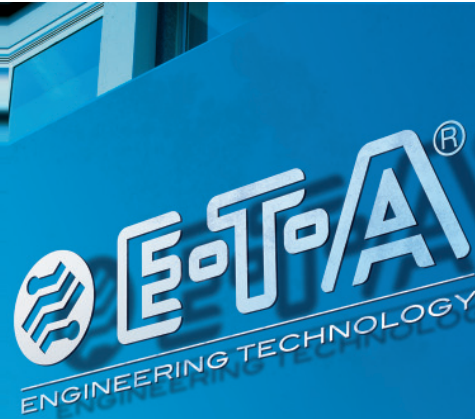


# Automation and Process Control Overview



# Automation & Process Control Product Range



Are you looking for products offering centralized DC 24 V power distribution for reliable protection of switch-mode power supplies?

E-T-A's products for the automation & process control industry ensure minimal interruptions and a reduction in the overall cost of downtime of your machine tools, complete CNC machining centers and highly flexible production lines. E-T-A offers a wide variety of components and complete solutions such as:

## DIN Rail Mount Circuit Breakers

Available in either thermal-magnetic or electronic technology, these products snap directly onto standard DIN Rail for easy integration into control panel designs.

## DIN Rail Mount Socket Breakers

Available in either thermal-magnetic or electronic technology, these products allow assembly and wiring of complex systems prior to making final decisions of individual loads and can be conveniently removed in the event that troubleshooting is required.

## Fuse Replacement

Available in either thermal or magnetic technology, these products plug directly into standard fuse holders, provide visible indication of failure and are resettable.

## Power Distribution Systems

Whether you are looking for a standard power distribution system or a custom design E-T-A's power distribution systems offer main incoming power cable connections, pluggable circuit breaker protection and feeder outgoing device cable connections.



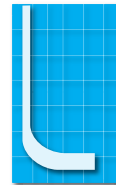
### Thermal

Heating effect of current activates a bimetal thermal actuator, offering one of the most reliable and cost effective types of circuit protection.



### Thermal Magnetic

Latching type bi-metal is combined with a magnetic coil to provide the joint benefits of delayed operation for low current protection and fast magnetic action on higher value short circuits.



### Magnetic

Solenoid release fast acting device with precise tripping characteristics well suited for printed circuit board applications and high current devices. Speed of operation is limited only by the mechanical inertia of the mechanism.



### Electronic

Provides fault detection for short circuit and current overload conditions. Identifies faults on 24 VDC circuits and selectively deactivates the faulted path. Designed to be installed into switch mode power supply applications.

Figure 1: E-T-A product technologies

# One Source - Complete 24 VDC Power Solution

E-T-A's 24VDC power solution consists of:

- Primary AC circuit protection via the 4230-T MCB
- Primary switch mode power supply SMP with output voltage DC 24 V
- 24 VDC protection of load circuits via mechanical and electronic circuit breakers and protectors

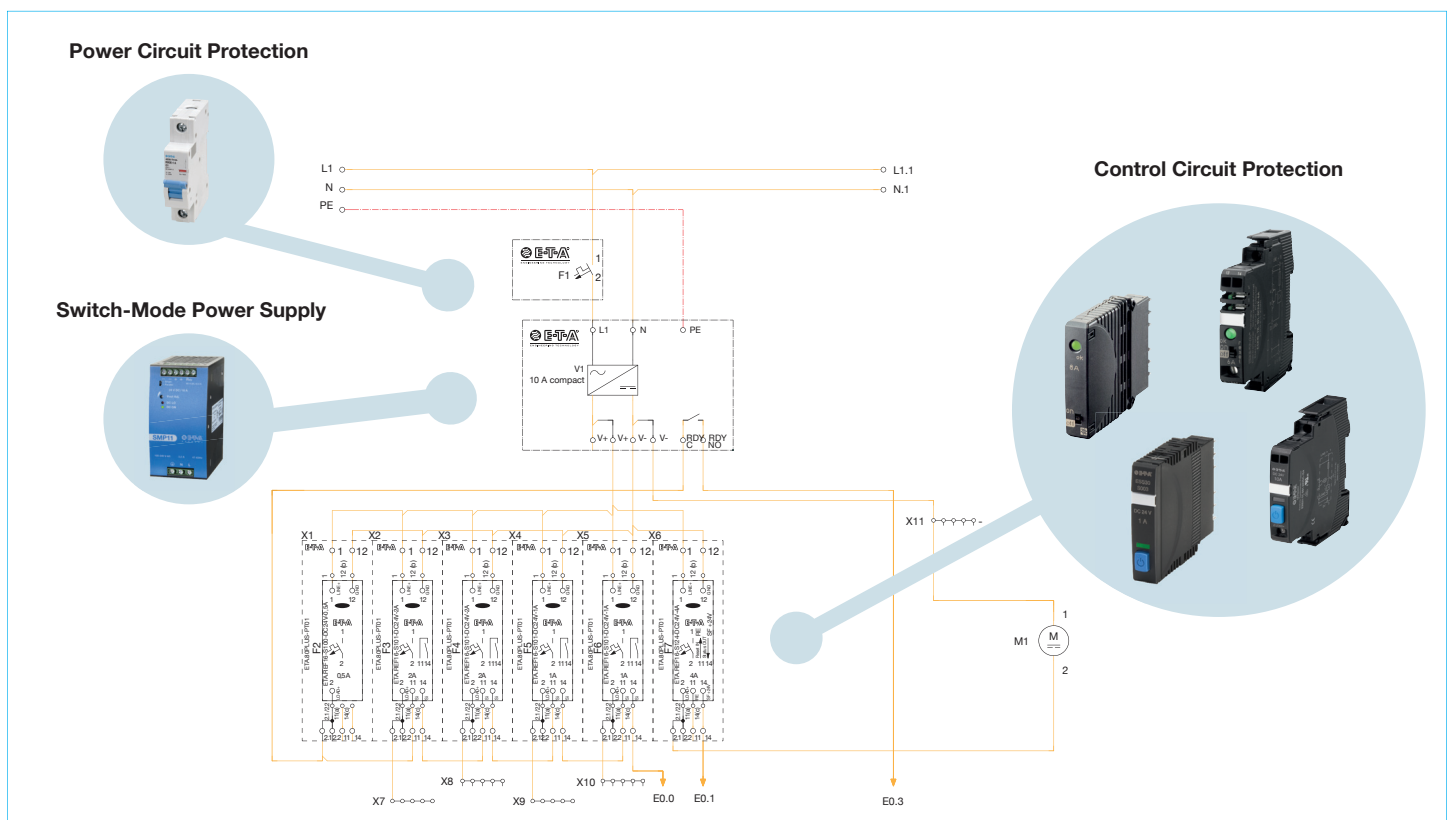
## Primary AC Circuit Protection

The 4230-T thermal magnetic MCB protects the primary AC supply of the Switch Mode Power Supply. Single pole, two pole, and three pole versions are available, depending on the power supply.

## 24 VDC Control Circuit Protection

The second part of the selective load protection is provided by an electronic overcurrent protection device with active linear current limitation. The overcurrent protection devices (ESX10-, ESX10-T, ESS30 and ESS31-T) are available with and without physical isolation and can be individually specified based on the application. An electronic protection device is required because only limited power is available in the event of an overload when using switch-mode power supplies. The max. power factor is only 1.5 times rated current. In theory, this would be exceeded in the event of an overload.

The power supply turns down the output voltage to self-protect itself. In this case, selective load protection means that the electronic overcurrent protection device responds quicker to the overload condition than the power supply. This means: Before the voltage of the power supply unit drops, the electronic circuit protector limits the max. current flow via active linear current limitation and prevents the entire supply from overloading.



4230	ESX10-T	ESS31-T
		
<p>Power &amp; Control Circuit Protection Thermal Magnetic – DIN Mount</p> <ul style="list-style-type: none"> <li>• cULus 489, cULus 1077, IEC</li> <li>• 120-240-277-480VAC / 60-125VDC</li> <li>• 1-63A</li> <li>• 17.6mm</li> </ul>	<p>Control Circuit Protection Electronic – DIN Mount</p> <ul style="list-style-type: none"> <li>• UL2367, UL508, UL1604, TUV, GL, IEC, UL Class I Div II All Groups, Atex</li> <li>• 24VDC</li> <li>• .5-12A</li> <li>• 12.6mm</li> </ul>	<p>Control Circuit Protection Electronic – DIN Mount</p> <ul style="list-style-type: none"> <li>• UL1077, VDE</li> <li>• 24VDC</li> <li>• .5-12A</li> <li>• 12.6mm</li> </ul>
410, 520, 530	ESX10	ESS30
		
<p>Power &amp; Control Circuit Protection Thermal Magnetic – DIN Mount</p> <ul style="list-style-type: none"> <li>• UL1077</li> <li>• 240-415-500VAC / 110VDC</li> <li>• 10-125A</li> <li>• 22mm</li> </ul>	<p>Control Circuit Protection Electronic – Pluggable</p> <ul style="list-style-type: none"> <li>• UL2367, UL508, UL1604, TUV, GL, IEC, UL Class I Div II All Groups, Atex</li> <li>• 24VDC</li> <li>• .5-12A</li> <li>• 12.3mm</li> </ul>	<p>Control Circuit Protection Electronic – Pluggable</p> <ul style="list-style-type: none"> <li>• UL1077, VDE</li> <li>• 24VDC</li> <li>• .5-12A</li> <li>• 12.3mm</li> </ul>
1180	PVSEC	Module 18Plus
		
<p>Control Circuit Protection Thermal – Pluggable</p> <ul style="list-style-type: none"> <li>• cULus 1077, VDE, CSA, IEC</li> <li>• 250VAC / 72VDC</li> <li>• 1-10A</li> <li>• 8.2mm</li> </ul>	<p>Photovoltaic Applications</p> <ul style="list-style-type: none"> <li>• VDE, IEC 60947-3, UL1699B</li> <li>• 1000VDC</li> <li>• 30A</li> <li>• Local &amp; remote switch, lock-out tag-out</li> <li>• Arc fault detection module</li> </ul>	<p>Power and Control Circuit Protection</p> <ul style="list-style-type: none"> <li>• UL1059, EN60497-7-1</li> <li>• DC 24V, DC 80V</li> <li>• 80A Total Distribution</li> <li>• 20A Individual Loads</li> </ul>



## 2210-T



Power & Control Circuit Protection  
Thermal Magnetic – DIN Mount

- cULus 1077, CSA, VDE, GL, CCC IEC
- 120-240-277-480VAC / 65VDC
- .1-32A
- 12.5mm

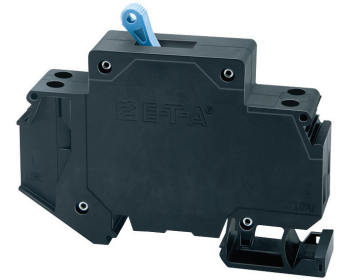
## 201



Power & Control Circuit Protection  
Thermal Magnetic – DIN Mount

- cULus 1077, CSA, VDE, IEC
- 120-240VAC / 80VDC
- .05-16A
- 12.5mm

## 8340-T



Power & Control Circuit Protection  
Hydraulic Magnetic – DIN Mount

- UL1077, CSA, VDE, CCC
- 240-415VAC / 80VDC
- .2-50A
- 19mm

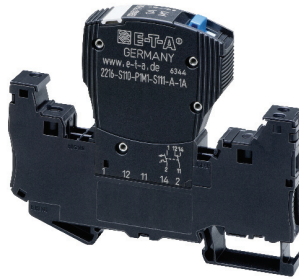
## 2210-S



Power & Control Circuit Protection  
Thermal Magnetic - Pluggable

- UL1077, CSA, CCC, GL, VDE, IEC
- 120-240-277-480VAC / 65VDC
- .1-25A
- 12.3mm

## 2216-S



Power & Control Circuit Protection  
Thermal Magnetic – Pluggable

- cULus 1077, VDE, IEC
- 120-240-277VAC / 50-80VDC
- .5-16A
- 12.3mm

## REF16



Control Circuit Protection  
Electronic – Pluggable

- UL2367
- 24VDC
- .5-10A
- 12.3mm

## SMP



Switch Mode Power Supply

- UL508, UL60950-1, EN6095701
- 1ph 120/240VAC, 3ph 480VAC Input
- DC 24V Output
- 5A, 10A, 20A, 40A

# A Closer Look at the Automation and Process Control Market

**Industrial Equipment**



**Oil & Gas**



**Power & Energy**



**Automotive Assembly**



**Solar**



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