Safe Disconnection and Easy Mounting

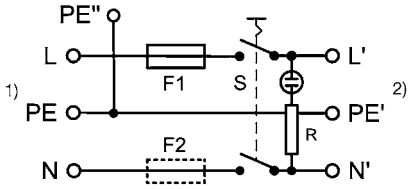
IEC Appliance Inlets with Line Switch

As energy efficiency is becoming increasingly important in the electronics industry, many efforts are made to reduce power consumption in standby mode, the most effective being, evidently, safe disconnection by means of a mechanical switch.

Reliable disconnection from the power supply must take place directly at the power entry. Hence, the combination of an IEC connector and a line switch combined to form a power entry module appears to be a possible solution. Its different application areas, however, require different, specific solutions. The aspects of supply power and of the referenced application standards, the ergonomic demands concerning use as well as the installation and finishing methods involved are decisive for the power entry modules' design.

Application Standard and Performance Aspects

It is a standard requirement in medical technology that both the phase and the neutral line are disconnected. Therefore SCHURTER's product range includes also power entry modules with 1-pole and 2-pole switches (fig. 1). The components, manufactured in compliance with IEC connector standard IEC 60320, are rated for 2.5 A / 10 A or 16 A max.
Especially inductive or strongly capacitive loads, typically found in switching power supplies, necessitate high switching capability and a long useful life or, in other words, a large number of switching cycles. SCHURTER achieves this goal by using high-quality components rated for inrush currents of up to 100 A in order to keep the switching contacts from fusing together.



1) Line
2) Load

Figure 1: 2-pole version of a power entry module

Ergonomics and Design

SCHURTER has covered the ergonomic aspects such as switching state indication, the prevention of inadvertent actuation or user-friendly access, in different product lines.
SCHURTER's DC and DD lines feature recessed switches preventing inadvertent actuation using a projecting protective collar (fig. 2). This product line also offers several illumination options for switching state indication.

Figure 2: DC / DD series with recessed switch

The IEC appliance inlets are generally mounted on a device's rear, while the controls are placed on the front. For this task, too, SCHURTER has an appropriate solution: a switch at the inlet that can be actuated mechanically from the front (fig. 3). One of this solution's distinguishing characteristics is that it is immune to electric interference; at the same time, it represents the zero-current standby solution.

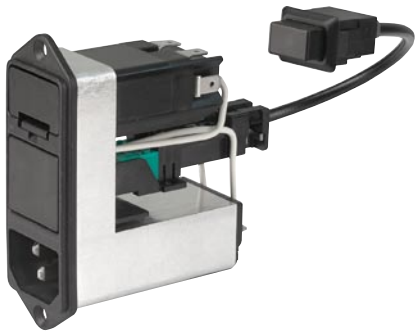


Figure 3: switch with "remote controlled actuation"

Mounting and Connecting Technology

Different applications necessitate different approaches to optimally mounting and connecting inlets. This involves taking into account minimum dimensions required for installation as well as customer-specific assembly methods. For PCB mounting, SCHURTER's DD21 and the filtered DD22 are an ideal choice (fig 4). Their connecting pins are soldered directly onto the circuit board using THT, i.e. Through Hole Technology, thus completely eliminating the need for electrical wiring. The power entry modules are fastened using screws.

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Figure 4: Power entry modules for PCB

Functionality and Solutions

In many applications, the space dedicated to the power input is highly restricted. The panel cutout dimensions, the space required on the PCB as well as the available depth represent major selection criteria. SCHURTER's FELCOM line combines a very low mounting depth with great flexibility in terms of extra functions (fig. 5). In addition to the IEC connector and the line switch, fuse holders, distribution units and line filters are modularly configurable. Features such as circuit breakers or voltage selectors are available in other product lines.

Figure 5: FELCOM with very low mounting depth

The great variety of different IEC appliance inlet models featuring switches and other functions allows manufacturers to develop solutions adapted to individual requirements in the most diverse of application areas. Hence, SCHURTER's products ensure ease of use combined with absolutely safe power input and the possibility to deliberately disconnect the power.

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