

April 2003

W0403/ETA

**Unique E-T-A electronic circuit breaker selectively protects individual component circuits powered by SMPS**

*Rail mounting device maintains productivity in manufacturing plants*

E-T-A Circuit Breakers has introduced a new electronic circuit breaker designed to selectively protect individual component circuits powered from single switch-mode power supplies (SMPS). Easily added to a DIN/EN rail, the new ESS20 provides advanced circuit protection for components used in factory automation systems, including sensors, actuators, field bus couplers and controls.

The E-T-A ESS20 Electronic Circuit Breaker solves a serious problem affecting manufacturing lines and processes powered by 24V DC switch-mode power supplies. Without the ESS20, an overload in a single circuit will cause a power supply to shut down the output to all the circuits it supplies. On recovery it may go into 'hiccup' mode. Costly downtime, scrap and even danger to personnel may result.

The ESS20 physically isolates single faulty outputs, while allowing all other load circuits connected to the same SMPS to continue working as normal. It is designed to limit the prospective load current to a maximum of 1.8 times the rated current and rapidly disconnects the output in the event of an overload or short circuit. For optimum adjustment to the particular application, the current rating of the ESS20 is switch selectable for 3A or 6A. An LED, and integral auxiliary contacts, provide status and failure indication for visual verification and as a signal to a logic controller or factory software. An On/Off button also enables manual isolation of the load circuit.

Utilising Electronic Circuit Breakers type ESS20, it is possible to design highly efficient,

Continued/.....

cost-effective manufacturing equipment and complex industrial lines. Under worst-case failure conditions, the fault current will always be limited to a minimum value, the rest of the system will remain in operation, and power can be quickly restored once the faulty output circuit has been corrected. This guarantees maximum efficiency and productivity of the entire process.

The ESS20 is a further addition to E-T-A's product family of electronic circuit breakers. It has a width of only 12.5mm and is designed to be plugged directly into an E-T-A power distribution socket, Module 17plus, which is mountable on a DIN/EN rail. All electrical connections are made by means of convenient screwless terminals.

Traditional protection solutions do not provide the answer. Circuit breakers with fast operating characteristics would be likely to cause nuisance trips during current peaks, and capacitive loads such as sensors and interfaces could not be reset. On the other hand, neither delayed operation nor high performance circuit breakers will respond adequately in this situation to overcurrents. The power supply will therefore switch off completely, bringing all connected loads, i.e. the entire system, to a standstill.

*www.e-t-a.com* offers further information on E-T-A and its products.

— E N D S —

**Note to editor:**

E-T-A designs and manufactures a broad range of electro-mechanical and electronic products for circuit protection, control and instrumentation, including the world's largest range of circuit breakers for equipment (CBEs). E-T-A equipment is specified and installed by a wide variety of industrial OEMs and end-users, with key markets including air, sea and land transport, process control, computers and communications, medical equipment, domestic appliances, machine tools and robotics.

E-T-A is an international company with headquarters in Altdorf, Germany and production facilities in several other countries, together with marketing, sales and technical operations throughout the industrial world. Its European, North American and Far Eastern markets are served by some 1,500 employees.

The World Wide Web site *www.e-t-a.com* offers further information on E-T-A and its products.