2017 Company Presentation

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Contents

1 Company Profile
2 Competition Advantages
3 Products and Industries
4 Future Planning

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Current Situation

- Rank No.1 among domestic thermostat manufacturers in terms of sales quantity
- Industrial automation controller manufacturer, with the capabilities of developing and manufacturing;
- With the strongest R&D experts in domestic industrial automation field;
- One of the most promising and innovative corporate in Turkey.
- Based in Istanbul Umraniye with 100 employees

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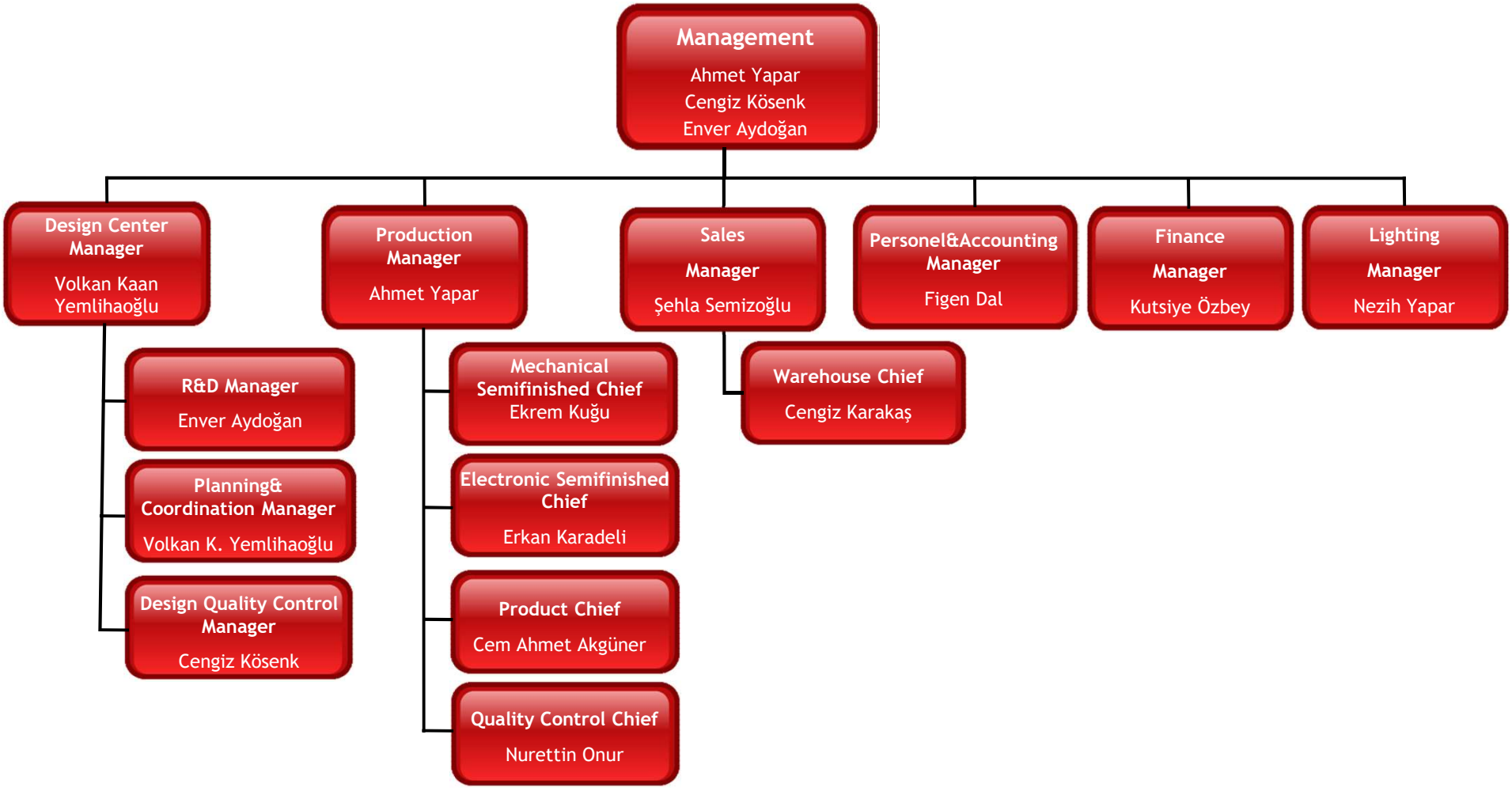
Company Structure



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Corporate Culture

Our Mission: We dedicated ourselves becoming one of the world's top industrial automation product & solution providers.

Our Values:

Customer First

We try our best to fulfill the customer needs.

Respect & Honesty

Our basic principles for dealing with customers are respect and honesty.

Team Spirit

Effective management is to make each and every employee's effort an advantage of the company as a whole, and to prevent anyone's weakness from detracting the company strength.

Constant Innovation

We dedicate constant efforts to improve processes and achieve product & management innovation.

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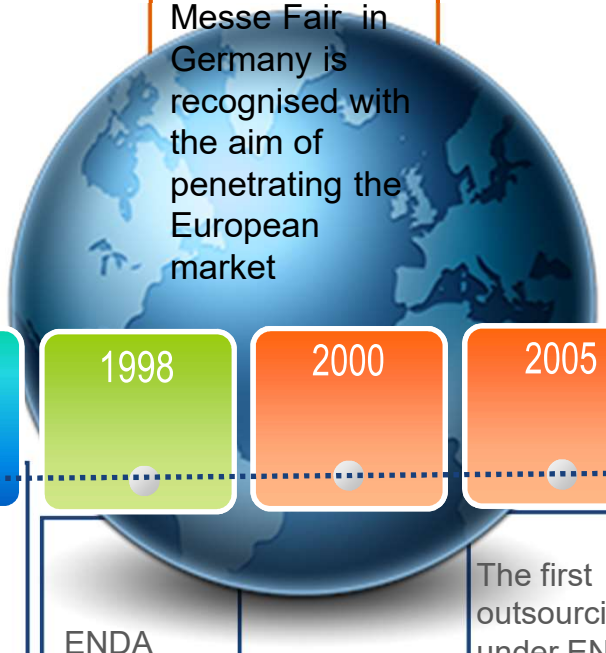
Rapid Growth

— Honors



Primary attendance of Hannover Messe Fair in Germany is recognised with the aim of penetrating the European market

1990 — Company Founded

1992 — CN611 the first ENDA product launched

1995 — The first overseas sale is recognised

1998 — ENDA Industrial Electronic Co. Ltd. is established

2000

2005 — The first outsourcing under ENDA brand name

2009 — Launched 100% made in Turkey PLC's

2012 — Assign PLC products

2016 — ENDA, carrying on business with 80 countries, exported to 35 countries directly as full solution provider

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Excellent Team

7/24 technical support

Most team members have had years of experience in this field and some of them also worked in global companies.

We provide solution for the machine manufacturer's innovation

Covering fields such like management, R&D, manufacture, procurement, finance, sales and quality control, etc.

The core management team has worked together for 10 years. A mature management system has been built up.

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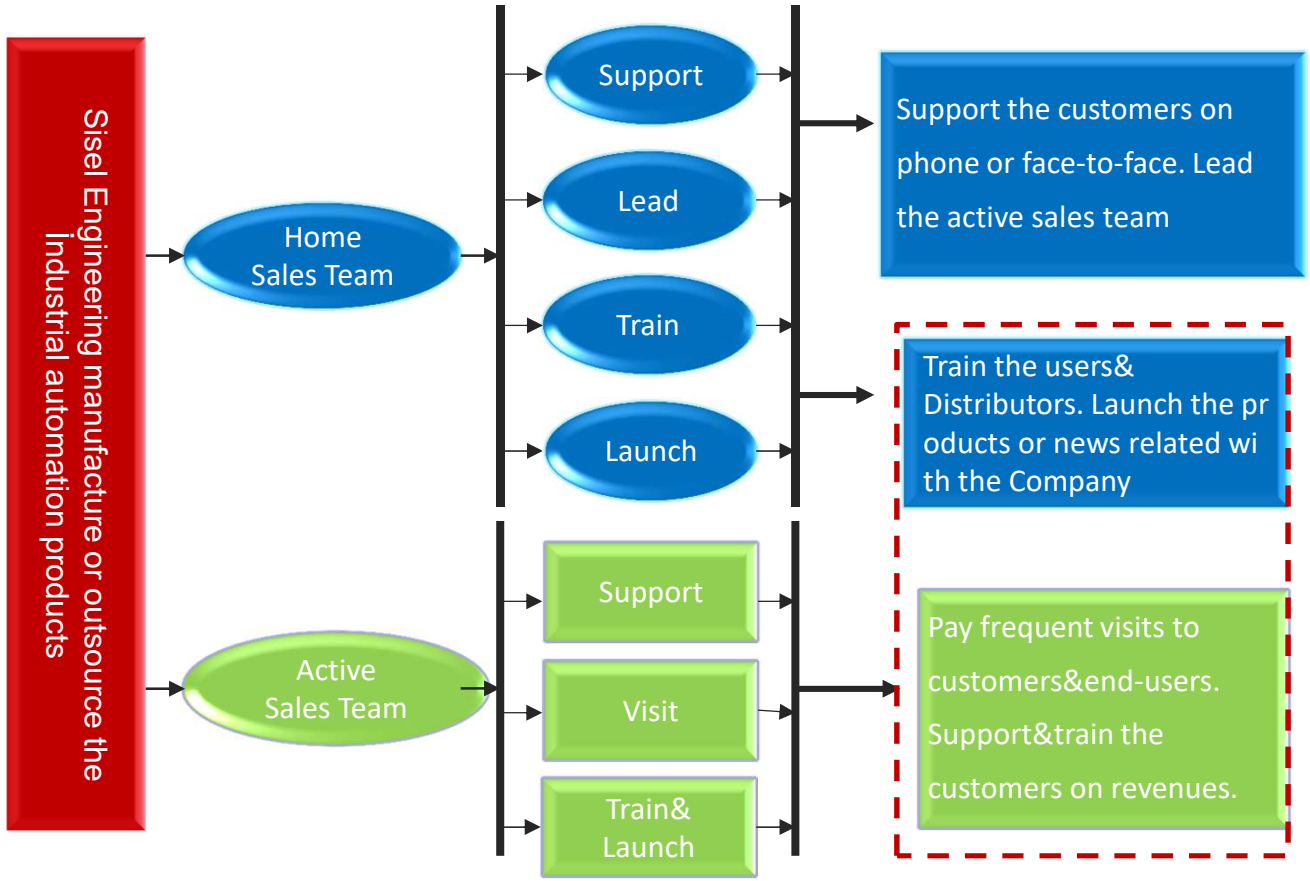
From Sisel Engineering to end-users



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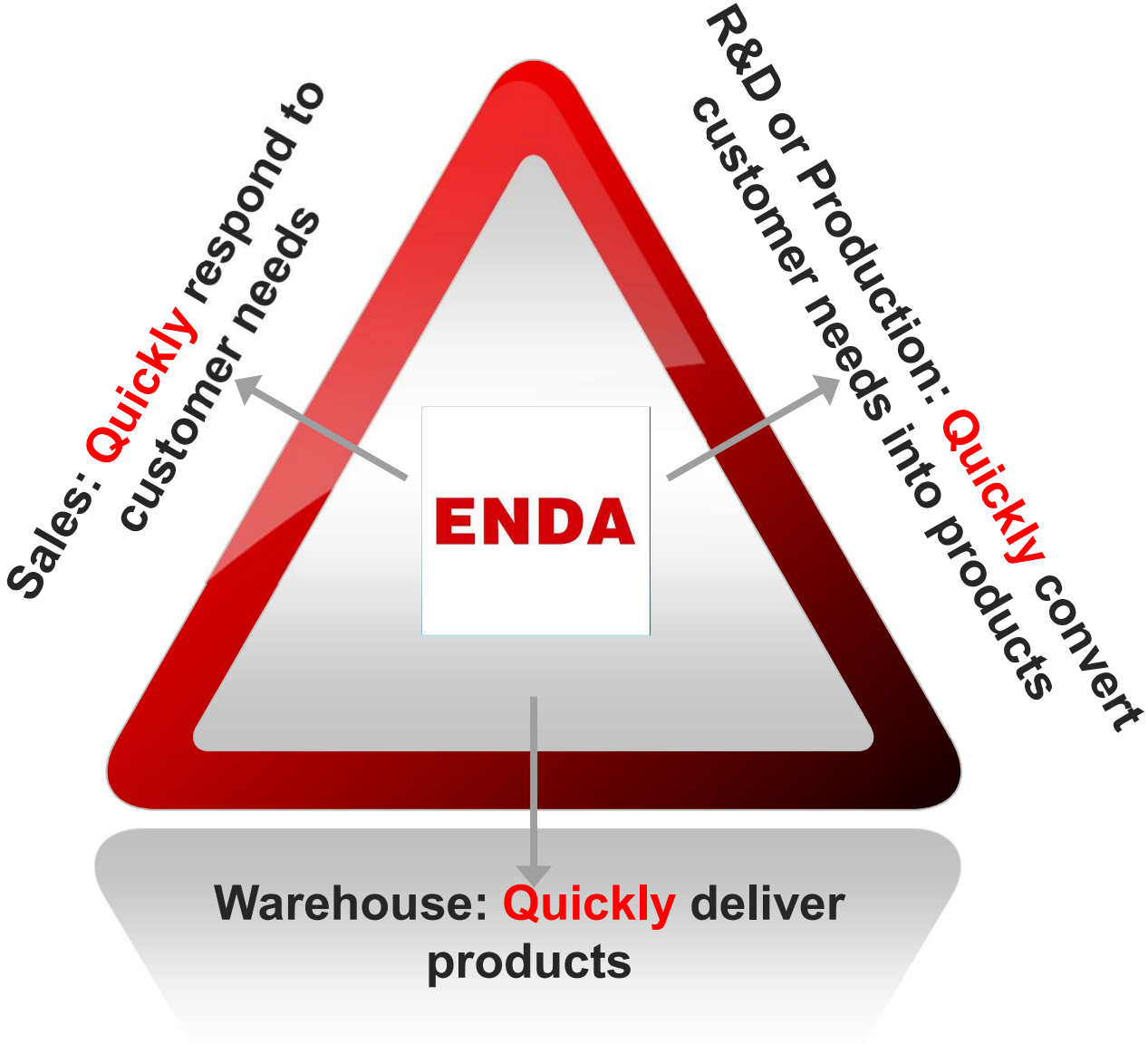
Quick Respond



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Quick Respond

— Perfect Network

27 distributors in overseas

21 distributors in domestic market

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Product Overview

- Temperature Controllers
- Process Controlllers
- Humidity & Temperature
- Defrost Controllers
- Counters & Tachometers
- Timers
- Digital Potentiometers
- Solid State Relays
- Converters
- Indicators
- Protection Relays
- Special Purpose Controllers
- Human Machine Interface
- Accessories

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Temperature Controllers

- Analog – AT411, ATC9311
- Digital On-Off – ET2001, ET2411, ET2412, ET4403, ET5411, ET5412
- Digital PID – ET4402, ET2011, ET4420, ET7420, ET8420, ET9420

Analog	Easy-to-use, basic temperature controller with analogue dial setting
Digital On-Off	The simplest type of controllers featuring on-off control action designed to provide best solution for simple applications but at a price suited to On/Off applications
Digital PID	PID controllers provide very tight control but the PID algorithm requires tuning. Self tune controllers provide that function

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Process Controllers

- Profile – **EPC9513,** EPC4420, EPC7420, EPC8420, EPC9420
- Universal – **EUC9526,** EU4420, EU7420, EU8420, EU9420
- Modular – **ET1124,** ET1122, ET1112
- Motorized Valve – ET4410

Profile	Simple profile control that includes times ramp/dwell set point profiling
Universal	The perfect solution for the measurement and control of physical parameters such as temperature, pressure and humidity
Modular	Slim-line modular process controller
Motorized valve	Ideal for applications where motorized valve control is required

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Humidity & Temperature

- Sensors – ESHT102, ESHT102-W, ESHT102-DC, ESHT102-CB, EHTS-W, EHTS-DC, EHTC-CB
- Controller – EHTC7425A
- Sensor Controllers – EHTC-W, EHTC-DC, EHTC-CB

Sensors Two models ESHT and EHTS available for wall, cabled, duct mounting

Controller
- Heating or cooling control
- Drying or moistening control
- Fan timer control
- Rotator timer control

Sensor Controllers
- Selectable 0-20mA, 4-20mA, 0-10V or 1-5V output
- Built-In Display Indicate Humidity and Temperature
- Relay outputs for temperature and humidity
- RS-485 ModBus protocol

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Defrost Controllers

Defrost Controller:

➢ Powerful and user friendly defrost controllers for controlling the sequence of events that occur during systyem defrost cycles

- Models with off-cycle, electrical or hot gas defrost
- NTC probe
- RS-485 comms
- Warning tones
- Digital input for external alarm
- Compressor safet function
- ° C or ° F indication
- ENDAKEY for quick and easy programming
- Models with DIN-rail or flush panel mounted

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Counter & Tachometer

ECH & ETS :

- ETS – Tachometer
- ECH – Counter & Tachometers

ETS1410

- Models with one/two relay and open collector outputs
- Total and batch function in counter model
- Functional output modes
- RS-485 ModBus protocol

ECH4400

ECH7700

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Timers

Analog & Digital Timer:

➢ Cover almost every possible user requirement for timing control

- Analog and digital timers
- Multiple time ranges and operating modes
- Slim line to save space

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Digital Potentiometers

Ideal choice to meet the all universal output requirements:

- EDP – Digital Potentiometer

- Accurate control of motors' speed
- Universal output (0-10V, 0-20mA and 4-20mA
- Soft-on and Soft-off functions
- RS-485 comms
- Synchronous running of potentiometers via RS-485 comms

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Solid State Relays

Comprehensive range of solid state relays with integrated heat-sinks:

Zero Cross & Panel mounted;
- EPAA1 & EPDA1 –1-Phase
- EPAA2 & EPDA2 – 2 x Solid State Relay
- EPAA3 & EPDA3 – 3-Phase

Zero Cross, Rail mounted & Integrated heatsink;
- ERAA1 & ERDA1 – 1-Phase
- ERAA2 & ERDA2 – 2 x Solid State Relay
- EPAA3 & EPDA3 – 3-Phase

Phase Angle & Rail mounted;
- ERCA1 – Analog trigger (4-20mA)
- ERVA1 – Analog trigger (0-10V DC)
- ERPA – Power Regulator (Input signal - 0/4-20mA,0/1-5V,0/2-10V,1/10kΩ)

Phase Angle & Wall mounted;
- EPAC-W – Vibration Controller
- EPAC-W-F - Vibration Controller with selectable vibration frequency

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Converters

Multifunctional, flexible and precise signal converters:

- ECCC – Current Converter
- ECTC, ECTC-TR – Temperature Converter
- ECSC – Signal Converter
- ECVC – Voltage Converter

- TH35 rail mounting
- Safety by 3-way electrical isolation
- Models with isolated RS-485 comms
- Temperature signal converters for TC, PT100 & NTC sensor
- Standard signal converter with configurable mA, mV, or V input and mA or V output
- Measuring converters for current or voltage AC,DC or True RMS values
- Configurable scale for standard signal & temperature converters

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Indicators

Monitor and control many automation and process control applications

- EI2410 & ETI741 – Temperature Indicator
- EI2041 & EI7041 – Process Indicator
- EPA – Ammeter
- EPV - Voltmeter

- Models ideal for measuring, displaying and judging analog values such as AC/DC voltages / currents or temperature
- DIN-rail or flush-panel mounted ammeters & voltmeters
- Optional isolated RS-485 comms for ammeters & voltmeters

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Protection Relay

Protect your system:

- EPMR – Motor Protection Relay
- EPVR – Voltage Protection Relay
- EPCR – Current Protection Relay

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Special Purpose Controllers

- ET1413, ET1413A – Car air conditioning
- ET1413R – Radiator controller
- EID7422 – Differantial temperature controller with analog input
- ETDC2422 - Differantial temperature controller with NTC probe input
- EHTC7425A – Incubator temperature controller
- ET2413K - Incubator temperature controller
- EMTC2412 – Milk tank controller
- ERFA – Fan speed controller
- ECC731 – Current controller

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Human Machine Interface

MT Family:

➢ Perform on-site data collection, processing, monitoring and output in a quick, effective and secure way with HMI

- High resolution
- TFT monitor
- Ethernet port
- 32bit up to 400 MHz CPU
- Real time clock
- 1 USB Host Port
- 1 RS232 and 1 RS232/RS485 support communication port

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Industries

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Industry Applications
— Injection Molding Machine

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Industry Applications

- Heating

Tray/bag sealers
Heat shrink wrapping
Food heat/process
Basic test /lab equipment
Warm storage – vehicle
General industrial – basic

Cooling
Commercial refrigeration
Drink chillers
Cold storage
- building
- vehicle

Food manufacturing process - chill
Air conditioners

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For manufacturing line

- 5.000 m² manufacturing line
- Increase the sales quantity

Installation line

Raw material

Installation line

Mechanical Workshop

Mechanical Workshop

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Teşekkür Ederiz…

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