

ESS20/ESX10: Overcurrent Protection at DC 24 V

E-T-A safety with international approvals



Technical Information

Electronic Circuit Breaker Type ESS20 Electronic Circuit Protector Type ESX10

Availability and safety of production equipment are paramount in modern manufacturing plants. However, DC 24 V switch-mode power supplies, which are widely used in industry today, may stop entire plants as their self-protecting characteristics will shut down the output in the event of overload or short circuit currents with the result that one faulty load in the system can lead to complete disconnection of all loads. The **E-T-A Electronic Circuit Breaker ESS20** helps to

overcome this problem and ensures selective disconnection with genuine physical isolation in the event of a fault (overload or short circuit) while allowing individual loads to start up. The circuit breaker therefore meets important requirements of UL 1077, the EN/IEC 60934, the European Machinery Directive 2006/42/EC, of European standard EN60204-1 and for CE marking. It prevents a DC 24 V power supply from being shut down inadvertently even with load lines with high attenuation.

In the event of a sustained fault condition it physically disconnects the faulty load circuit from the 24 V supply with well-proven circuit breaker technology.

Purely electronic disconnection of machinery fitted with a safety PLC to prevent dangerous machine operation in the event of a failure is provided by the **E-T-A Electronic Circuit Protector ESX10**: selectively and reliably according to UL 2367.

Technical data	ESS20	ESX10
Operating voltage	DC 24 V (DC 18...32 V)	DC 24 V (DC 18...32 V)
Load disconnection	electronic disconnection + physical isolation	electronic disconnection
Switch-on delay	typically 0.3 s	typically 0.5 s
Rated current I_N	0.5 A to 10 A	1 A to 12 A
Overload disconnection	typically $1.1 \times I_N$	typically $1.1 \times I_N$
Short circuit current I_{CN}	$1.5 \times I_N$ to $1.8 \times I_N$ (depending on I_N)	$1.3 \times I_N$ to $1.8 \times I_N$ (depending on I_N)
Trip times overload short circuit	typically 5 s typically 100 ms...5 s	typically 3 s typically 100 ms...3 s
Signalisation	LED status indication signal contacts status output SF	LED status indication signal contacts status output SF
Signal input	remote reset	remote reset remote ON/OFF
Manual actuation	ON/OFF-button	ON/OFF-button
Approvals for overcurrent protection	UL1077 EN 60934 IEC 60934	UL 2367 cUL 508 CSA 22.2 No. 142



Overcurrent protection by means of the Electronic Circuit Breaker ESS20 and the Electronic Circuit Protector ESX10.



Combining safety and power distribution: E-T-A power distribution system Module 17plus fitted with Electronic Circuit Breakers ESS20.

Features and Benefits

- Professional overcurrent protection prevents undefined fault conditions, stoppages and downtime
- Integration of tailor-made safety at the equipment design stage saves expensive retrofitting
- Standard-compliant components facilitate global installation of customers' equipment (EN60204-1, CE certification, UL, CSA, EN and IEC approvals)
- The use of pre-wired E-T-A power distribution systems Module 17plus or SVS reduces wiring and installation costs



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