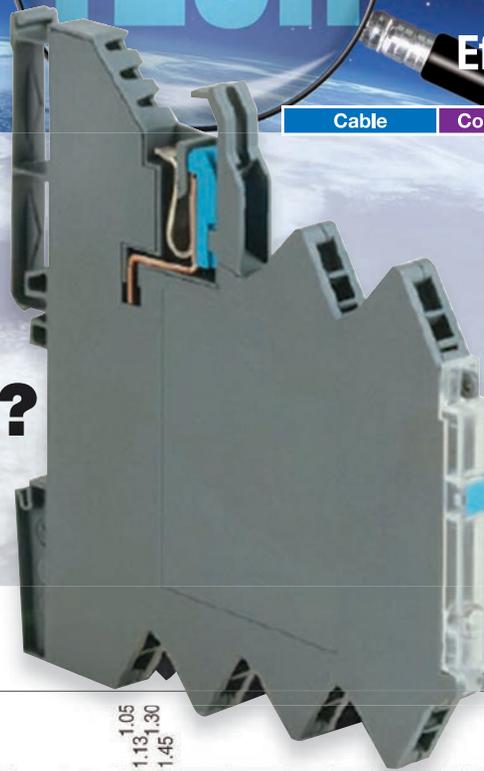
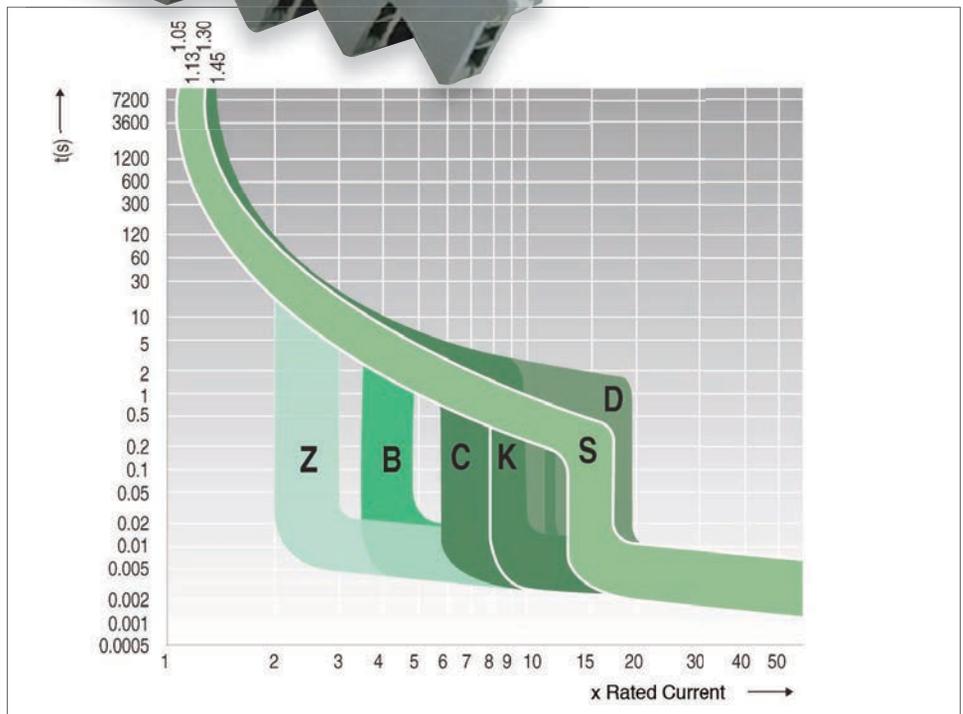


Want to manage your 24VDC supply?



With the ever increasing demand on 24VDC supplies due to the machine and low voltage directives, power supplies have advanced in their technology, reducing in size, being more energy efficient and are able to deliver more current “Power Boost”. Traditionally miniature circuit breakers (MCB’s) or fuses are used for branch circuit protection which haven’t really change only physically in size since originally invented.

But have you ever considered what would happen if you had an overload on a branch circuit i.e. 24VDC feed has gone into the manufacturing plant (field wiring), a cable is cut and a short circuit happens creating a high impedance load path. This then draws excess current from power supply. With traditional MCB’s or fuses you have a reaction time before that protection device can trip dependant on the type fitted (see figure 1). Dependent on the specification of the power supply with or without the “Power Boost” you could also be well within the operating parameters of the power supply. So the result is the power supply continues to supply current down that branch until something goes catastrophic i.e. a fire.



Unlike traditional miniature circuit breakers, electronic fuses monitor and limit the current with greater accuracy and cut-out faulty branches with much shorter delays. This means that a faulty branch can be safely opened even with long cable runs or small wire sizes. In practice there are typically three types of loads that need to interact in a machine;

- Sensitive electronics
- Robust electromechanical components
- Safety relevant circuits

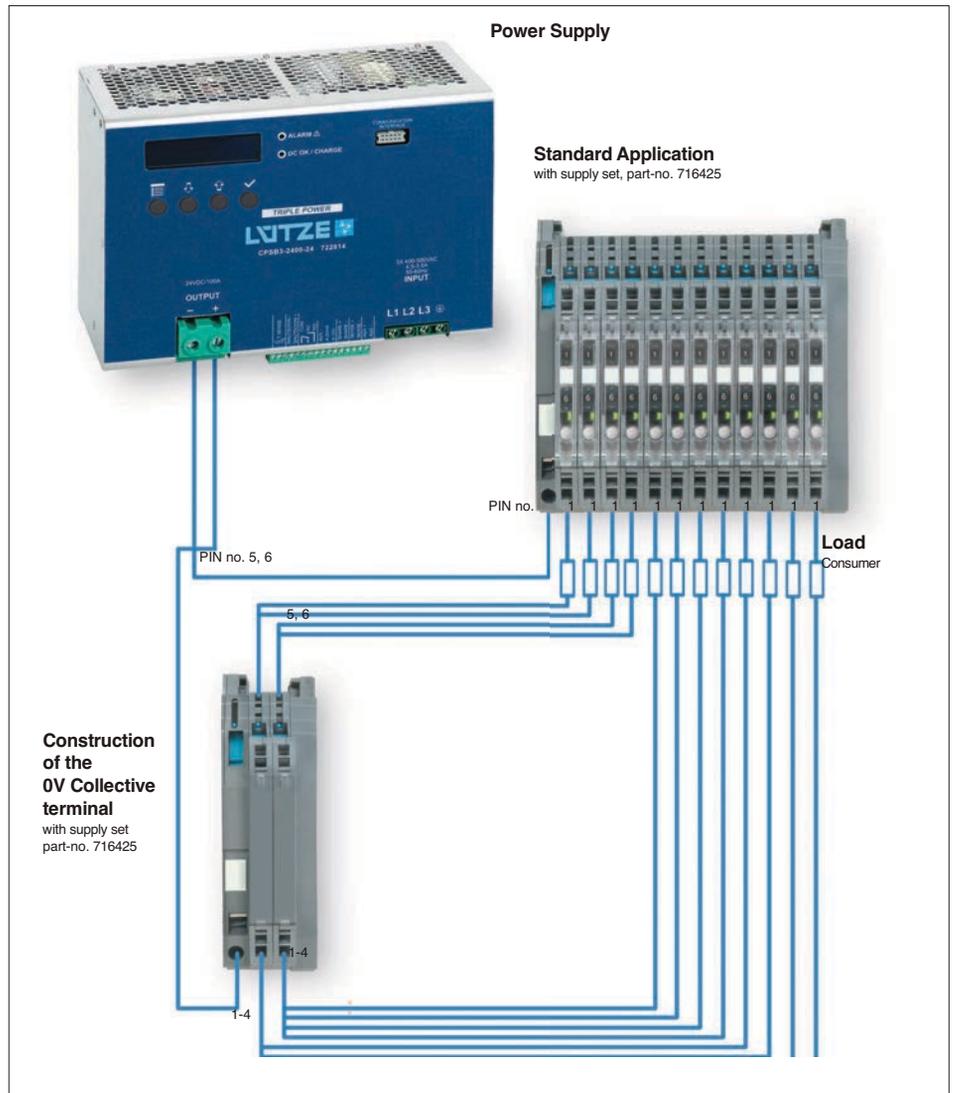
Using a shared power supply unit for types of loads has been standard practice. Especially sensitive are the electronic loads such as a PLC that even with the shortest interruptions of the supply voltage suffers a loss of function or an accidental re-start.

The latest solution on the market from Lutze is capable of optimally operating capacitive loads to start heavy loads and quickly detecting an overcurrent in operation and switching off only the

affected path. Such a system should of course store the fault so as to prevent anger from switching back on and permit diagnosis.

The Lütze LOCC-Box system meets those requirements in a modular design with additional intelligent functions. To meet the widely varying demands on switch-off response, the LOCC-Box system features the facility to program 10 different characteristics by way of a switch. With 5 standard characteristics pre-programmed into the device with the option to create custom characteristics. The nominal current range can additionally be selected with switch settings from 1A to 10A. The adjustable current range and characteristic is very important when retrofitting, as in such cases the device protection often has to be modified and adapted. As additional information, the capacity utilisation of the path is indicated by an LED. When 90% of the programmed current value is reached the status LED starts to flash. In the event of a switch-off due to overcurrent or short-circuit, the LED changes from green to red.

A 24V signal is set as a collective fault warning. This eliminates the need to install and wire additional auxiliary contacts. A restart after clearing the fault is then effected either using the mechanical switch on the device or from the main system by remote control. This channel based switching facility is of great importance in particular in the commissioning phase of a system, as it enables individual system components to be activated and checked specifically. With ever increasing information required from the



field onto industrial networks such as Ethercat, Profinet, Profibus, Ethernet IP, RS232 and USB to reduce installation time and have real-time fault diagnosis this is possible at the 24VDC level with

the LOCC Box Net via a gateway. The user can obtain the values for Current/ Voltage/ I²T curves and operating times on individual slices using the network or via USB with Lütze LOCC Pads software.



For further information request your copies: **Lütze: Efficiency in Automation**



@luetze_uk LuetzeSolutions YouTube Luetzesolutions

www.lutze.co.uk