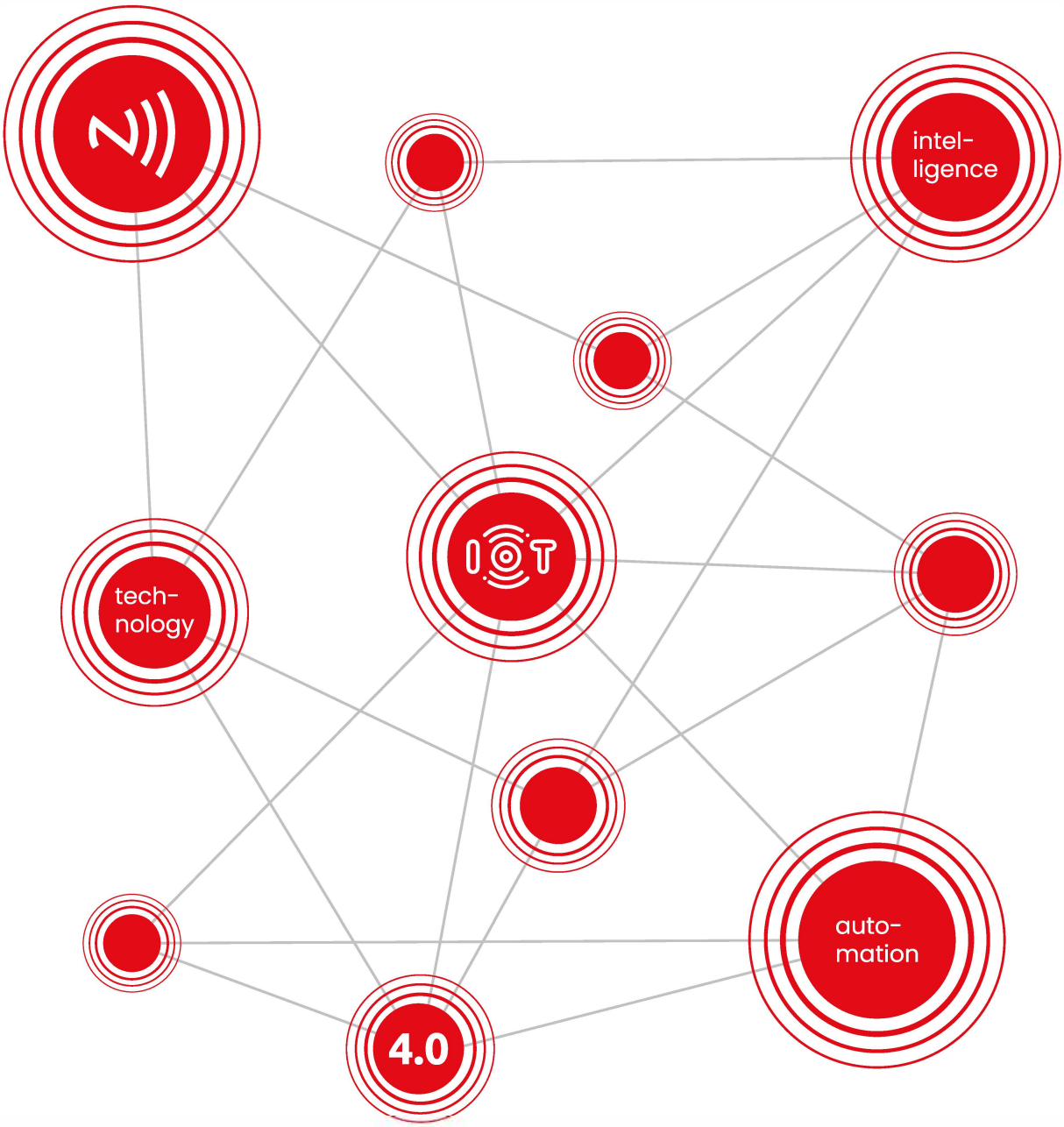
PRODUCT CATALOGUE



enda

technology | intelligence | automation

About Us

ENDA, founded in 1989, has been at the forefront of technology and design for 35 years. Its commitment to innovation and advanced technology has inspired the brand to evolve and build a strong brand identity.

Today, ENDA addresses its customers even more strongly with its new logo, expressed in a modern and minimalist design. By combining the know-how of the past with the potential of the future, the brand adapts to the ever-growing and changing industry needs.

ENDA maintains its vision of adding value to its customers and increasing its influence on a global scale through future innovations. This new era is a reflection of ENDA's dynamic and innovative approach.

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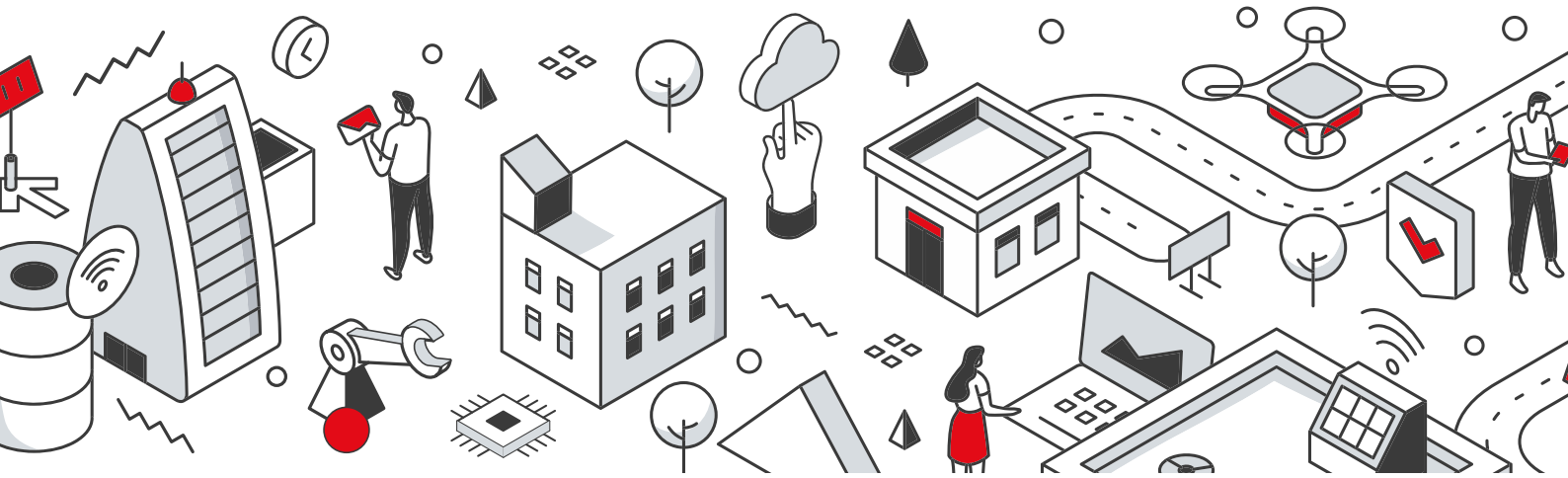
MANUALS
LOCATION
ONLINE--LAB--35
LOCATION ZONE
710
CEC 9313
RULES

IoT Innovations

We have incorporated the Internet of Things (IoT), an important step for Industry 4.0, into our product development process. This innovation allows for smarter, interconnected, and more manageable industrial processes.

IoT enables real-time communication and automatic decision-making mechanisms between production equipment.IoT technology products that provide operational excellence, sustainability and more at ENDA!



What is IoT (Internet of Things)?

IoT (Internet of Things) is a technology ecosystem where physical devices interact with each other and with users via the internet. These devices collect, share and process data through sensors, software and other technologies.

How IoT Works?

1

Sensors and Devices

Objects are equipped with sensors and other integrated technologies.

2

Data Collection

These sensors collect data from their environment. For example, a smart thermostat can measure the temperature in a room.

3

Internet Connection

The collected data is transmitted between devices or between devices and a central system via the internet.

4

Data Processing and Analysis

The collected data is usually processed on a cloud-based platform and analyzed.

5

Applications and Feedback

The results are used to provide feedback to users or other devices through user interfaces or automated system controls.

What are the Advantages of IoT?

IoT remote access devices have a number of important advantages in business and industrial applications:

Remote Monitoring and Control

IoT remote access devices provide users with remote monitoring and control.
This makes it easier to effectively manage devices and processes, monitor the situation and intervene when necessary.

Productivity Increase

Remote access enables businesses to manage processes and devices more efficiently. With remote monitoring, businesses can use real-time data and optimize their operations more effectively.

Cost Savings

Remote monitoring reduces the need to travel to physical locations, lowers maintenance costs, and achieves cost savings by focusing on factors like energy efficiency.

Remote Maintenance and Update

Remote maintenance and updates via IoT devices extend the lifespan of products and improve their performance. This ensures that hardware and software remain up-to-date.

Enhanced Security

IoT remote access devices can enhance security and protect against unauthorized access and increase data security.

Better Data Analytics

Remote access offers rich data sources for big data and analytics applications. This helps businesses to better understand data and make strategic decisions.

Immediate Action

Remote access enables immediate action when issues are detected, minimizing system failures and enhancing operational continuity.

Competitive Advantage

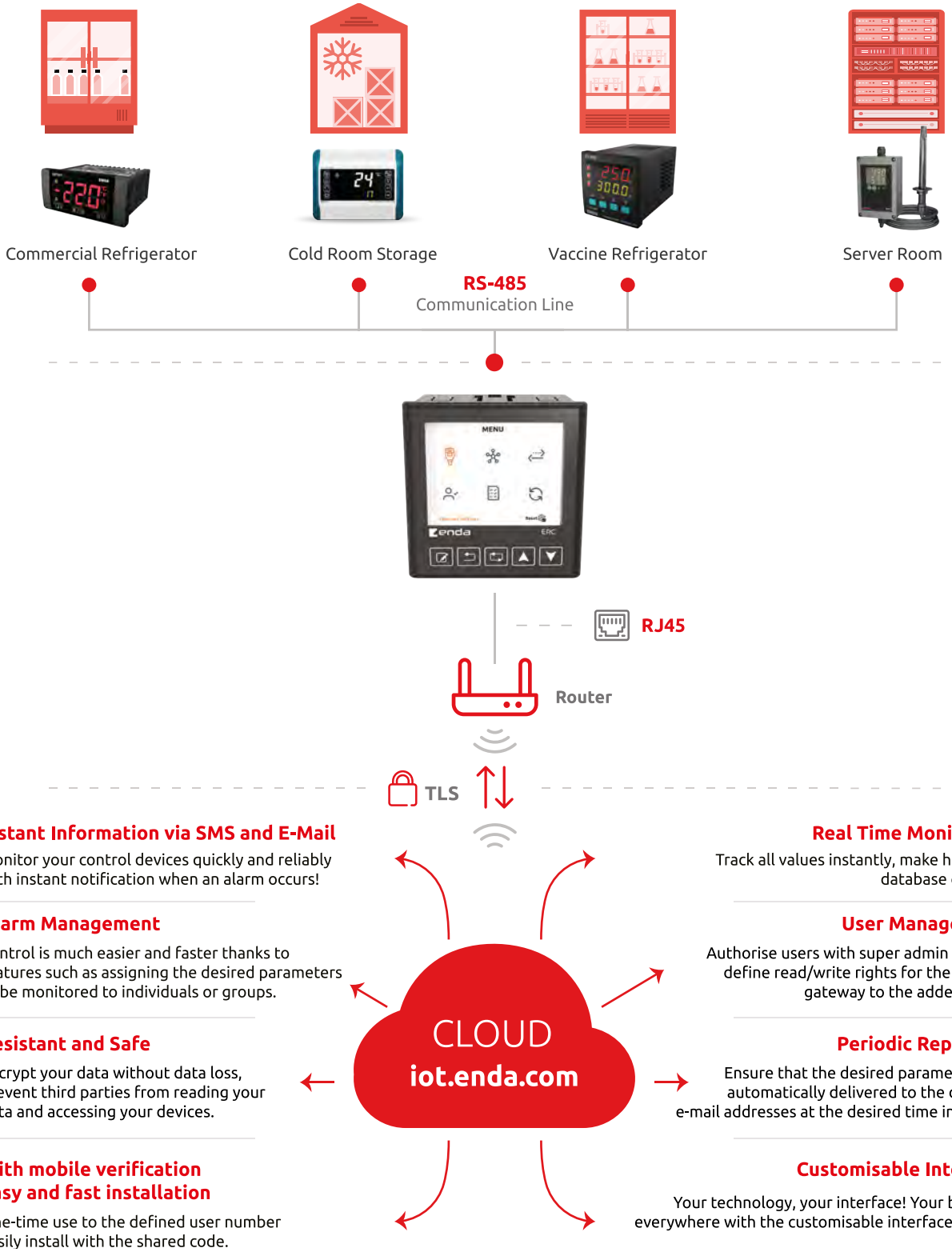
Businesses can gain a competitive advantage by using IoT remote access technologies. Faster response times increase customer satisfaction and strengthen their market position.

Ability to Invest in the Future

IoT is an area of technology that is continuously evolving. Remote access devices can help businesses adapt to future technological developments.

Meet the ENDA Ecosystem:
Gain Control, Boost Efficiency!

As ENDA, we've taken a step that allows you to create your own unique ecosystem! Now you can manage, monitor, and control up to 10 devices from a single center with ENDA Ecosystem.



Instant Information via SMS and E-Mail

Monitor your control devices quickly and reliably with instant notification when an alarm occurs!

Alarm Management

Control is much easier and faster thanks to features such as assigning the desired parameters to be monitored to individuals or groups.

Resistant and Safe

Encrypt your data without data loss, prevent third parties from reading your data and accessing your devices.

With mobile verification easy and fast installation

One-time use to the defined user number Easily install with the shared code.

Real Time Monitoring

Track all values instantly, make historical database queries.

User Management

Authorise users with super admin control, define read/write rights for the desired gateway to the added users.

Periodic Reporting

Ensure that the desired parameters are automatically delivered to the defined e-mail addresses at the desired time intervals.

Customisable Interface

Your technology, your interface! Your brand is everywhere with the customisable interface option.

With ENDA's Cloud-Based Solution
Control All Gateways from a Single Point!

The feature to monitor all paired gateways from a single page is **seamlessly integrated with ENDA's cloud application, iot.enda.com, offering industrial automation solutions.** This integration provides a streamlined and efficient way to manage and observe gateway activity within the ecosystem.

Gateways developed with cloud technology **allow users to assign multiple gateways to defined email addresses via iot.enda.com**This enables users to control and manage multiple devices simultaneously.

Utilize our cloud application, iot.enda.com, to efficiently monitor and optimize your network administrators. **Experience the unique benefits of ENDA in industrial automation.**

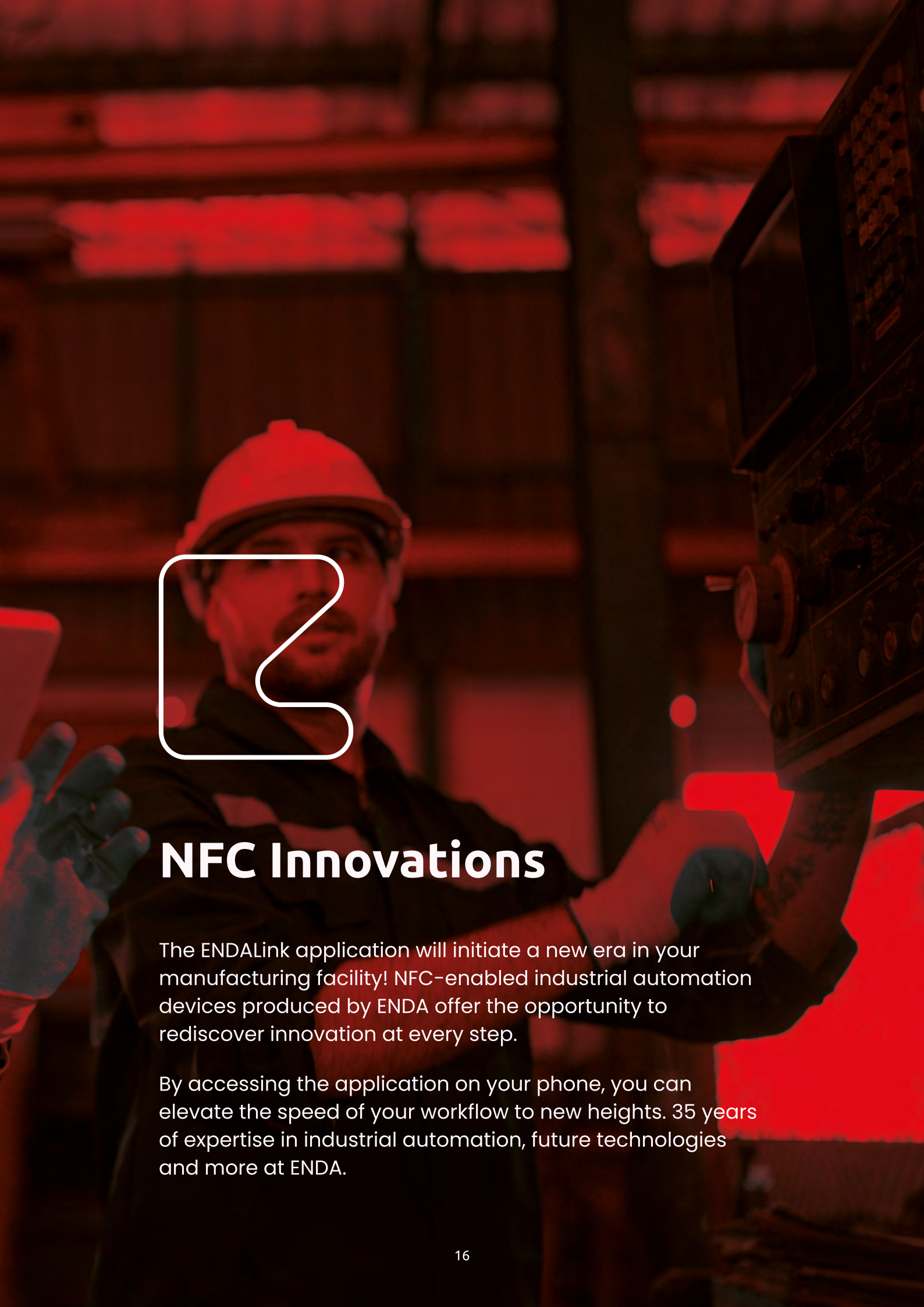
ENDA ERC

Programmable Remote Controller

- Size 96x96
- 3.5-inch TFT screen
- Configurable IP address, NetMask, Gateway, and DNS
- Configurable Baudrate and Parity for RS485 connection
- Capability to connect up to 10 slave devices via RS485
- Ability to add desired queries for connected slave devices

Electrical Specifications	
Supply Voltage	90-250V AC, 50/60Hz
Power Consumption	Maximum 7VA
Connection	2.5mm² terminal blocks
EMC	EN 61326-1: 2013
Safety Requirements	EN 61010-1: 2010 (Pollution degree 2, overvoltage category II)

Enclosure	
Operating/Storage Temperature	0 ... +50°C/-25 ... 70°C
Relative Humidity	Works at up to 80% at 31°C, decreasing linearly to 50% at 40°C
Protection Class	According to EN 60529 standard; **Front panel:** IP65, **Rear panel:** IP20
Height	Up to 20m



NFC Innovations

The ENDALink application will initiate a new era in your manufacturing facility! NFC-enabled industrial automation devices produced by ENDA offer the opportunity to rediscover innovation at every step.

By accessing the application on your phone, you can elevate the speed of your workflow to new heights. 35 years of expertise in industrial automation, future technologies and more at ENDA.

NFC

The ENDALink application, which empowers the control capabilities of our NFC-enabled devices, offers the opportunity to experience innovation at every stage of industrial automation! With the application, you can easily set up devices and adjust parameters swiftly. Moreover, ENDALink contributes to saving time and costs by automating manual processes. It enables you to conduct your business without worrying about the data security and integrity of NFC-enabled products. Explore a more flexible and seamless workflow with our range of products equipped with NFC innovation!

Smart Solutions Shaping the Future

ENDA's NFC technology not only meets current needs but also provides solutions for the future. **By enabling integration among smart devices, it allows for easy programming of device parameters from your phone.** Thus, it opens the doors to rapid workflow and next-generation industrial automation.

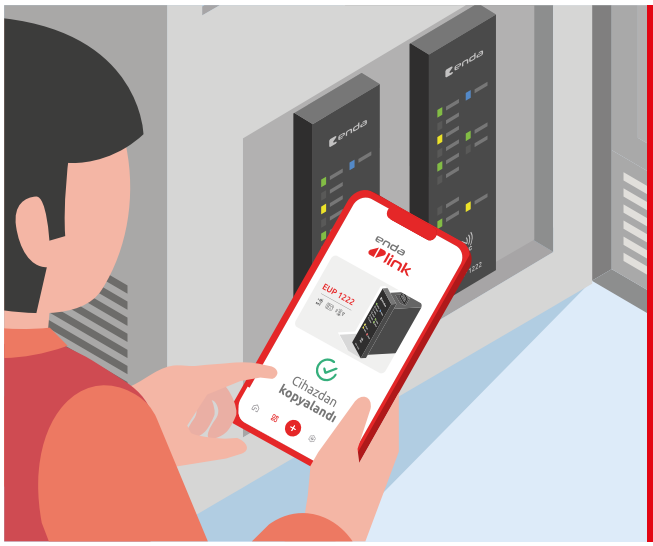
With our 35 years of industrial automation experience, we're propelling businesses into the future; guiding you on your journey to sustainable success by bringing together reliability, speed, and innovation. At ENDA, we offer innovations that will lead your business process to success and smart solutions that will shape the future!

enda link

Tailored solutions for **practical**, **fast**, and **flexible** automation.

Download on the App Store

GET IT ON Google Play



Load from Device With ENDALink

From your phone or tablet, access the entire menu by entering the application and selecting “Load from Device.” This way, you can conveniently program parameters for your devices even when they are connected to electricity or **EVEN WHEN THEY ARE NOT CONNECTED TO ELECTRICITY**. Without waiting for power connection, easily and conveniently program your devices in the field or warehouse.

Load from Record With ENDALink

From the application, you can program and save parameters by tapping on the “Load from Record” option. If needed, you can instantly reload these saved configurations. You can swiftly share device configurations among users using various integrated options such as WhatsApp, SMS, email, and more.

Clone With ENDALink

Rather than programming parameters individually for each device, you can perform this task on one product and clone it to others. Simply scan the device from which you want to retrieve data, then touch the ‘Clone Device’ option. Afterward, you can easily upload the cloned features to another device.

ECOOL 1036

Cold Room Controller

NFC Advantage in Parameter Programming!

The newest member of the Defrost family, Ecool 1036 Touch Screen Cold Room Control Device, has been redesigned with an elegant design for commercial and industrial cooling areas.

On page 52!

EUP1222

Rail Mounted and NFC Supported Universal PID Control Device

NFC Revolution in Screenless Devices!

The EUP1222 Universal PID Control Device offers speed and ease of use by allowing you to easily program parameters with NFC technology.

On page 35!

Cooling Technology Innovations

We are constantly pursuing innovation in cooling technologies and providing unique solutions. Especially through OEM production, we develop custom cooling systems tailored to every need.

With advancing technology and changing needs, we go beyond standard solutions and meet our customers' specific requirements. Through split structure power cards and screen options, we are opening the doors to a new era in cooling systems.

Innovation with ENDA Cooling Technologies
ESDC Series

Custom and Creative Cooling Solutions:
Tailored to Every Need with OEM Manufacturing!

With evolving technology and changing needs, the demands in the cooling industry are becoming increasingly diverse and specialized. This is where OEM manufacturing comes into play.

It enables the development of custom cooling systems tailored to the specific needs of the customer, going beyond standard solutions. **This approach provides an excellent opportunity to meet industry-specific demands, increase efficiency, and gain a competitive advantage.**

Innovation in Cooling Systems:
Power Card and Display Options in Split Configuration

The updates in ENDA's cooling technologies offer the opportunity to evolve into more effective and manageable systems with split configuration power cards and display options. **Innovative in its design, attention is drawn to its practical solutions for user-friendly experience and effective system management. Additionally, this solution, customizable with various display options, adapts to your needs.**

Stronger Communication with Intelligent Connections, Smarter Solutions: Possible with ENDA

ENDA's devices in split configuration are designed to adapt to today's rapidly changing work environments. These systems are equipped with smart connection options like WiFi and Bluetooth, helping businesses to be smarter and more efficient. **This facilitates remote monitoring, control, and data sharing, enabling businesses to operate smarter and more effectively.**

As ENDA, we aim for excellence in cooling systems with our split configuration power cards and display devices. This customer-centric design provides an ideal solution for businesses seeking reliability, efficiency, and ease of use. **Experience ENDA's innovative technology and stay one step ahead in the future of cooling solutions.**

Convenience of connectivity with WiFi and Bluetooth!

Periodic timing feature with real-time clock!

SPLIT

Custom solutions with separately mountable display and power card!

Technical Specifications:

- On-Off cooling control
- 4 relay outputs for compressor, defrost, fan, and aux
- 3 NTC probe inputs for cabinet, evaporator, and condenser
- Offset adjustments can be made for NTC probe inputs
- 2 digital inputs for door control and multifunctional control
- Adjustable upper and lower limits for set value
- Settings for compressor operation, stoppage, or periodic operation in case of probe malfunctions
- Time-dependent or manual defrost can be performed based on time and evaporator temperature
- Adjustable upper and lower alarm limits dependent on set value
- Capability to store up to 3 HACCP alarm records
- Communication feature with RS485 Modbus RTU protocol
- Parameter transfer capability with ENDAKEY-RF

MODEL	ESDC4334	ESDC3034	ESDC8034
Display	4.3” Touchscreen	3 Digits	4 Digits
Dimensions (mm)	120x80x66	75x33x39,5	120x80x66
Temperature Range	-60...+150°C(-76...+302.0°F)		
Power Supply	230V AC, 50/60Hz		
Compressor Relay Output	16A/250V AC, (NO)		
Defrost Relay Output	8A/250V AC, (NO+NC) 0-10V		
Fan Relay Output	10A/250V AC, (NO)		
Auxiliary (AUX) Relay Output	5A/250V AC, (NO)		
Control Form	On-Off		

ESC21

Defrost Controller

Next Generation Touchscreen Defrost Controller

With ESC21's cooling and heating control options, achieving the desired temperature is very easy. Control can be either time-dependent or manual, based on time and evaporator temperature, putting you in control.

On page 49!

Technical Specifications

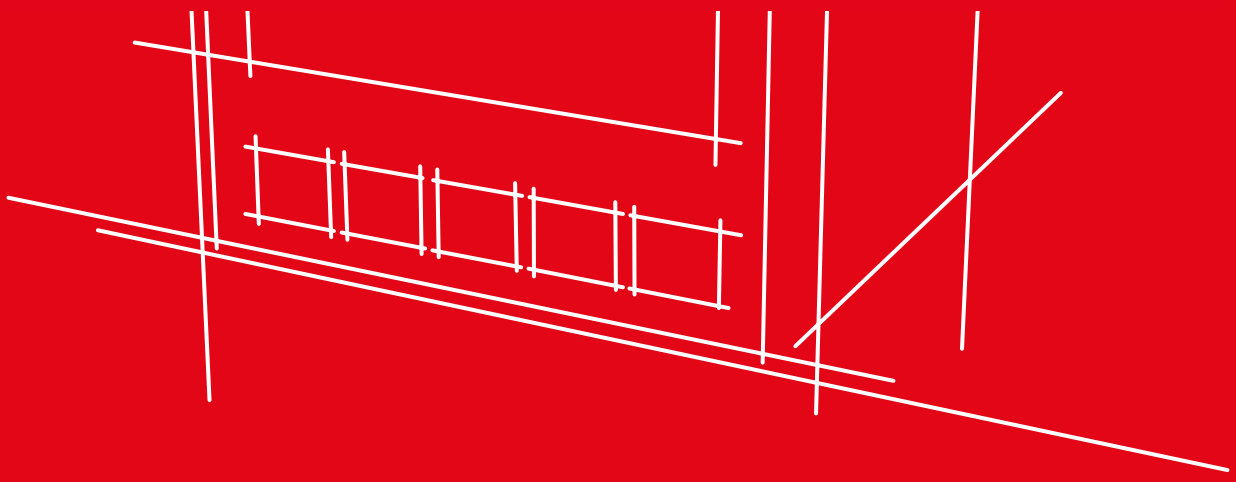
- Cooling or heating control selection
- Control of compressor, energy saving, or door alarm with digital input
- Ability to use digital input as 2nd NTC input
- Offset adjustments for NTC probe inputs
- Time-dependent or manual defrost feature based on time and evaporator temperature
- Adjustable upper and lower limits for set value
- Ability to display temperature unit in °F or °C
- Smart defrost feature
- Delay and minimum operating time settings for compressor protection
- Defrost time and interval settings
- CE marked according to EN standards

Electrical Specifications	
Supply Voltage	230V AC +%10 - %15, 50/60Hz
Power Consumption	Max 0.65VA
Connection	2.5mm² terminal
Line Resistance	Max 100ohm
Safety Requirements	EN 61010-1: 2001 (Pollution degree 2, overvoltage category II)

Environmental Specifications	
Ambient/storage temperature	0 ... +50°C/-25 ... 70°C (without frosting)
Relative humidity	Operates at up to 80% humidity at 31°C, then decreases linearly and operates at 50% humidity at 40°C.
Protection Class	According to EN 60529 standard; **Front panel**: IP65, **Rear panel:** IP20
Altitude	Up to 2000m

Enclosure	
Mounting Type	Snap-fits into panel (according to DIN 43 700)
Dimensions	W77 x H33 x D41mm
Weight	Approximately 90 grams (Packaged)
Enclosure Materials	Self-extinguishing plastics are used.

PRODUCT GROUPS



Temperature Controllers

Digital PID - Digital On-Off - Modular PID - Analog

Ensure the measurement and control of the existing temperature value to reach the appropriate temperature for a process or environment with temperature control devices.

On-Off and PID control, selectable input types, relay, alarm, and SSR outputs, selectable heating and cooling controls, various power supply options, Modbus RTU RS-485 communication, and more features at ENDA!

Digital PID

Temperature Controllers

MODEL	ET401	ET4402	ET4420	ET7420
Dimensions (mm)	W48xH48xD53		W48xH48xD87	W72xH72xD97
Temperature Display	3 Digits		4 Digits	
Set Display			4 Digits	
Input Type	TC		PT100 and TC	
Temperature Range	J, -30...600°C K, -30...999°C L, -30...600°C		PT 100, -199.9...600.0°C PT 100, -200...600°C J, -30.0...600.0°C J, -30...600°C K, -30.0...999.9°C K, -30...1300°C	L, -30.0...600.0°C L, -30...600°C T, -30.0...400.0°C T, -30…400°C S, -40...1700°C R, -40...1700°C
°C/°F Selection	Available			
Heating/Cooling Selection	-	Available		
Power Supply	230V AC 50/60Hz or 10-30V DC / 8-24V AC SMPS *			
Connection Type	Socket Terminal			
Mounting Type	Panel Mount			
Control Output	SSR	Relay, 5A (NO) If control output is selected as SSR output, this relay can be used as Alarm2 output	Relay, 8A (NO+NC) If control output is selected as SSR output, this relay can be used as Alarm2 output	
Alarm Output	-	Relay, 5A (NO)	Relay, 8A (NO or NC selectable)	
SSR Output	12V, 20mA		24V, 20mA	
Control Form	On-Off / P, PI, PD, PID			
Digital Input	Contact Input	-	Contact Input	
Communication	-		RS485 ModBus *	

The prices do not vary among the different supply voltages.
Additional cost: The price difference for products with RS485 communication is +14 USD.
* Must be specified in the order.

Order Code:

☐☐☐☐☐☐ ☐☐☐ ☐☐

1 2 3

1 - Product Base Code

48x48 mm Digital Thermostat	ET4420
72x72 mm Digital Thermostat	ET7420
48x48 mm Hot Runner Control Device	ET401
48x48 mm Digital Thermostat	ET4402

Sample Order Code: **ET4420-230-RS | ET401-230**

2 - Supply Voltage

230VAC	230
10-30V DC/8-24V AC	LV

3 - Communication (only for ET4420 and ET7420)

RS485 ModBus	RS
None	

MODEL	ET8420	ET9420	ET2011	ET5011
Dimensions (mm)	W48xH96xD87	W96xH96xD50	W77xH35xD61	W54xH94xD68
Temperature Display	4 Digits			
Set Display	4 Digits		-	
Input Type	PT100 and TC		PT100 and TC *	PT100
Temperature Range	PT 100, -199.9...600.0°C PT 100, -200...600°C J, -30.0...600.0°C J, -30...600°C K, -30.0...999.9°C K, -30...1300°C	L, -30.0...600.0°C L, -30...600°C T, -30.0...400.0°C T, -30…400°C S, -40...1700°C R, -40...1700°C	PT 100, -99.9...300.0°C PT 100, -200...600°C J, 0…600°C K, 0...1300°C T, 0...400°C S, 0...1700°C	PT 100, -99.9...300.0°C PT 100, -200...600°C
°C/°F Selection	Available			
Heating/Cooling Selection	-	Available		
Power Supply	230V AC 50/60Hz or 10-30V DC / 8-24V AC SMPS *			
Connection Type	Socket Terminal			Terminal
Mounting Type	Panel Mount			Rail Mount
Control Output	Relay, 8A (NO+NC) If control output is selected as SSR output, this relay can be used as Alarm2 output			Relay, 8A (NO+NC)
Alarm Output				-
SSR Output	24V, 20mA		12V, 20mA	-
Control Form	On-Off / P, PI, PD, PID			
Digital input	Contact input		-	
Communication	RS485 ModBus *		-	

The prices do not vary among the different supply voltages.
Additional cost: The price difference for products with RS485 communication is +14 USD.
* Must be specified in the order.

Order Code:

1 2 3

1 - Product Base Code	
48x96 mm Digital Thermostat	ET8420
96x96 mm Digital Thermostat	ET9420
48x48 mm Digital Thermostat	ET2011
48x48 mm Digital Thermostat	ET5011

2 - Supply Voltage	
230VAC	230
10-30V DC/8-24V AC	LV

3 - Communication (only for ET4420 and ET7420)	
RS485 ModBus	RS
None	

4 - Input Type (only for ET2011 and ET5011)	
PT100 Input	RT
Thermocouple Input (Only for ET2011)	T

Sample Order Code: **ET8420-230-RS | ET2011-230-RT**

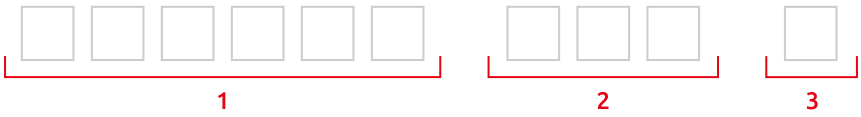
Digital On-Off

Temperature Controllers

MODEL	ET2001	ET2411	ET2412	ET5411	ET5412	ET4403
Dimensions (mm)	W77xH35xD61			W54xH94xD68		W48xH48xD53
Temperature Display	4 digits					3 digits
Set Display	-					
Input Type	TC	NTC				PT100
Temperature Range	-30...400°C	-60.0...150.0°C				0...700°C
°C/°F Selection	-	Available				-
Heating/Cooling Selection	Available					-
Power Supply	230V AC 50/60Hz or 10-30V DC / 8-24V AC SMPS *					
Connection Type	Terminal					Socket Terminal
Mounting Type	Panel Mount			Rail Mount		Panel Mount
Control Output	Relay, 8A (NO+NC)				Relay, 8A (NO)	Relay, 5A (NO)
Alarm Output	-	Relay, 8A (NO)		-	Relay, 8A (NO+NC)	-
Control Form	On-Off					
Communication	-			RS485 ModBus *		-

The prices do not vary among the different supply voltages.
Additional cost: The price difference for products with RS485 communication is +14 USD.
* Must be specified in the order.

Order Code:



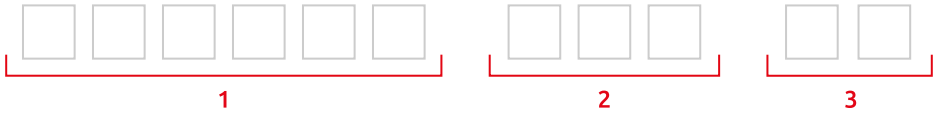
1 - Product Base Code	
77x35 mm Digital Thermostat	ET2001
77x35 mm Digital Thermostat	ET2411
77x35 mm Digital Thermostat + Alarm	ET2412
48x48 mm Digital Thermostat	ET4403

2 - Supply Voltage	
230VAC	230
10-30V DC/8-24V AC	LV

3 - Input Type	
Thermocouple Input (Only for ET2001)	J
Yok	

Sample Order Code: **ET2411-230**

Order Code:



1 - Product Base Code	
Rail Mount Digital Thermostat	ET5411
Rail Mount Digital Thermostat + Alarm	ET5412

2 - Supply Voltage	
230VAC	230
10-30V DC/8-24V AC	LV

3 - Communication	
RS485 ModBus	RS
None	

Sample Order Code: **ET5411-230-RS**

Modular PID

Temperature Controllers

MODEL	ET1124A	EUP1222
		NEW
Dimensions (mm)	W29xH90xD64 Mountable on TH35 type rail	W22.5xH96xD86 Mountable on TH35 type rail
Display	-	
NFC	-	Available
Input Type	4 x TC or 4 x PT 100 *	PT 100, TC, 0/4-20mA, 0/25-50mV ve 0/2-10V
Temperature Range	PT 100, -199.9 … 600.0°C PT 100, -200 … 600°C J, -30.0 … 600.0°C J, -30 … 600°C K, -30.0 … 999.9°C K, -30 … 1300°C	L, -30.0 … 600.0°C L, -30 … 600°C T, -30.0 … 400.0°C T, -30 … 400°C S, -40 … 1700°C R, -40 … 1700°C
Measurement Range	-	0-20mA, -10000…+10000 4-20mA, -10000...+10000 0-10V, -10000...+10000 2-10V, -10000...+10000 0-25mV, -10000...+10000 0-50mV, -10000...+10000
°C/ ° F Selection	Available	
Heating/Cooling Selection	Available	
Power Supply	24V DC	
Connection Type	Socket Terminal	
Mounting Type	Rail Mounting	
Control Output	4-channel SSR	Relay, 2A (NO) When selected as SSR output, this relay can be used as Alarm2 output
Alarm Output	-	Relay, 2A (NO or NC selectable)
SSR Output	15V, 20 mA	
Analog Output	-	0/4-20mA, 0/2-10V
Control Form	On-Off / P, PI, PD, PID	
Profile Control	-	Profile control can be performed up to 16 steps
Digital Input	-	Contact input
Communication	RS485 ModBus	

There is no price difference among input types.
* Must be specified when ordering

Order Code:

Product Base Code	
4-Channel Rail Mount PID Control Device	ET1124A (TC Input)
4-Channel Rail Mount PID Control Device	ET1124A-RT (PT100 Input)
NFC-equipped Rail Mount Universal PID Control	EUP1222

Analog

Temperature Controllers

MODEL	AT411	ATC9311
Dimensions (mm)	W48xH48xD82	W96xH96xD50
Temperature Display	-	3 digits
Input Type	PT-100 or TC * TC *	TC
Temperature Range	PT 100, 0…400°C J, 0…200°C J, 0…300°C J, 0…400°C K, 0…400°C	J, 0...400°C K, 0...400°C
Power Supply	230V AC 50/60Hz or 10-30V DC / 8-24V AC SMPS *	
Connection Type	Type 8-pin Octal Socket or Socketed Terminal	Socketed Terminal
Control Output	Relay, 3A (NO+NC)	Relay, 8A (NO+NC)
Control Form	On-Off or time proportional	

There is no price difference among input types.
* Must be specified when ordering

Order Code:

1	2	3	4
□□□□□□□	□□□	□□□	□□□□□

1 - Product Base Code:	
48x48 mm Analog Thermostat	AT411
96x96 mm Analog Thermostat	ATC9311

2 - Supply Voltage:	
230VAC	230
10-30V DC/8-24V AC	LV

3 - Connection Type (Only for AT411)	
Terminal	K07
8 Pin Socket (Only for Fe-const input)	S08

4 - Sensor Type (Only for AT411)	
Fe-Const 400 °C	FE400
PT100 400 °C	RT400

Sample Order Code for AT411: **AT411-230-K07-FE400** | Sample Order Code for ATC9311: **ATC9311-LV**

Process Measurement and Control Devices

Discover ENDA measurement devices that provide reliable data to control mechanisms. Equipped with On-Off, PID, and profile control features, they offer flexible use with selectable universal input types, extensive compatibility with relay, alarm, and SSR outputs, precise adjustment with analog control outputs, integration capability with Modbus RTU RS-485 communication, wide range of use with external sensor power supply, and more!

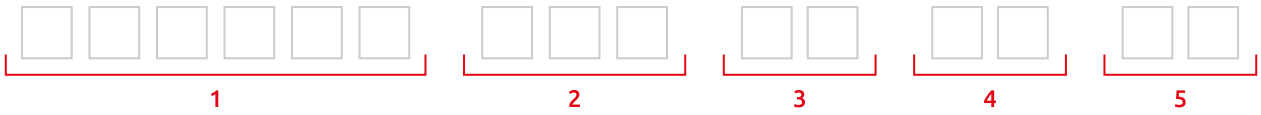
Indicators

Process Measurement and Control Devices

MODEL	**EI4430**	**EI2041**	**EI7041**
Dimensions (mm)	G48xY48xD87	G77xY35xD61	G72xY72xD97
Display	4 digits		
Input Type	0-1V DC,0-10V DC, 0-20mA DC and 4-20mA DC		
Scale Range	Adjustable between -1999 to 9999		
Data Hold	-	Maximum and minimum measured values can be stored in the device memory and displayed on the indicator.	
Control Output	-	Relay, 8A (NO)*	
Alarm Output	-	Relay, 8A (NO) *	
Control Form	-	On-Off	
Power Supply	230V AC 50/60Hz or 10-30V DC/8-24V AC SMPS *		
Connection Type	Socket Terminal	Terminal	Socket Terminal
Sensor Power Supply	-	12V DC, 24V DC, 50 mA *	
Communication	-	RS485 Modbus *	

There is no price difference between supply voltages.
* Must be specified when ordering

Order Code:



1 - Product Base Code	
77x35 mm Programmable Display	EI2041
72x72 mm Programmable Display	EI7041

2 - Power Supply Voltage	
230VAC	230
10-30V DC/8-24V AC	LV

3 - Relay Output	
Relay + Alarm Output	2R
None	

4 - Communication	
RS485 ModBus	RS
None	

5 - Sensor Power Output	
12V DC	12
24V DC	24
None	

Sample Order Code: **EI2041-230-2R-RS-24**

Order Code:

1 - Product Base Code	
48x48 mm Programmable Display	EI4430

2 - Power Supply Voltage	
230VAC	230
10-30V DC/8-24V AC	LV

Sample Order Code: **EI4430-LV**

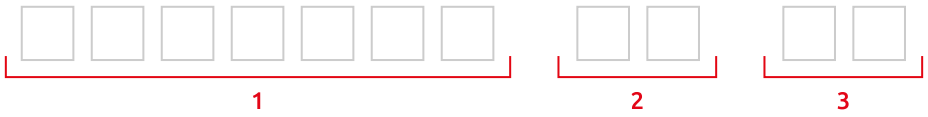
Universal and Profile

Process Measurement and Control Devices

MODEL	EPC9513	EUP4420	EUP7420	EUP8420	EUP9420
Dimensions (mm)	W96xH96xD81	W48xH48xD87	W72xH72xD97	W48xH96xD87	W96xH96xD50
Temperature	5 Digit 3.5" TFT Graphic Display 4 Digits	4 Digits			
Timer Display					
Input Type	PT100, TC, NTC, R, mA, V or mV	PT 100, TC, 0/4-20mA, 0/2-10V,0-25/50mV			
Temperature	PT 100, -200.0…850.0°C B, 200.0…1800.0°C E, -100.0…900.0°C J, -100.0…900.0°C K, -100.0…1300.0°C L, -100.0…900.0°C N, -200.0…1300.0°C R, 0.0…1700.0°C S, 0.0…1700.0°C T, -250.0…300.0°C U, -200.0…400.0°C NTC, -60.0...150.0°C	PT 100, -199.9...600.0°C PT 100, -200...600°C J, -30.0...600.0°C J, -30...600°C K, -30.0...999.9°C K, -30...1300°C L, -30.0...600.0°C L, -30...600°C T, -30.0...400.0°C T, -30…400°C S, -40...1700°C R, -40...1700°C			
Measurement Range	mA: 0-20mA, 4-20mA mV: 0-150mV V: 0-5V, 1-5V, 0-10V Ω: 0-550Ω, 0-10 kΩ 2-32768 … 32767 -3276,8 … 3276,7 -327,68 … 327,67 -32,768 … 32,767	0-20mA, -1999...+9999 4-20mA, -1999...+9999 0-10V, -1999...+9999 2-10V, -1999...+9999 0-25mV, -1999...+9999 0-50mV, -1999...+9999			
°C/°F Selection	Available				
Heating/Cooling Selection	Available				
Power Supply	90-250V AC, 50/60Hz	90-250V AC, 50/60Hz or 10-30V DC / 8-24V AC, 50/60Hz *			
Connection type	Socket Terminal				
Control Output	Relay, 10A (NO+NC) When selected as SSR output, can be used as Alarm3 output.	Relay, 8A (NO+NC) When selected as SSR output, this relay can be used as Alarm2 output.			
Alarm Output	Alarm 1: Relay, 10A (NO+NC) Alarm 2: Relay,10A (NO)	Relay, 8A (NO or NC selectable)			
SSR Output	12V, 40mA	24V, 20mA			
Analog Output	0/4-20mA, 0-10V	0/4-20mA			
Control Form	On-Off / P, PI, PD, PID				
Profile Control	8-step and 16-program profile control available	Up to 16-step programmed profile control available			
Communication	RS485 Modbus	RS485 Modbus *			

There is no price difference between the supply voltages.
* Must be specified when ordering.

Order Code:



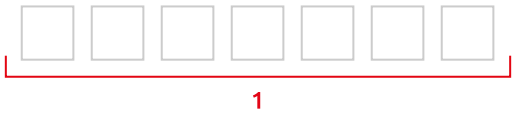
1 - Product Base Code	
48x48 mm Universal Profile Control Device	EUP4420
72x72 mm Universal Profile Control Device	EUP7420
48x96 mm Universal Profile Control Device	EUP8420
48x96 mm Universal Profile Control Device	EUP9420

2 - Power Supply Voltage	
90-250VAC	UV
10-30V DC/8-24V AC	LV

3 - Communication	
RS485 ModBus	RS
None	

Sample Order Code: **EUP4420-UV-RS**

Order Code:



1 - Product Base Code	
96x96 mm Advanced Level Universal Profile Control Device	EPC9513

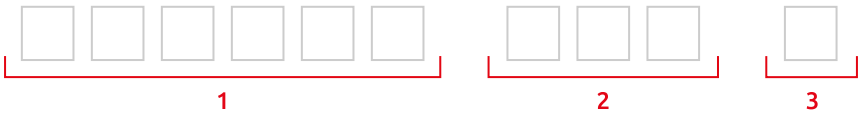
Universal

Process Measurement and Control Devices

MODEL	EUC9526	EU4430	EU2011
			NEW
Dimensions (mm)	W96xH96xD81	W48xH48xD87	W77xH35xD71
Measurement Display	5 Digits 3.5" TFT Graphic Display	4 Digits LCD	
Set Display			
Input Type	2 x PT100, TC, NTC, R, mA, V or mV	PT100, TC, 0/4-20 mA, 0/2-10V, 0-25mV	0-20mA / 4-20mA / 0-10V
Temperature Range	PT 100, -200.0…850.0°C B, 200.0…1800.0°C E, -100.0…900.0°C J, -100.0…900.0°C K, -100.0…1300.0°C L, -100.0…900.0°C N, -200.0…1300.0°C R, 0.0…1700.0°C S, 0.0…1700.0°C T, -250.0…300.0°C U, -200.0…400.0°C NTC, -60.0...150.0°C	PT 100, -199.9...600.0°C PT 100, -200...600°C J, -30.0...600.0°C J, -30...600°C K, -30.0...999.9°C K, -30...1300°C L, -30.0...600.0°C L, -30...600°C T, -30.0...400.0°C T, -30…400°C S, -40...1700°C R, -40...1700°C	-
Measurement Range	mA: 0-20mA, 4-20mA mV: 0-150mV V: 0-5V, 1-5V, 0-10V Ω: 0-550Ω, 0-10 kΩ -32768 … 32767 -3276,8 … 3276,7 -327,68 … 327,67 -32,768 … 32,767	0-20mA, -1999 … +9999 4-20mA, -1999 … +9999 0-10V, -1999 … +9999 2-10V, -1999 … +9999 0-25mV -1999 … +9999 0-50mV, -1999 … +9999	0-20mA, -1999 … +9999 4-20mA, -1999 … +9999 0-10V, -1999 … +9999
°C/°F Selection	Available		
Heating/Cooling	Available		
Power Supply	90-250V AC, 50/60Hz	90-250V AC, 50/60Hz or 10-30V DC / 8-24V AC, 50/60Hz *	
Connection Type	Socket Terminal		
Control Output	Relay, 10A (NO+NC) When selected as SSR output, can be used as Alarm3 output.	Relay, 8A (NO+NC) When selected as SSR output, this relay can be used as Alarm2 output.	Analog Output
Alarm Output	Alarm 1: Relay, 10A (NO+NC) Alarm 2: Relay,10A (NO)	Relay, 8A (NO or NC selectable)	-
SSR Output	12V, 40mA	24V, 20mA	-
Analog Output	0/4-20mA, 0-10V	0/4-20mA	0-20mA / 4-20mA / 0-10V
Control Form	On-Off / P, PI, PD, PID		P, PI, PD, PID
Communication	RS485 ModBus	RS485 ModBus *	

There is no price difference between the supply voltages.
* Must be specified when ordering.

Order Code:



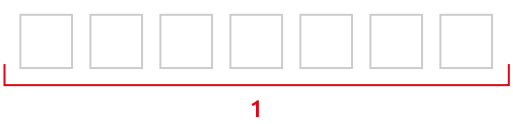
1 - Product Base Code	
48x48 mm Universal Control Device	EU4430
77x35 mm Universal Control Device	EU2011

2 - Power Supply Voltage	
90-250VAC	UV
10-30V DC/8-24V AC	LV

3 - Communication	
RS485 ModBus	RS
None	

Sample Order Code: **EU4430-UV-RS**

Order Code:



1 - Product Base Code	
96x96 mm Advanced Level Universal Control Device	EUC9526

Modular

Process Measurement and Control Devices

MODEL	EUP1122
Dimensions (mm)	W29xH90xD64, mounts on TH35 type rail
NFC	-
Input Type	PT 100, TC, 0/4-20mA, 0/25-50mV ve 0/2-10V
Temperature Range	PT 100, -199.9 … 600.0°C PT 100, -200 … 600°C J, -30.0 … 600.0°C J, -30 … 600°C K, -30.0 … 999.9°C K, -30 … 1300°C L, -30.0 … 600.0°C L, -30 … 600°C T, -30.0 … 400.0°C T, -30 … 400°C S, -40 … 1700°C R, -40 … 1700°C
Measurement Range	0-20mA, -10000…+10000 4-20mA, -10000...+10000 0-10V, -10000...+10000 2-10V, -10000...+10000 0-25mV, -10000...+10000 0-50mV, -10000...+10000
°C/°F Selection	Available
Heating/Cooling Selection	Available
Power Supply	24V DC
Connection Type	Socket Terminal
Mounting Style	Rail Mount
Control Output	Relay, 5A (NO) - Can be used as Alarm2 output when selected as SSR output
Alarm Output	Relay, 5A (NO or NC selectable)
SSR Output	15V, 20 mA
Analog Output	0/4-20mA, 0/2-10V
Control Form	On-Off / P, PI, PD, PID
Profile Control	Up to 16 steps profile control
Digital Input	Contact Input
Communication	RS485 ModBus

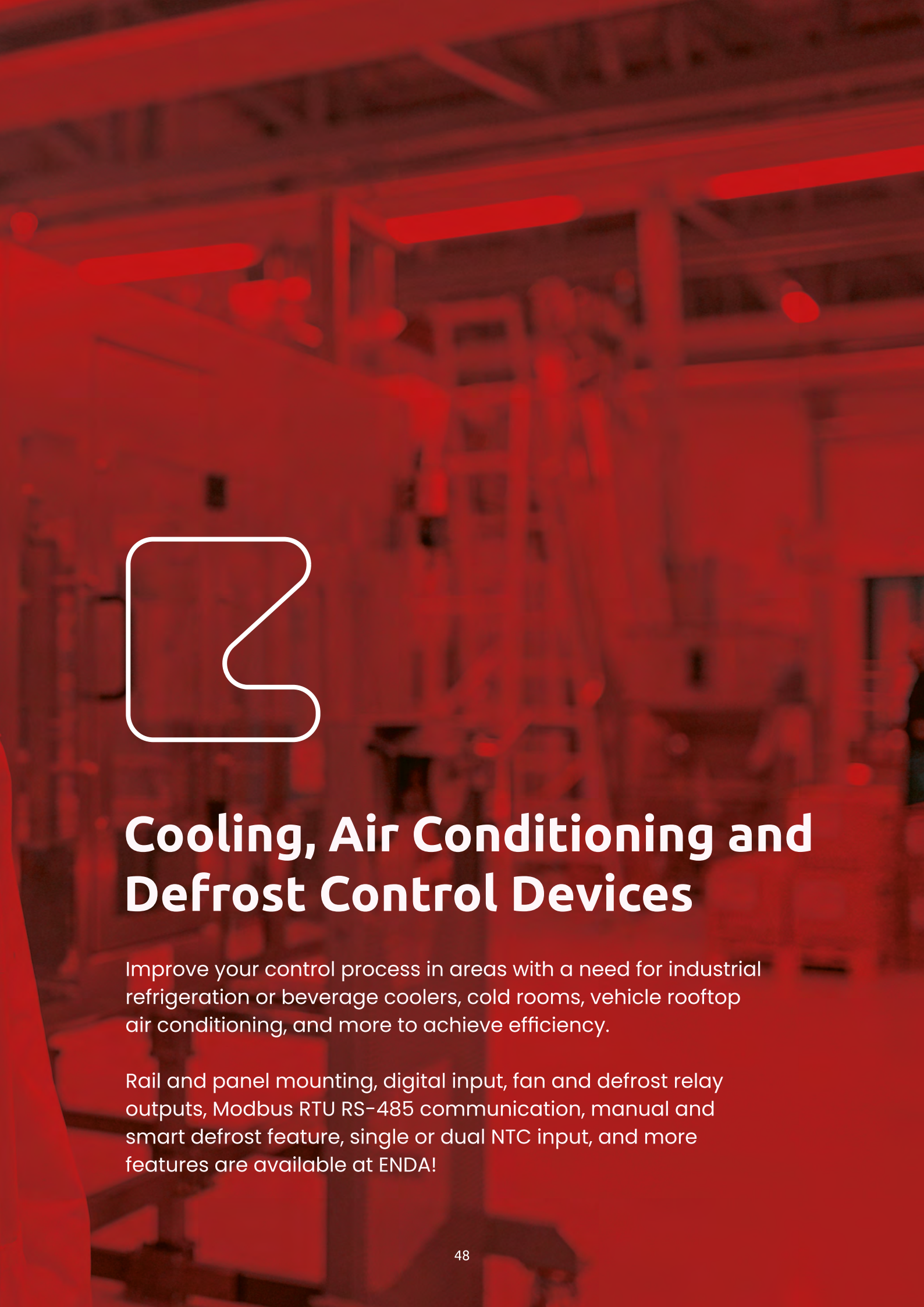
Order Code:

Product Base Code	
Rail Mount PID Control Device	EUP1122

MODEL	NEW EUP1222
Dimensions (mm)	W22.5xH96xD86, mounts on TH35 type rail
NFC	Available
Input Type	PT 100, TC, 0/4-20mA, 0/25-50mV and 0/2-10V
Temperature Range	PT 100, -199.9 … 600.0°C PT 100, -200 … 600°C J, -30.0 … 600.0°C J, -30 … 600°C K, -30.0 … 999.9°C K, -30 … 1300°C L, -30.0 … 600.0°C L, -30 … 600°C T, -30.0 … 400.0°C T, -30 … 400°C S, -40 … 1700°C R, -40 … 1700°C
Measurement Range	0-20mA, -10000…+10000 4-20mA, -10000...+10000 0-10V, -10000...+10000 2-10V, -10000...+10000 0-25mV, -10000...+10000 0-50mV, -10000...+10000
°C/°F Selection	Available
Heating/Cooling Selection	Available
Power Supply	24V DC
Connection Type	Socket Terminal
Mounting Style	Rail Mount
Control Output	Relay, 2A (NO) - Can be used as Alarm2 output when selected as SSR output
Alarm Output	Relay, 2A (NO or NC selectable)
SSR Output	15V, 20 mA
Analog Output	0/4-20mA, 0/2-10V
Control Form	On-Off / P, PI, PD, PID
Profile Control	Up to 16 steps profile control
Digital Input	Contact Input
Communication	RS485 ModBus

Order Code:

Product Base Code	
Rail Mount Universal PID Controller with NFC	EUP1222



Cooling, Air Conditioning and Defrost Control Devices

Improve your control process in areas with a need for industrial refrigeration or beverage coolers, cold rooms, vehicle rooftop air conditioning, and more to achieve efficiency.

Rail and panel mounting, digital input, fan and defrost relay outputs, Modbus RTU RS-485 communication, manual and smart defrost feature, single or dual NTC input, and more features are available at ENDA!

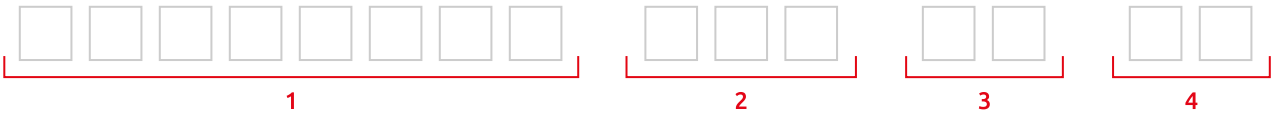
Panel Mounted Defrost Control

Cooling, Air Conditioning and Defrost Control Devices

MODEL	ESC21	EDT3411	EDT3423A
	NEW		
Dimensions (mm)	W77xH33xD40	W75xH35xD61	
Display	3 Digits	4 Digits	
Input Type	1xNTC		2xNTC
Temperature Range	-60…+99	-60…+150	
Heating/Cooling Selection	Available		-
Power Supply	230V AC 50/60Hz or 10-30V DC / 8-24V AC SMPS *		
Connection Type	Terminals		
Mounting Style	Panel Mount		
Compressor Relay Output	16A/250V AC ½ hp (NO+NC)	8A/250V AC, ½ hp (NO+NC) 20A/277V AC, 2 hp (NO) *	8A/250V AC ½ hp (NO)
Lighting/Defrost Relay Output	-		8A/250V AC ½ hp (NO+NC), Can be used as defrost output
Fan Relay Output	-		8A/250V AC ½ hp (NO)
Control Form	On-Off		
Digital Input	Contact Input		
ENDA KEY	-	Parameters can be read from the device or parameters from the ENDAKEY can be loaded into the device without power.	
Communication	-	RS485 ModBus *	

No price difference between supply voltages.
* must be specified in the order

Order Code:



1 - Product Base Code	
Defrost Control Device	EDT3411
Defrost Control Device	EDT3423A

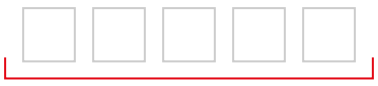
2 - Supply Voltage	
230VAC	230
90-250V AC	UV *
10-30V DC/8-24V AC	LV
* Used only with -RS products..	

3 - Output (Only for EDT3411)	
8 Amp Relay	08
20 Amp Relay	20

4 - Communication	
RS485 ModBus	RS
None	

Sample Order Code: **EDT3411-LV-20** | **EDT3423A-UV-RS**

Order Code:



1 - Product Base Code	
Touchscreen Defrost Control Device	ESC21

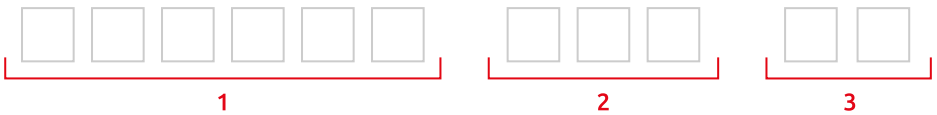
Rail Mounted Defrost Control

Cooling, Air Conditioning, and Defrost Control Devices

MODEL	EDT5411A	EDT5412A
Dimensions (mm)	W54xH94xD68	
Display	4 Digits	
Input Type	NTC	
Temperature Range	-60…+150	
°C/°F Selection	Available	
Heating/Cooling Selection	Available	
Power Supply	230V AC 50/60Hz or 10-30V DC / 8-24V AC SMPS *	
Connection Type	Terminal	
Compressor Relay Output	8A/250V AC, ½ hp (NO+NC) 20A/277V AC, 2 hp (NO) *	8A/250V AC, ½ (NO) hp 20A/277V AC, 2 hp (NO) *
Lighting/Defrost Relay Output	-	8A/250V AC, ½ hp (NO+NC), Can be used as lighting or defrost output
Alarm	Alarm with buzzer	
Control Form	On-Off	
Digital Input	Contact Input	
ENDA KEY	Parameters can be read from the device or parameters from the ENDAKEY can be loaded into the device without power	
Communication	RS485 ModBus *	

No price difference between supply voltages.
* must be specified in the order.

Order Code:



1 - Product Base Code		2 - Supply Voltage		3 - Output		4 - Communication	
Rail Mounted Def. Cont.	EDT5411A	230VAC	230	8 Amp Relay	08	RS485 ModBus	RS
Rail Mounted Def. Cont.	EDT5412A	10-30V DC/8-24V AC	LV	20 Amp Relay	20	None	

Sample Order Code: **EDT5411A-LV-20**

Cold Room Defrost Control

Cooling, Air Conditioning, and Defrost Control Devices

NEW

MODEL	ECOOL 1036
Dimensions (mm)	W230xH180xD66
Temperature Display	4 Digits
Set Display	
Input Type	3xNTC
Temperature Range	-60…+150
°C/°F Selection	Available
Heating/Cooling Selection	-
Power Supply	230V AC 50/60Hz
Connection Type	Socket Terminal
Compressor Relay Output	30A/277V AC, 2 hp (NO)
Defrost Relay Output	16A/250V AC, ½ hp (NO+NC)
Fan Relay Output	16A/250V AC, ½ hp (NO)
Lighting Relay Output	16A/250V AC, ½ hp (NO)
Alarm Relay Output	8A/250V AC, ½ hp (NO+NC)
AUX Relay Output	30A/277V AC, 2 hp (NO)
Control Form	On-Off
Digital Form	Door and Configurable Contact Input
NFC	Available *
Communication	RS485 ModBus

There is no price difference for products with NFC feature.
* must be specified in the order.

Order Code:

☐☐☐☐☐☐ ☐☐☐ ☐☐

1 2 3

1 - Product Base Code	
Cold Room Defrost Device	ECOOL 1036

2 - NFC	
NFC	NFC
None	

Sample Order Code: **ECOOL 1036-NFC**

Vehicle Rooftop Air Conditioning Control Device

Cooling, Air Conditioning, and Defrost Control Devices

MODEL	EAC603	EAC604	EAC605
Dimensions (mm)	W118xH53xD20,5		
Temperature Display	2 Digits		
Set Display	-		
Input Type	1xNTC		
Temperature Range	-5…+50		
Power Supply	10-30 VDC SMPS		
Connection Type	2x2 pin and 2x5 two-piece wafer terminal connectors		
Fan 1	First stage output (Maximum 700mA 12/24V short circuit protected semiconductor output)		
Fan 2	Second stage output (Maximum 700mA 12/24V short circuit protected semiconductor output)		
Fan 3	Third stage output (Maximum 700mA 12/24V short circuit protected semiconductor output)		
Cooling Output *	-	Cooling output (Maximum 700mA 12/24V short circuit protected semiconductor output)	
Heating Output **	-		Heating valve CW output (Maximum 700mA, 12/24V semi-conductor short circuit protection)
Control Form	ON-OFF		

* The EAC604 model must be ordered for cooling output.
** The EAC605 model must be ordered for heating output.

Order Code:

Product Base Code	
3 Output Vehicle Rooftop Air Conditioning Control Device	EAC603
4 Output Vehicle Rooftop Air Conditioning Control Device	EAC604
5 Output Vehicle Rooftop Air Conditioning Control Device	EAC605

OEM

Cooling, Air Conditioning, and Defrost Control Devices

MODEL	ENDH	ENDV
Dimensions (mm)	W156xH48	W80xH99
Display	4 Digits	
Input Type	3xNTC	
Temperature Range	-60…+150	
°C/°F Selection	Available	
Cooling	Available	
Power Supply	90-250V AC 50/60Hz	
Connection Type	Socket Terminal	
Compressor Relay Output	20A/277V AC, 2 hp (NO)	
Defrost Relay Output	8A/250V AC ½ hp (NO+NC)	
Fan Relay Output	8A/250V AC ½ hp (NO)	
AUX Relay Output *	8A/250V AC ½ hp (NO+NC)	
Lighting Relay Output **	8A/250V AC ½ hp (NO+NC)	
Alarm	Alarm with buzzer	
HACCP	Available	
Control Form	On-Off	
Digital Input	Door Control and for multi-functional use 2 digital inputs	
ENDA KEY	Parameters can be read from the device or parameters from the ENDAKEY can be loaded into the device without power.	
Communication	RS485 ModBus	

* Valid for ENDH004 and ENDV004.
** Valid for ENDH005 and ENDV005.

Order Code:

Product Base Code	
Horizontal 3 Output OEM Cooling Card	ENDH003
Horizontal 4 Output OEM Cooling Card	ENDH004
Horizontal 5 Output OEM Cooling Card	ENDH005
Vertical 3 Output OEM Cooling Card	ENDV003
Vertical 4 Output OEM Cooling Card	ENDV004
Vertical 5 Output OEM Cooling Card	ENDV005

Counters and Tachometers

Collect, process, and analyze accurate data in the production process involving factors such as measuring length, count, liters, groups, total counting, revolutions, and speed measurement.

Features include LCD or LED display, PNP/NPN/ENCODER input, single or dual relay/SSR output, 6 or 9 digit counting function, selectable counter or tachometer control, Modbus RTU RS-485 communication, various supply options, and more available at ENDA!

Counters and Tachometers

MODEL	ECH4400	ECH7700
Dimensions (mm)	W48xH48xD87	W72xH72xD97
Display	2x6 Digits LCD	
Counting Input	5 to 30V pulse. PNP, NPN, Encoder (two inputs as CPA and CPB)	
Counting Frequency	40kHz	
Reset Input	5 to 30V pulse	
Counting Type	Forward or Reverse	
Sampling Time	0.2 to 20.0 seconds	
Offset	0 - 500000	
Calibration Value	0,00001 to 99.9999	
Decimal Point	Adjustable between 1st and 5th digi	
Batch Counter	6 Digits	
Total Counter	9 Digits	
Supply	230V AC 50/60Hz or 10-30V DC / 8-24V AC SMPS *	
Connection Type	Socketed Terminals	
Mounting Style	Panel Mount	
Control Output 1	Relay, 10A (NO+NC) and open collector (S.S out)	Relay, 8A (NO+NC) and open collector (S.S out)
Control Output 2	Relay, 5A (NO) and open collector (S.S out)	
Control Output Time	Continuous or 0.1 to 999.9 seconds	
Sensor Supply Output	12V DC, 50mA	
Communication	RS485 Modbus *	

There is no price difference between supply voltages.
* must be specified in the order

Order Code:

1	2	3
☐☐☐☐☐☐☐	☐☐☐	☐☐

1 - Product Base Code	
48x48 mm Digital Counter&Tachometer	ECH4400
72x72 mm Digital Counter&Tachometer	ECH7700

2 - Supply Voltage	
230VAC	230
10-30V DC/8-24V AC	LV

3 - Communication	
RS485 ModBus	RS
None	

Sample Order Code: **ECH4400-230-RS**

Counters and Tachometers

MODEL	EC2401	ETS1410
Dimensions (mm)	W77xH35xD61	
Display	4 Digits	
Counting Input	5 to 30V pulse (PNP, NPN)	
Counting Frequency	10kHz	
Counting Frequency	-	10kHz
Counting Type	Forward or Reverse	-
Sampling Time	-	1 to 16 seconds
Calibration Value	1	can enter divisor value between 1 to 999
Decimal Point	-	adjustable between 1st and 3rd digits
Supply	230V AC 50/60Hz or 10-30V DC / 8-24V AC SMPS *	
Connection Type	Terminals	
Mounting Style	Panel Mount	
Control Output	-	
Sensor Supply Output	12V DC, 30mA	
Communication	-	

No price difference between supply voltages.
* must be specified in the order

Order Code:

1							2		

1 - Product Base Code	
77x35 mm Digital Counter	EC2401
77x35 mm Digital Tachometer	ETS1410

2 - Supply Voltage	
230VAC	230
10-30V DC/8-24V AC	LV

Sample Order Code: **EC2401-230**

Time Relays

A device with PNP/NPN input, single or dual relay/SSR output, featuring 9 stage time intervals, 12 different output modes, built-in sensor supply, and various size options, equipped with Modbus RTU RS-485 communication capability, and different power supply options. Thanks to these features, it is effectively used in time-dependent control applications.

Digital

Time Relays

MODEL	EM4401	EM7701	ETM2432
Dimensions (mm)	W48xH48xD87	W72xH72xD97	W77xH35xD61
Display	2x4 Digits LCD		4 Digits
Scale	0-99.99 seconds to 0-9999 hours		0:01 ... 99:59 Minutes 0:01... 99:59 Hours
External Inputs	Start, reset, gate		
Start Input	PNP or NPN Input selectable		Contact Input
Reset Input			
Gate Input			
Supply	230V AC 50/60Hz or 10-30V DC / 8-24V AC SMPS *		
Connection Type	Socketed Terminals		Terminals
Mounting Type	Panel Mount		
Control Output 1	Relay, 10A (NO+NC) and open collector (S.S out)	Relay, 8A (NO+NC) and open collector (S.S out)	Relay, 8A (NO+NC)
Control Output 2	Relay, 5A (NO+NC) and open collector (S.S out)		
Timing Function	12 Different timing modes		9 Different timing modes
Timing Units	Seconds, minutes, hours		
Audible Warning	-		Available
Sensor Supply Output	12V DC, 50mA		-
Communication	RS485 Modbus *		-

No price difference between supply voltages.
* must be specified in the order

Order Code:

1	2	3
☐☐☐☐☐☐☐	☐☐☐	☐☐

1 - Product Base Code	
48x48 mm Digital Time Relay	EM4401
72x72 mm Digital Time Relay	EM7701
77x35 mm Digital Time Relay	ETM2432

2 - Supply Voltage	
230VAC	230
10-30V DC/8-24V AC	LV

3 - Communication (only for EM Series)	
RS485 ModBus	RS
None	

Sample Order Code: **EM4401-230-RS**

Analog Rail Mounted

Time Relays

MODEL	**ATF02** Flasher	**ATRL02** Right-Left	**ATP02** Multifunctional	**ATSD02** Star-Delta	**ATDW02** Dishwasher
Dimensions (mm)	W18xH90xD66				
Scale	adjustable within 0-1 range			For Y connection: 0-1; For Off transition time: 0, 20, 100, 200, 400, 500 ms.	Ty: Washing Time 30,60,90,120,180 seconds. Td: Rinse time can be adjusted from 1-30 seconds on the device
Supply	90-250V AC, 50/60Hz or 24V AC/DC 50/60Hz *				
Connection Type	Terminal				
Mounting Type	Rail Mount				
Control Output	Relay, 10A (NO+NC)				
Reset Time	Max. 0.04 seconds				
Timing Function	ton: the pull-in time of the relay. toff: the drop-out time of the relay can be adjusted on the device.	ton: pull-in time for OUT1-OUT2 relay toff: drop-out time for OUT1-OUT2 relay.	A, B, C, D, E, F modes can be selected on the device.	Y Time: Pull-in time for OUT1 relay. OFF Time: Drop-out time for OUT1-OUT2 relay.	Ty: Washing time. Td: Rinse time. Tb: Fixed waiting time
Timing Units	Separate seconds for On and Off times, 10 seconds, minutes, 10 minutes per hour and 10 hours can be selected on the device.		Seconds, 10 seconds, minutes, 10 minutes per hour and 10 hours can be selected on the device.	For Y Time seconds, 10 seconds, minutes, 10 minutes per hours and 10 hours can be selected on device.	Seconds
No price difference between supply voltages. * must be specified in the order					

1 - Product Base Code	
Flasher Analog Time Relay	ATF02
Right-Left Analog Time Relay	ATRL02
Multifunctional Analog Time Relay	ATP02
Star-Delta Analog Time Relay	ATSD02
Dishwasher Analog Time Relay	ATDW02

Order Code:

☐☐☐☐☐☐☐ ☐☐☐

1 2

2 - Supply Voltage	
90-250VAC	UV
24V AC/DC	LV

Sample Order Code: **ATP02-UV**

Analog

Time Relays

MODEL	**ATP4**	**ATSP4**	**ATM9321**
Dimensions (mm)	W48xH48xD82		W96xH96xD50
Display	-		3 Digits
Scale	0-1/3/12/30/60 *		0-9.99/99.9/999min
External Input	Start, Reset, Gate *	-	Start, Reset
Start Input	Contact input available in models with 10 terminals or 11 pin sockets *	-	Contact input
Reset Input			
Gate Input			
Supply	90-250V AC, 50/60Hz or 24V AC/DC 50/60Hz *		230V AC 50/60Hz or 10-30V DC / 8-24V AC SMPS *
Connection Type	8/11 pin socket or 7/10 socketed terminal *	8 pin socket or 5 socketed terminal *	Socketed Terminal
Mounting Type	Panel or Rail Mount *		Panel Mount
Control Output	Relay, 8A (NO+NC)		-
Trigger Output	Relay, 8A (NO)	-	-
Timing Function	A, B, C, D, E, F modes can be selected on the device		A and B modes can be selected on the device
Timing Unit	Seconds, 10 seconds, minutes, 10 minutes per hour and 10 hours can be selected on the device.		Minutes

No price difference between supply voltages.
* must be specified in the order

Order Code:

1 - Product Base Code	
48x48 mm Analog Time Relay	ATP4

2 - Supply Voltage	
90-250VAC	UV
24V AC/DC	LV

4 - Scale	
0…1,2	01
0…3	03
0…12	12
0…30	30
0…60	60

3 - Connection Type	
7-Terminal	K07
10-Terminal (Start, Reset, Gate connection)	K10
8 pins	S08
11 pins (Start, Reset, Gate connection)	S11

Sample Order Code: **ATP4-UV-K07-30**

1 - Product Base Code	
48x48 mm Analog Time Relay	ATSP4

2 - Supply Voltage	
90-250VAC	UV
24V AC/DC 24V AC/DC	LV

3 - Conntection Type	
5-Terminal	K05
8 pins	S08

4 - Scale	
0…1,2	01
0…3	03
0…12	12
0…30	30
0…60	60

Sample Order Code: **ATSP4-LV-S08-12**

1 - Product Base Code	
96x96 mm Digital Display Analog Time Relay	ATM9321

2 - Supply Voltage	
230VAC	230
10-30V DC/8-24V AC	LV

Sample Order Code: **ATM9321-230**

Digital Potentiometers

Digital potentiometers, offering a superior alternative to analog potentiometers, stand out with products that provide higher precision, fast adjustment, and control capabilities.

With a 4-digit LED display, selectable analog output, a range of sizes and power supply options, and the ability to synchronize with Modbus RTU RS-485 and more, all available at ENDA!

Digital Potentiometers

MODEL	EDP2041
Dimensions (mm)	W7xH35xD61
Display	4 digits
Scale Range	-1999 ... 9999
Decimal Point	Adjustable between the 1st and 3rd digits
Supply	230V AC 50/60Hz or 10-30V DC / 8-24V AC SMPS *
Connection Type	Terminal
Mounting Type	Panel Mount
Output	0/4-20mA and 0-10V
External Inputs	Preset value can be adjusted with external buttons
Soft On and Soft Off Function	Available
Synchronous Operation	Potentiometers communicating with ModBus can be operated synchronously
Communication	RS485 Modbus *

No price difference between supply voltages.
* must be specified in the order

Order Code:

1							2			3		

1 - Product Base Code	
77x35 mm Digital Potentiometer	EDP2041
72x72 mm Digital Potentiometer	EDP7041

2 - Supply Voltage	
230VAC	230
10-30V DC/8-24V AC	LV

3 - Communication	
RS485 ModBus	RS
None	

Sample Order Code: **EDP2041-230-RS**

Digital Potentiometers

MODEL	EDP7041
Dimensions (mm)	W72xH72xD97
Display	4 digits
Scale Range	-1999 ... 9999
Decimal Point	Adjustable between the 1st and 3rd digits
Supply	230V AC 50/60Hz or 10-30V DC / 8-24V AC SMPS *
Connection Type	Socketed Terminal
Mounting Type	Panel Mount
Output	0/4-20mA and 0-10V
External Inputs	Preset value can be adjusted with external buttons
Soft On and Soft Off Function	Available
Synchronous Operation	Potentiometers communicating with ModBus can be operated synchronously
Communication	RS485 Modbus *

No price difference between supply voltages.
* must be specified in the order

Order Code:

1							2			3	

1 - Product Base Code	
77x35 mm Digital Potentiometer	EDP2041
72x72 mm Digital Potentiometer	EDP7041

2 - Supply Voltage	
230VAC	230
10-30V DC/8-24V AC	LV

3 - Communication	
RS485 ModBus	RS
None	

Sample Order Code: **EDP2041-230-RS**

Ammeters and Voltmeters

Advance your process with precise current and voltage measurements using digital ammeters and voltmeters, ensuring high accuracy and quickly resolving issues.

Features include a 4-digit LED display, selectable AC, DC, or True RMS measuring capabilities, various size options, different power supply choices, Modbus RTU Isolated RS-485 communication, and more, all available at ENDA!

Ammeters

Ammeters and Voltmeters

MODEL	**EPA242**	**EPA542**	**EPA742**	**EPA942**
Dimensions (mm)	W77xH35xD61	W54xH94xD68	W72xH72xD97	W96xH96xD50
Display	4 Digits			
Input Range	±5A (current transformer) ±1A (for -X1 extension products) CT 20/30 (for -CT extension products)			±5A (current transformer)
	±60mV (shunt resistance)			
Scale Range	For CT30: 0 ... 120A AC For CT20: 0 ... 300A AC	-9.99 ... 99.99A DC 0 ... 99.99A AC and RMS -99.9 ... 999.9A DC 0 ... 999.9A AC and RMS -999 ... 9999A DC 0 ... 9999A AC and RMS		
Frequency Range	DC, 10Hz - 200Hz (For square wave: 10Hz-70Hz)			
Supply	230V AC 50/60Hz or 10-30V DC / 8-24V AC SMPS *			
Connection Type	Terminals		Socketed Terminals	
Mounting Type	Panel Mount	Rail Mount	Panel Mount	
Alarm Output	Relay, 8A (NO+NC) *		Relay, 8A (NO) *	2 Relay, 10A (NO+NC) *
Analog Output	0/4-20mA DC or 1-5V DC *			-
Communication	Isolated RS485 ModBus *			

No price difference between supply voltages.
* must be specified in the order

Order Code:

1 - Product Base Code	
77x35mm Ammeter	EPA242
Rail Mounted Ammeter	EPA542
72X72mm Ammeter	EPA742

2 - Supply Voltage	
230VAC	230
10-30V DC/8-24V AC	LV

3 - Input Type	
5A or 60mV	
1A	X1
CT20/30 Akım Trafo Girişi veya 60mV	CT

4 - Output Type	
Relay	R
Analog Output	A

5 - Communication	
Isolated RS485 Modbus	RSI
None	

Sample Order Code: **EPA242-230-R**

Order Code:

1 - Product Base Code	
96x96 mm Ammeter	EPA942

2 - Supply Voltage	
230VAC	230
10-30V DC/8-24V AC	LV

3 - Output Type	
Relay	R
Relay + Alarm	2R

4 - Communication	
Isolated RS485 Modbus	RSI
None	

Sample Order Code: **EPA942-LV-2R-vRSI**

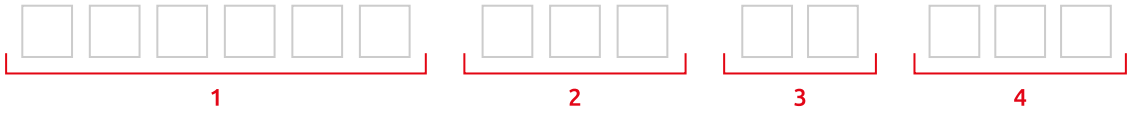
Voltmeters

Ammeters and Voltmeters

MODEL	**EPV242**	**EPV542**	**EPV742**	**EPV942**
Dimensions (mm)	W77xH35xD61	W54xH94xD68	W72xH72xD97	W96xH96xD50
Display	4 Digits			
Input Range	±500V - ±100V			
Scale Range	-100.0 ... 100.0V DC	0 ... 100.0V AC and RMS		
	-500 ... 500V DC	0 ... 500V AC and RMS		
Frequency Range	DC, 10Hz - 200Hz (For square wave: 10Hz-70Hz)			
Supply	230V AC 50/60Hz or 10-30V DC / 8-24V AC SMPS *			
Connection Type	Terminals		Socketed Terminals	
Mounting Type	Panel Mount	Rail Mount	Panel Mount	
Alarm Output	Relay, 8A (NO+NC) *		Relay, 8A (NO) *	2 Relays, 10A(NO+NC) *
Communication	Isolated RS485 ModBus *			

No price difference between supply voltages.
* must be specified in the order

Order Code:



1 - Product Base Code	
77x35mm Voltmeter	EPV242
Rail Mount Voltmeter	EPV542
77x72mm Voltmeter	EPV742

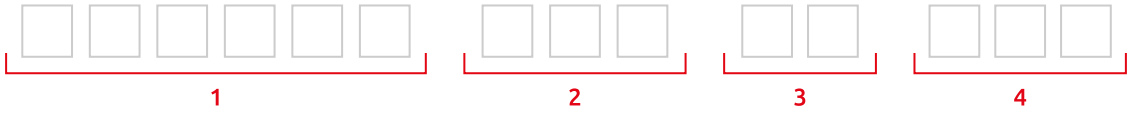
3 - Output Type	
Relay	R
Relay + Alarm	2R

2 - Supply Voltage	
230VAC	230
10-30V DC/8-24V AC	LV

4 - Communication	
Isolated RS485 Modbus RSI	RSI
None	

Sample Order Code: **EPV242-230-R-RSI**

Order Code:



1 - Product Base Code	
96x96mm Voltmeter	EPV942

3 - Output Type	
Relay	R
Relay + Alarm	2R

2 - Supply Voltage	
230VAC	230
10-30V DC/8-24V AC	LV

4 - Communication	
Isolated RS485 Modbus RSI	RSI
None	

Sample Order Code: **EPV942-230-R-RSI**

Humidity, Temperature Transmitters and Control Devices

Measure and control humidity and temperature. Keep humidity and temperature at optimal levels with our control devices frequently used in incubators, server rooms, and food storage areas.

Features include On-Off and PID control, selectable analog input types, relay and analog outputs, Modbus RTU RS-485 communication, selectable heating and cooling controls, audible alarms with buzzers, and more, all available at ENDA!

Transmitters

Humidity, Temperature Transmitters, and Control Devices

MODEL	ESHT102-W-50	ESHT102-CB-350	ESHT102-DC-350
Mounting Type	Wall Mounted Type	Wired Type (1.5m)	Duct Mounted Type
Immersion Length	50 mm	350 mm	
Temperature Range	-40.0...125.0°C		
Humidity Range	0 … 100%RH		
Measurement Time	7s for 63% humidity change (at 25°C and air flowing at 1m/s) 20s for 63% temperature change (at 25°C and air flowing at 1m/s)		
Display	-		
Outputs	0-20mA or 0-10V (Selectable on the device)		
Supply	15-35V DC or 10-25V AC		
Connection Type	Socketed Terminal		
Communication	-		

No price difference between supply voltages.
* must be specified in the order

Order Code: ☐☐☐☐☐☐ ☐☐☐

1 2

1 - Product Base Code	
Humidity and Temperature Transmitter	ESHT102

2 - Mounting Type	
Wall Mounted Type	W-50
Wired Type (1.5 m)	CB-350
Duct Mount Type	DC-350

Sample Order Code: **ESHT102-W-50**

Control Devices

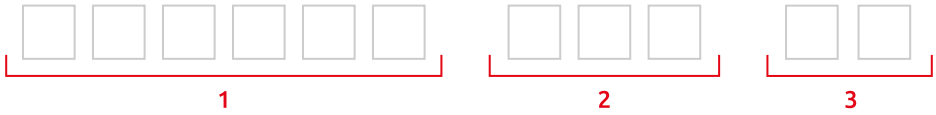
Humidity, Temperature Transmitters, and Control Devices

MODEL	**EHTC7425A-AS** H&T Controller	**EHTC7425A-DS** H&T Controller	**EHTC-W-100** Sensor Equipped Controller	**EHTC-CB-350** Sensor Equipped Controller	**EHTC-DC-350** Sensor Equipped Controller
Temperature Display	4 digits				
Humidity Display	4 digits				
Input Type	0/4-20mA, 0-10V, 1-5V	(Used with EHTD-CB-100 sensor)	-		
Mounting Type	Panel Mount		Wall Mount	Wired Mount	Duct Mount
Immersion Length	-	100 mm (for EHTD-CB-100)	100 mm	350 mm	
Temperature Range	-40.0...125.0°C				
Humidity Range	0.0...100.0%RH				
Measurement Time	-		7s for 63% humidity change (at 25°C and air flowing at 1m/s) 20s for 63% temperature change (at 25°C and air flowing at 1m/s)		
°C/°F Selection	Available				
Supply	230V AC 50/60Hz or 10-30V DC / 8-24V AC SMPS *		90-250V AC 50/60Hz or 10-30V DC / 8-24V AC SMPS *		
Sensor Supply	15V DC, 50mA	-			
Connection Type	Socketed Terminal				
Control Output	For temperature: Relay, 10A (NO) For humidity: Relay, 10A (NO) For fan: Relay, 10A (NO) For reversing: 2 Relays, 10A (NO)		For temperature: Relay, 5A (NO) For humidity: Relay, 5A (NO)		
Alarm Output	Audible alarm with buzzer		-		
Analog Output	-		0/4-20mA, 0-10V or 1-5V (Selectable for humidity and temperature)		
Control Form	For temperature: PID or On-Off | For humidity: On-Off				
Communication	RS485 ModBus *		RS485 ModBus		

No price difference between supply voltages.

* must be specified in the order

Order Code:



1 - Product Base Code	
H&T Controller	EHTC7425A

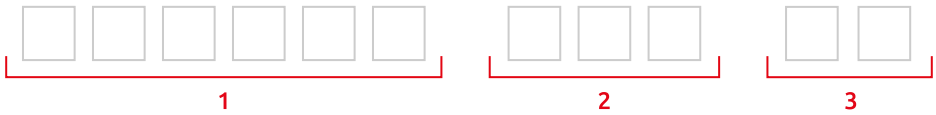
2 - Supply Voltage	
230VAC	230
10-30V DC/8-24V AC	LV

3 - Input	
Analog Input	AS
Digital Input	DS

4 - Communication	
RS485 ModBus	RS
None	

Sample Order Code: **EHTC7425A-230-AS**

*** For the EHTC7425A-DS model, the EHTD-CB-100 sensor must be ordered separately.**

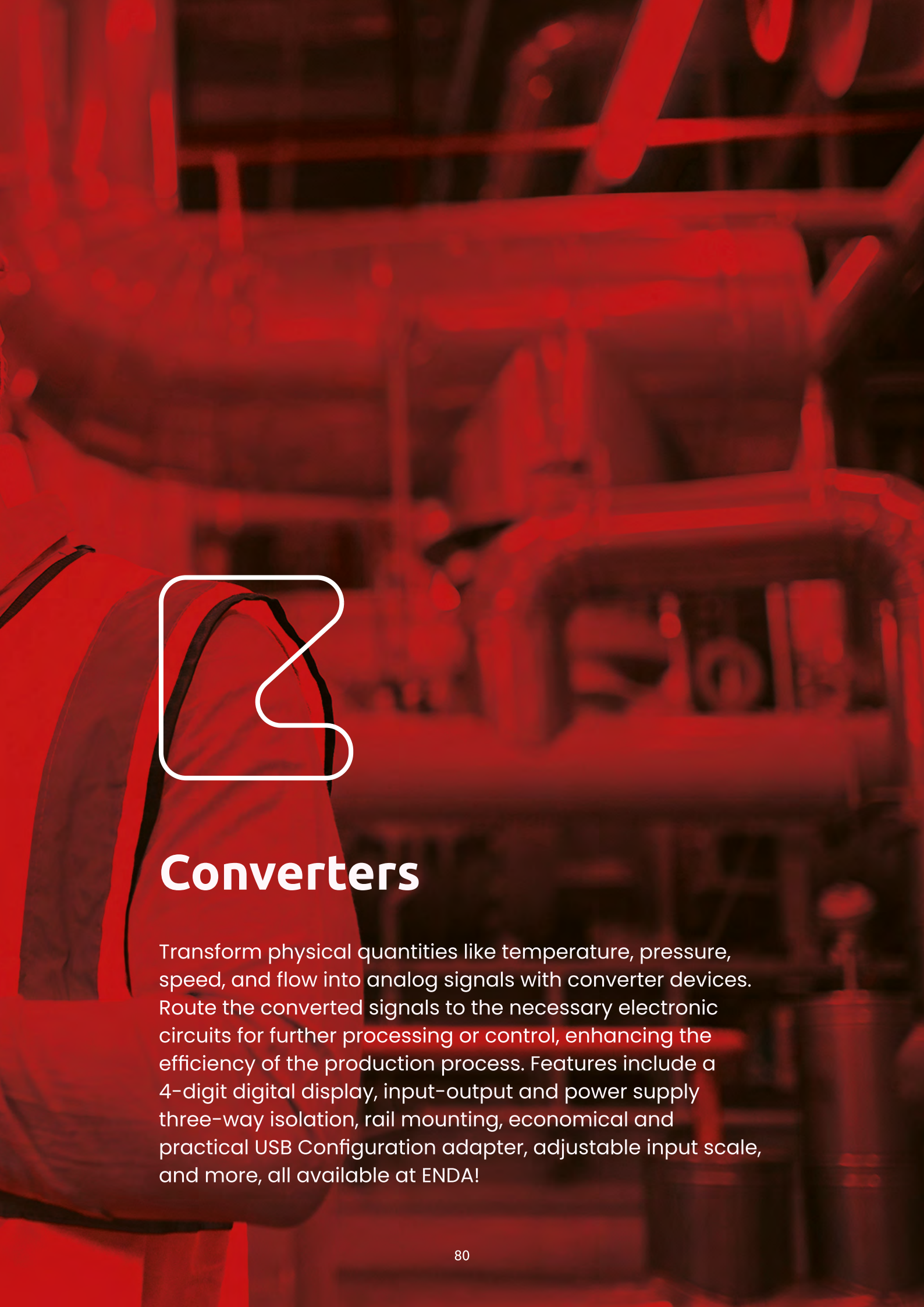


1 - Product Base Code	
H&T Controller	EHTC

3- Mounting Type	
Wall Mounted Type	W-100
Wired Type (1.5 m)	CB-350
Duct Mount Type	DC-350

2 - Supply Voltage	
90-250VAC	UV
10-30V DC/8-24V AC	LV

Sample Order Code: **EHTC-LV-W-100**



Converters

Transform physical quantities like temperature, pressure, speed, and flow into analog signals with converter devices. Route the converted signals to the necessary electronic circuits for further processing or control, enhancing the efficiency of the production process. Features include a 4-digit digital display, input-output and power supply three-way isolation, rail mounting, economical and practical USB Configuration adapter, adjustable input scale, and more, all available at ENDA!

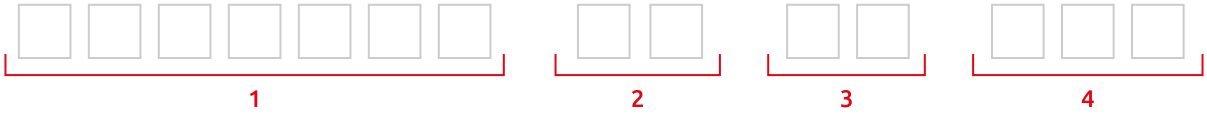
Converters

MODEL	**ECUC411** Universal Converter	**ECCC411** Current Converter	**ECVC411** Voltage Converter	**ECTC** Temperature Converter
Dimensions (mm)	W25xH97xD115 TH35			Diameter 44xY20
Input Type	PT100, TC, NTC, Ω, KΩ, mA, V, mV, or Frequency	±5A (current transformer), ±60mV (shunt resistance), ±1A (for X1 extension products), CT 20/30 (for CT extension products)	±100V and ±500V	PT 100 and TC
Scale	PT 100, -200.0…850.0°C B, 200.0…1800.0°C E, -100.0…900.0°C J, -100.0…900.0°C K, -100.0…1300.0°C L, -100.0…900.0°C N, -200.0…1300.0°C R, 0.0…1700.0°C S, 0.0…1700.0°C T, -250.0…300.0°C U, -200.0…400.0°C NTC, -60.0...150.0°C 0/4-20 mA… -999...9999 0-150 mV...-999...9999 0/1-5 V, 0-10V... -999...9999 0/550Ω-10kΩ...-999...9999 0-10kHz...0...9999	For CT30: 0 ... 120A AC For CT20: 0 ... 300A AC -9.99 ... 99.99A DC 0 ... 99.99A AC and RMS -99.9 ... 999.9A DC 0 ... 999.9A AC and RMS -999 ... 9999A DC 0 ... 9999A AC and RMS	±100/500V DC, 0-100/500V AC and RMS	PT 100, -200…840°C B, 60…1820°C E, -200…840°C J, -200…1120°C K, -200...1360°C L, -200…900°C N, -200…1300°C S, -40…1760°C R, -40…1760°C T, -200…400°C U, -200…600°C
Frequency Range	-	DC, 20Hz-70Hz		-
Sampling Time	250ms			100ms
Output	0/4-20mA DC, 0-10V DC or 1-5V DC			4-20mA, 20-4mA
Supply	90-250V AC, 50/60Hz or 9-30V DC/7-24V AC,50/60Hz *			8-36V DC (ECTC-TR) 10-36V DC (ECTC-TR-I)
Sensor Supply	Available *	-		
Connection Type	Terminal			M3 screw connection
Mounting Type	Rail Mounting			DIN form B sensor head mounting
A/D Conventer				16bit
D/A Conventer	13 bit			
Input/Output Isolation	Available			Available in ECTC-TR-I
Communication	Isolated RS485 ModBus *			-

No price difference between supply voltages.

* must be specified in the order

Order Code:



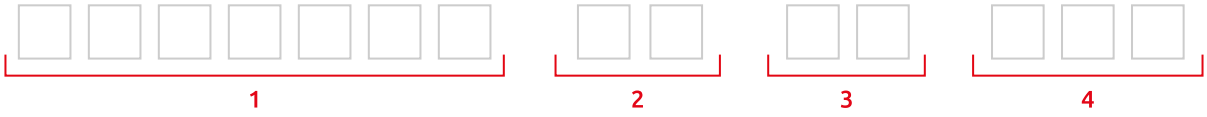
1 - Product Base Code	
Configurable Current Converter	ECCC411

2 - Supply Voltage	
90-250V AC	UV
10-30V DC/8-24V AC	LV

3 - Input Type	
5A or 60mV	
1A	X1
CT20/30 Akım Trafo Girişi veya 60mV	CT

4 - Communication	
Isolated RS485 Modbus	RSI
None	

Sample Order Code: **ECCC411-UV-RSI**



1 - Product Base Code	
Configurable Universal Converter	ECUC411

2 - Supply Voltage	
90-250V AC	UV
10-30V DC/8-24V AC	LV

3 - Sensor Supply	
24V DC (30 mA)	24
None	

4 - Communication	
Isolated RS485 Modbus	RSI
None	

Sample Order Code: **ECUC411-UV-24-RSI**

1 - Product Base Code	
Configurable Voltage Converter	ECVC411

2 - Supply Voltage	
90-250V AC	UV
10-30V DC/8-24V AC	LV

3 - Communication	
Isolated RS485 Modbus	RSI
None	

Sample Order Code: **ECVC411-LV**

1 - Product Base Code	
Configurable Temperature Converter	ECTC-TR

2 - Galvanic Isolation	
Available	I
None	

Sample Order Code: **ECTC-TR-I**

Protection Relays

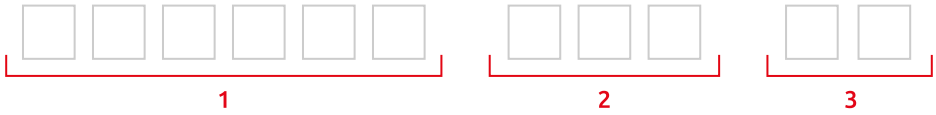
Enhance job safety and equipment protection with protection relays that perform the function of opening and closing electrical circuits in hazardous situations during the production process.

Take necessary precautions by monitoring over/under current and voltage, phase loss, PTC protection, and many other dangerous conditions. Single and three-phase voltage control, current set value adjustment, rail mounting, terminal connection, and more features are available at ENDA!

Protection Relays

MODEL	**EPCR02** Current Protection Relay	**EPVR02** Voltage Protection Relay	**EPMR02** Motor Protection Relay	**EPPC02** Phase Sequence Protection Relay
Dimensions (mm)	W18xH84xD62 mm			
Input Type	0-5A AC	3 x 125-310V AC	3 x 125-310 / 500V AC ve PTC	
Frequency Range	45Hz-65Hz			
Reset Time	Maximum 0.01 seconds			
Control Output	Relay, 10A (NO+NC)		Relay, 10A (NO) (for EPMR02-N-P and EPMR02-N-F) Relay, 10A (NO+NC) (for EPMR02-N-V and EPMR02-N-A)	2x Relay, 10A (NO+NC)
Supply	125-310V AC	-		125x410V AC
Connection Type	Klemens			

Order Code:



1 - Product Base Code	
Motor Protection Relay	EPMR02

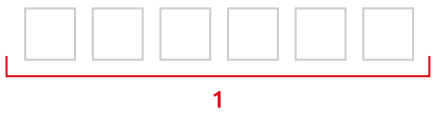
2 - Neutral Connection	
Available	N
None	

3 - Protection Type	
Phase failure and sequence protection	F
Adjustable asymmetry protection	A
Adjustable voltage protection	V
Phase failure protection	P

Order Code	Neutral Connection	Phase Failure Control	Phase Sequence Control	PTC (Overheating Control)	Over-Low Voltage Control	Adjustable Voltage	Fixed (%20) Asymmetry	Adjustable Asymmetry
EPMR02-N-A	√	√	√	√	√			√
EPMR02-N-V	√	√	√	√	√	√	√	
EPMR02-N-F	√	√	√					
EPMR02-N-P	√	√						

Sample Order Code: **EPMR02-N-F**

Order Code:



1 - Product Base Code	
Current Protection Relay	EPCR02
Voltage Protection Relay	EPVR02
Phase Sequence Protection Relay	EPPC02

Solid State Relays

Solid State Relays (SSRs) perform the switching function between input and output, enhancing the efficiency of your production process. SSRs use semiconductor devices to switch current electronically, offering high-precision control and improvements in your system. Features include 12-25-40-50-70-100-120A AC load current, 90-240V AC input voltage, applicability to three-phase loads, varistor protection against peak voltages, and more, all available at ENDA!

Zero Crossing Panel Mounted

Solid State Relays

EPDA1

Monophase

Features	Input Voltage	Load Voltage	Load Current	Product Code
• LED indicator for input voltage • Switching at AC voltage zero crossing • Applicability to three-phase loads • Varistor protection against peak voltages	8-30V AC/DC	24-320V AC	12A	EPDA1-212Z
			25A	EPDA1-225Z
			40A	EPDA1-240Z
	8-30V AC/DC	50-480V AC	25A	EPDA1-425Z
			40A	EPDA1-440Z
			50A	EPDA1-450Z
			70A	EPDA1-470Z
			100A	EPDA1-4100Z
			120A	EPDA1-4120Z

EPDA2

Monophase, 2 x Solid State Relays

Features	Input Voltage	Load Voltage	Load Current	Product Code
• LED indicator for input voltage • Switching at AC voltage zero crossing • Applicability to three-phase loads • Varistor protection against peak voltages • Fan control thermostat • Thermostat(50 °C) in SSRs with -T extension	8-30V AC/DC	50-480V AC	2 x 70A	EPDA2-470Z
				EPDA2-470Z-T

EPDA3

Tree-Phase

Features	Input Voltage	Load Voltage	Load Current	Product Code
• LED indicator for input voltage • Switching at AC voltage zero crossing • Applicability to three-phase loads • Varistor protection against peak voltages • Fan control thermostat • Thermostat(50 °C) in SSRs with -T extension	8-30V AC/DC	50-480V AC	3 x 25A	EPDA3-425Z
				EPDA3-425Z-T
			3 x 40A	EPDA3-440Z
				EPDA3-440Z-T

EPAA1

Monophase

Features	Input Voltage	Load Voltage	Load Current	Product Code
• LED indicator for input voltage • Switching at AC voltage zero crossing • Applicability to three-phase loads • Varistor protection against peak voltages	90-240V AC	24-320V AC	12A	EPAA1-212Z
			25A	EPAA1-225Z
			40A	EPAA1-240Z
	90-240V AC	50-480V AC	25A	EPAA1-425Z
			40A	EPAA1-440Z
			50A	EPAA1-450Z
			70A	EPAA1-470Z
			100A	EPAA1-4100Z
			120A	EPAA1-4120Z

EPAA2

Monophase, 2 x Solid State Relays

Features	Input Voltage	Load Voltage	Load Current	Product Code
• LED indicator for input voltage • Switching at AC voltage zero crossing • Applicability to three-phase loads • Varistor protection against peak voltages • Fan control thermostat • Thermostat(50 °C) in SSRs with -T extension	90-240V AC	50-480V AC	2 x 70A	EPAA2-470Z
				EPAA2-470Z-T

EPAA3

Tree-Phase

Features	Input Voltage	Load Voltage	Load Current	Product Code
• LED indicator for input voltage • Switching at AC voltage zero crossing • Applicability to three-phase loads • Varistor protection against peak voltages • Fan control thermostat • Thermostat(50 °C) in SSRs with -T extension	90-240V AC	50-480V AC	3 x 25A	EPAA3-425Z
				EPAA3-425Z-T
			3 x 40A	EPAA3-440Z
				EPAA3-440Z-T

Zero Crossing Panel Mount

Solid State Relays

EPGA1

Monophase

Features	Input Voltage	Load Voltage	Load Current	Product Code
• LED indicator for input voltage • Switching at AC voltage zero crossing • Applicability to three-phase loads • Varistor protection against peak voltages	3-30V DC	24-320V AC	12A	EPGA1-212Z
			25A	EPGA1-225Z
			40A	EPGA1-240Z
		50-480V AC	50A	EPGA1-450Z
			70A	EPGA1-470Z

ESDA1

Monophase Slim Panel

Features	Input Voltage	Load Voltage	Load Current	Product Code
• LED indicator for input voltage • Switching at AC voltage zero crossing • Applicability to three-phase loads • Varistor protection against peak voltages	3-30V DC	24-320V AC	12A	ESDA1-212Z
			25A	ESDA1-225Z
			40A	ESDA1-240Z

ESAA1

Monophase Slim Panel

Features	Input Voltage	Load Voltage	Load Current	Product Code
• LED indicator for input voltage • Switching at AC voltage zero crossing • Applicability to three-phase loads • Varistor protection against peak voltages	90-240V AC	24-320V AC	12A	ESAA1-212Z
			25A	ESAA1-225Z
			40A	ESAA1-240Z

EPGD1- ESGD1

Monophase DC-DC

Features	Input Voltage	Load Voltage	Load Current	Product Code
• LED indicator for input voltage • Varistor protection against peak voltages • Panel or narrow panel mount	7-30V DC	3-40V DC	40A	EPGD1-440Z
				ESGD1-440Z

Zero Crossing Rail Mount

Solid State Relays

ERDA1

Monophase

Features	Input Voltage	Load Voltage	Load Current	Product Code
• LED indicator for input voltage • Switching at AC voltage zero crossing • Applicability to three-phase loads • Varistor protection against peak voltages	8-30V AC/DC	24-320V AC	25A	ERDA1-225Z
			40A	ERDA1-240Z
	8-30V AC/DC	50-480V AC	25A	ERDA1-425Z
			40A	ERDA1-440Z

ERDA2

Monophase, 2 x Solid State Relays

Features	Input Voltage	Load Voltage	Load Current	Product Code
• LED indicator for input voltage • Switching at AC voltage zero crossing • Applicability to three-phase loads • Varistor protection against peak voltages	8-30V AC/DC	24-320V AC	2 x 25A	ERDA2-225Z
			2 x 40A	ERDA2-240Z-F
	8-30V AC/DC	50-480V AC	2 x 25A	ERDA2-425Z
			2 x 40A	ERDA2-440Z-F

ERAA1

Monophase

Features	Input Voltage	Load Voltage	Load Current	Product Code
• LED indicator for input voltage • Switching at AC voltage zero crossing • Applicability to three-phase loads • Varistor protection against peak voltages	90-240V AC	24-320V AC	25A	ERAA1-225Z
			40A	ERAA1-240Z
	90-240V AC	24-320V AC	25A	ERAA1-425Z
		50-480V AC	40A	ERAA1-440Z

ERAA2

Monophase, 2 x Solid State Relays

Features	Input Voltage	Load Voltage	Load Current	Product Code
• LED indicator for input voltage • Switching at AC voltage zero crossing • Applicability to three-phase loads • Varistor protection against peak voltages	90-240V AC	24-320V AC	2 x 25A	ERAA2-225Z
			2 x 40A	ERAA2-240Z-F
	90-240V AC	50-480V AC	2 x 25A	ERAA2-425Z
			2 x 40A	ERAA2-440Z-F

Heatsinks

Solid State Relays

Thermal Resistance °C/W	Load Current	Dimensions (mm)	Product Code
2	12-25A	46x61x62	ETS-46-62
1,7	20-25A	46x61x80	ETS-46-80
1,5	25-40A	46x61x100	ETS-46-100
0,7	50-70A	46x61x110	ETS-46-100F

Products with the -F extension include a fan.

Fan Supply: For ETS-46-100F, 24VDC, 100mA

Thermal Resistance °C/W	Load Current	Dimensions (mm)	Product Code
1	40-50A	62x77x100	ETS-62-100
0,4	70-120A	62x77x120	ETS-62-100F
0,75	3 x 25A	99x87x100	ETS-99-100
0,34	3 x 40-50A	99x87x125	ETS-99-100F

Products with the -F extension include a fan.

Fan Supply: For ETS-62-100F, 24VDC, 140mA

Fan Supply: For ETS-99-100F, 24VDC, 220mA

Power Regulators

Power regulators are used in industrial process control systems, energy transmission lines, and similar applications. Phase angle control is a critical parameter for the safety and efficiency of energy systems.

Features include a 4-digit LED display, multi-input signal, phase angle and zero crossing control, soft start and kick start for ramp-up, varistor protection against peak voltages, and more, all available at ENDA!

Phase Angle Rail Mount

Power Regulators

ERCA1

Proportional Solid State Relays

Features	Input Voltage	Load Voltage	Load Current	Communication	Product Code
• LED indicator for input signal • Ability to control AC voltage with phase angle • Varistor protection against peak voltages • Products with the -F extension include a fan	4-20mA	180-320V AC	25A	-	ERCA1-225PA
			40A	-	ERCA1-240PA
		180-480V AC	25A	-	ERCA1-425PA
			40A	-	ERCA1-440PA
		180-500V AC	50A	-	ERCA1-450PA-F
			70A	-	ERCA1-470PA-F

ERVA1

Proportional Solid State Relay

Features	Input Voltage	Load Voltage	Load Current	Communication	Product Code
• LED indicator for input signal • Ability to control AC voltage with phase angle • Varistor protection against peak voltages • Products with the -F extension include a fan	0-10V DC	180-280V AC	40A	-	ERVA1-240PA
		180-480V AC	40A	-	ERVA1-440PA
		180-500V AC	50A	-	ERVA1-450PA-F
			70A	-	ERVA1-470PA-F

ERPA1

Power Regulator

Features	Input Voltage	Load Voltage	Load Current	Communication	Product Code
• LED indicator for input signal • Ability to control AC voltage with phase angle • Varistor protection against peak voltages • Products with the -F extension include a fan	0-20mA 4-20mA 0/1-5V 0-10V 2-10V 1/10kΩ	180-320V AC	40A	-	ERPA1-240-F
				RS485 Modbus	ERPA1-240-F-RS
		180-480V AC	40A	-	ERPA1-440-F
				RS485 Modbus	ERPA1-440-F-RS
		180-500V AC	50A	-	ERPA1-550-F
				RS485 Modbus	ERPA1-550-F-RS
		180-500V AC	70A	-	ERPA1-570-F
				RS485 Modbus	ERPA1-570-F-RS

Fan Speed Control Board

Power Regulators

EFSC

Single-Phase Fan Speed Control Board

Nominal Current At 40°C	Nominal Current At 50°C	Input Signal	Product Code
5A	4A	0....10V DC	EFSC-04-V
		4-20 mA DC	EFSC-04-I
7A	6A	0....10V DC	EFSC-06-V
		4-20 mA DC	EFSC-06-I
9A	8A	0....10V DC	EFSC-08-V
		4-20 mA DC	EFSC-08-I

Vibration Control

With vibration control devices produced under the assurance of ENDA, easily manage your vibratory feeding systems. Features include control with phase angle, 4A or 15A load current, selectable 110V or 220V load voltage, selectable 50 Hz or 100 Hz vibration frequency, 4-digit LED display, ramp-up with Soft start, and more available at ENDA!

Phase Angle Wall Mount

Vibration Control

EPAC3-W-F

Vibration Coil Control Device

Input Signal	Load Voltage	Load Current	Digital Input	Frequency	Sensor Supply	Digital Input Connection Cable	Product Code
Adjustment Knob or 0-10V DC	0-125V AC	4A AC	Available	50/100Hz	12V DC, 50mA	-	EPAC3-W-F
						Available	EPAC3-W-F-S
Adjustment Knob or 0-10V DC	0-125V AC	15A AC	Available	50/100Hz	12V DC, 50mA	-	EPAC3-W-F-15

- 4-digit LED display
- Stopping the load output with a digital input
- Selectable digital input (for NO/NC contact or NO/NC sensor)
- Plug-in power cord and motor connection cable
- Connection cable for digital input
- Ability to set maximum and minimum values fvor output
- Internal fuse
- Ramp-up with Soft Start
- Varistor protection against peak voltages
- On/Off switch

EFVC

Frequency Controlled Vibration Coil Control Device

Input Signal	Load Voltage	Load Current	Digital Input	Frequency	Sensor Supply	Solenoid Valve Output	Product Code
Adjustment Knob or 0-10V DC	0-110V AC 0-220V AC	6A AC	Available	30Hz -140 Hz	12V DC, 30mA	-	EFVC-06
Adjustment Knob or 0-10V DC	0-110V AC 0-220V AC	6A AC	Available	30Hz -140 Hz	12V DC, 30mA	Available	EFVC-06-24

- 4-digit LED display
- Frequency-controlled vibration control
- Ability to assign maximum and minimum values for output
- Stoppage of load output with digital input
- Built-in fuse
- Plug-in mains cable and motor connection cable
- Control via adjustment button or 0-10V DC analog signal
- Selectable digital input (for NO/NC contact or NO/NC sensor)
- Soft start and stop with Soft Start
- Varistor protection for peak voltages
- On/off switch
- Adjustable vibration frequency

Temperature Probes

NTC, PT-100 and TERMOCUPL temperature sensors provide superior performance in industrial applications. With fast response time and a wide measuring range, NTC sensors track instantaneous temperature changes. PT-100 sensors offer reliable measurement in industrial controls with high accuracy and stability. And Thermocouple sensors deliver robust performance in high temperature and harsh conditions. Qualified temperature sensors and more at ENDA!

NTC Probes

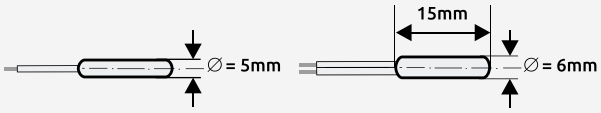
Temperature Probes

MODEL	NTC-APT	NTC-APP	NTC-APS	NTC-LPS
Sensor Type	NTC			
Measurement Range	-50...+105°C	-30...+80°C	-60...+150°C	
Hive Material	Thermoplastic sleeve	Plastic sleeve	Stainless steel sleeve	
Cable Material	Thermoplastic cable	PVC cable	Silicone cable	
Cable Length	1,5 mt.	Can be produced with cable in desired length *		

* must be specified in the order

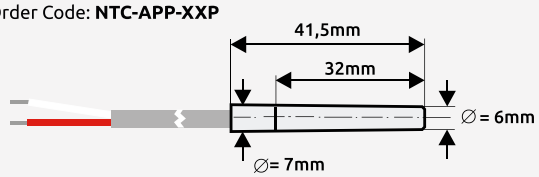
Order Code:

Order Code: **NTC-APT-1,5T**



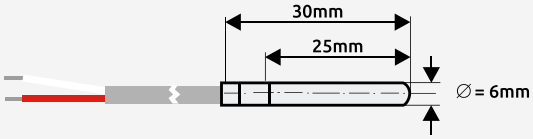
Cable length is 1.5 meters.

Order Code: **NTC-APP-XXP**



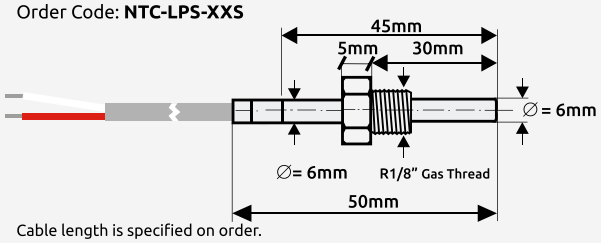
Cable length is specified on order.

Order Code: **NTC-APS-XXS**



Cable length is specified on order.

Order Code: **NTC-LPS-XXS**



Cable length is specified on order.

	Ürün Kodu
• The cable length of the NTC-APT-1.5T probe is 1.5 meters as standard. • The cable length of other probes must be specified in the order.	NTC-APT-1,5T
	NTC-APP-1,5P
	NTC-APS-1,5S
	NTC-LPS-1,5S

Bayonet Type Thermo Elements

Temperature Probes

Element Type	Tooth Size	Pipe Diameter	Plunge Length	Cable Length	Order Code
J	M12 x 1.75	6mm	30mm	1 meter	ETB30F06-1Ç
				1,5 meter	ETB30F06-1.5Ç
				2 meter	ETB30F06-2Ç
				3 meter	ETB30F06-3Ç
				4 meter	ETB30F06-4Ç
				5 meter	ETB30F06-5Ç
J	M12 x 1.75	8mm	12mm	1 meter	ETB12F08-1Ç
				1,5 meter	ETB12F08-1.5Ç
				2 meter	ETB12F08-2Ç
				3 meter	ETB12F08-3Ç
				4 meter	ETB12F08-4Ç
				5 meter	ETB12F08-5Ç
Pt-100	M12 x 1.75	6mm	30mm	1 meter	EP0630-1Ç
				2 meter	EP0630-2Ç
				3 meter	EP0630-3Ç
				4 meter	EP0630-4Ç
				5 meter	EP0630-5Ç
Pt-100	M12 x 1.75	8mm	12mm	1 meter	EP0812-1Ç
				2 meter	EP0812-2Ç
				3 meter	EP0812-3Ç
				4 meter	EP0812-4Ç
				5 meter	EP0812-5Ç

Head Type Thermo Elements

Temperature Probes

Element Type	Pipe Diameter	Number of Elements	Mounting method	Plunge Length	Order Code
J	8mm	Single Element	½ inch union	100 mm	ETD01-1J1K08-10R1/2
				150 mm	ETD01-1J1K08-15R1/2
				250 mm	ETD01-1J1K08-25R1/2
				350 mm	ETD01-1J1K08-35R1/2
				500 mm	ETD01-1J1K08-50R1/2
J	8mm	Single Element	-	100 mm	ETD01-1J1K08-10
				150 mm	ETD01-1J1K08-15
				250 mm	ETD01-1J1K08-25
				350 mm	ETD01-1J1K08-35
				500 mm	ETD01-1J1K08-50
Pt-100	8mm	Single Element	½ inch union	100 mm	EP02-1K08-10Ü
				150 mm	EP02-1K08-15Ü
				250 mm	EP02-1K08-25Ü
				350 mm	EP02-1K08-35Ü
				500 mm	EP02-1K08-50Ü
				700 mm	EP02-1K08-70Ü
Pt-100	8mm	Double Element	½ inch union	100 mm	EP02-2K08-10
				150 mm	EP02-2K08-15
				250 mm	EP02-2K08-25
				350 mm	EP02-2K08-35
				500 mm	EP02-2K08-50
				700 mm	EP02-2K08-70

Compensation Cables

Element Type	Conductor Cross Section (mm²)	Order Code
J (Fe-Const)	2 x 0,35	KÇ 2x0,35-J-SCM
	2 x 0,75	KÇ 2x0,75-J-SCM
	2 x 1,5	KÇ 2x1,5-J-SCM
K (NiCr-Ni)	2 x 0,75	KÇ 2x0,75-K-SCM
	2 x 1,5	KÇ 2x1,5-K-SCM

technology | intelligence | automation

technology | intelligence | automation

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