:** 0...50°C
- Humidity:** 0-90%RH (none condensing)
- Protection Class:** IP65 at front, IP20 at rear
- Dimensions :** 77x35mm, Depth: 71mm



ESM-3711-HN . A . BC . 0 . E / 00 . 00 / . 1 . V . 0 . 0

ESM-3711-HN  
(76x34,5x71 mm)

#### A Supply Voltage

- 2 24Vac/dc (±%15) 50/60 Hz
- 3 24Vac (±%15) 50/60 Hz
- 4 115Vac (±%15) 50/60 Hz
- 5 230Vac (±%15) 50/60 Hz
- 8 10...30Vdc

#### BC Input

- 05 J, Fe CuNi IEC584.1(ITS90)
- 10 K, NiCr Ni IEC584.1(ITS90)
- 11 Pt 100, (-50...400°C)
- 09 Pt 100, (-19.9...99.9°C)
- 12 PTC (-50...130°C)
- 14 Pt 1000, (-50...400°C)
- 13 Pt 1000, (-19.9...99.9°C)
- 18 NTC (-50...100°C)

- 1 PTC-M6L40.K1.5 (PTC Air Probe with 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 1.5 m cable for cooling application)
- 4 NTC-M6L50.K1.5 (Metal protective tubular, 1.5 m wired NTC probe)

- Process Output E
- Relay Output: (16(8)A @ 250Vac) 1
- SSR Driver Output: (Max.20mA, Max.17Vdc) 2

# Industrial Kitchen Controllers

Single & Dual SET  
ON / OFF Cooling Control



ESM-3711-CN ESM-3712-CN



- ▶ 3 Output for compressor, defrost and fan controls
- ▶ Remote access, data collecting and controlling with ModBus RTU
- ▶ Fan can be operated depending on compressor and defrost

## Specifications

- 4 digits display
- NTC Input or PTC Input (Must be determined in order.)
- ON/OFF Control Adjustable °C and °F
- Set value boundaries
- 2 sensor input for cabinet and evaporator
- Configurable digital input
- Separately adjustable 2 offset value for cabinet and evaporator sensor
- Selectable defrost function (hot gas or electric)
- Adjustable defrost time from front panel
- Fan can be operated depending on evaporator temperature or (cabinet-evaporator) temperature
- Defrost time and/or manual defrost and/or temperature set value protection
- Operation selection of compressor operate continuously, stops or operates periodically in case of cabinet probe defect
- Installing parameters using Prokey
- Password protection for programming mode

## Technical Specification

### Input

- NTC: NTC (10K0hm @ 25°C)
- PTC: PTC (1K0hm @ 25°C)

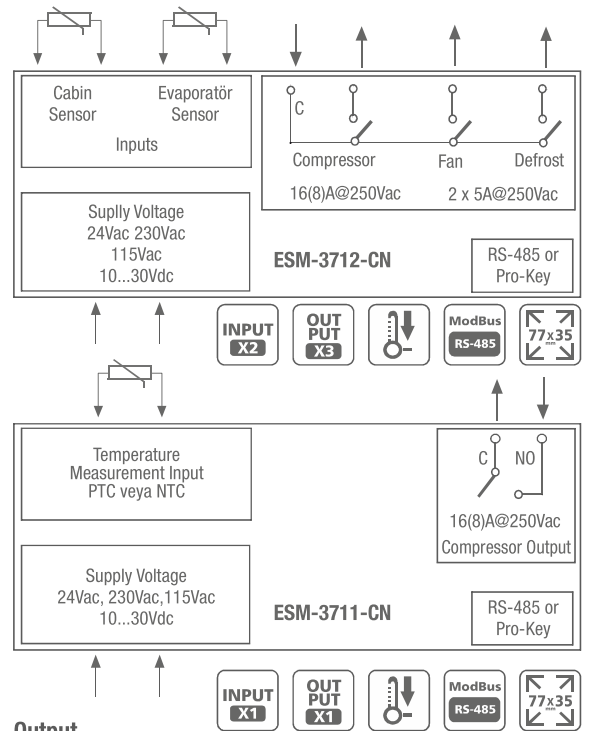
### Measurement Range

**Accuracy:** ±1% of scale

**Sampling Cycle:** 3 samples per second

### Supply Voltage

- 24Vac (±%15) 50/60 Hz -1.5VA
- 115Vac (±%15) 50/60 Hz -1.5VA
- 230Vac (±%15) 50/60 Hz -1.5VA
- 10...30Vdc



## Output

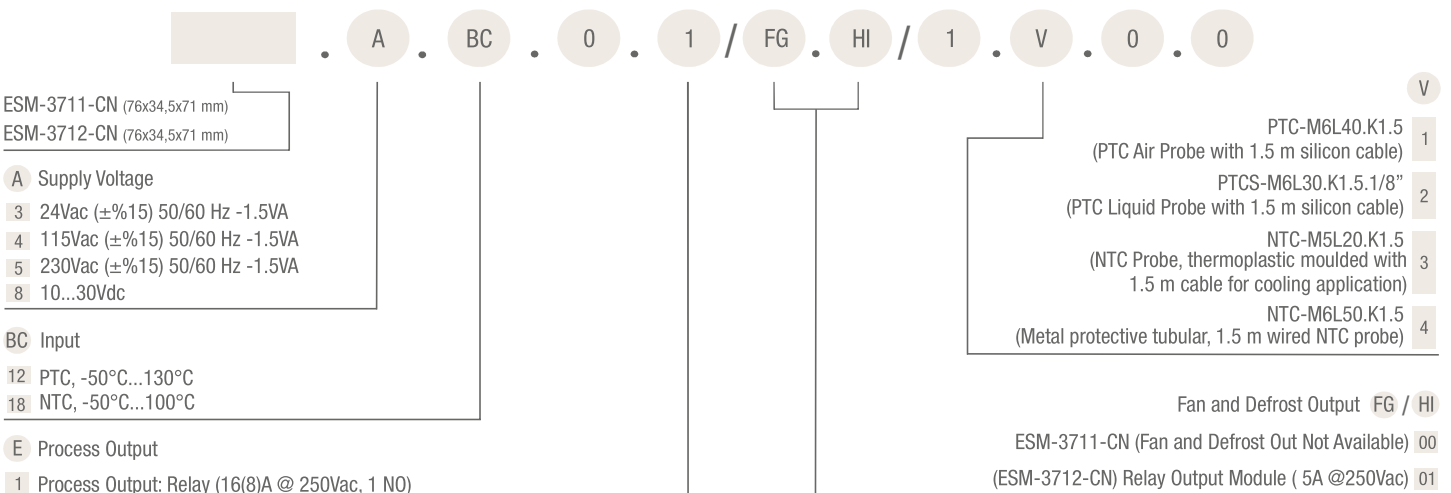
- Compressor Output: Relay (16A @ 250Vac "for resistive load")
- Defrost Output: Relay (5A @ 250Vac "for resistive load") or Fan Output (5A@250Vac "for resistive load")

## Electrical Life

At full load 100.000 switching

## Environmental Rating and Physical Specification

- Operation Temperature:** 0...50°C
- Humidity:** 0-90%RH (none condensing)
- Protection Class:** IP65 at front, IP20 at rear
- Dimensions:** 77x35mm, Depth: 62.5mm





# Industrial Kitchen Controllers

ESM-3710-N



- ▶ Installing parameters using Prokey
- ▶ Password protection for programming section

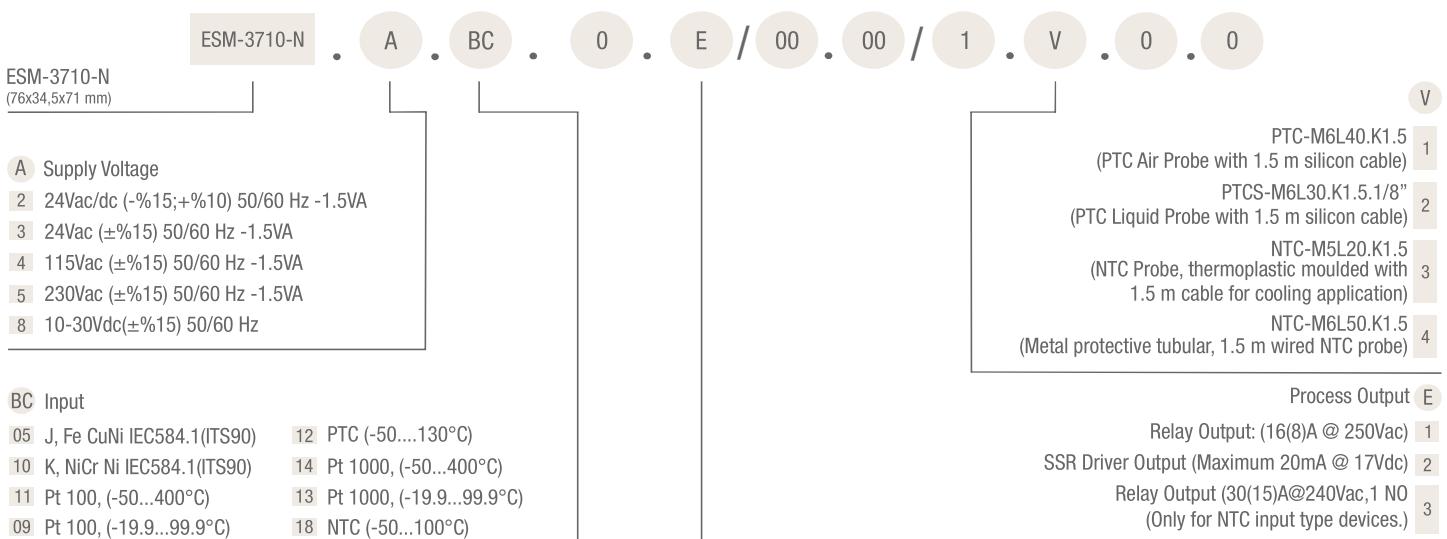
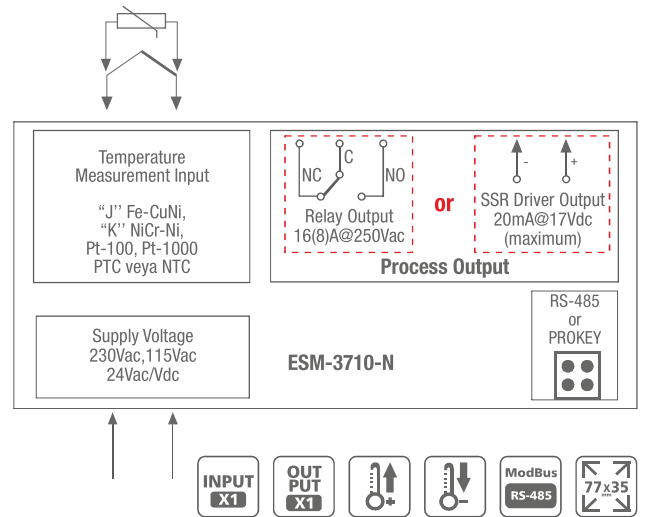
- ▶ Remote access, data collecting and controlling with Modbus RTU
- ▶ Adjustable internal buzzer according to sensor defect status

## Specifications

- 4 Digits Display
- NTC Input or PTC Input or J type thermocouple Input or Ktype thermocouple Input or 2-Wire PT-100 Input or 2-Wire PT-1000 Input (Must be determined in order.)
- Adjustable temperature offset
- ON/OFF temperature control
- Selectable heating or cooling function
- Selection of operation with hysteresis
- Adjustable temperature offset
- Set value low limit and set value high limit boundaries
- Operation selection of compressor operates continuously, stops or operates periodically in case of sensor defect
- Compressor protection delays

## Technical Specification

- Accuracy:** ±1% of scale
- Cold Junction Compensation:** Automatically ± 0.1°C/1°C
- Sensor Break Protection:** Upscale
- Sampling Cycle:** 3 samples per second





🏠 : Emko Elektronik A.Ş. Bursa Organize Sanayi Bölgesi, (Fethiye OSB Mah.)  
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