WE PROTECT YOUR ELECTRONICS: IN 19” AND BEYOND

ABOUT PENTAIR
Today, Pentair is the global water, fluid process, thermal management and equipment protection partner with industry leading products and solutions. Around the globe, over 30,000 Pentair employees work in collaboration to provide fresh insights and drive innovation which promotes a healthier and safer environment for all.

ABOUT SCHROFF
The Schroff brand contains a broad product portfolio from printed circuit board (PCB) accessories, such as card retainers and extractors, front panels and handles to subracks, cases, backplanes, power supplies, cabinets and pre-assembled chassis for embedded computing systems. The brand Schroff, which belongs to the business unit of Pentair Technical Solutions, has been a world leader in electronics packaging for over five decades.

MULTI-PURPOSE ELECTRONICS CABINETS
When it comes to protecting your ruggedized electronic devices or mission-critical IT infrastructure, get the performance you want and the specifications you need with Schroff cabinets. We offer steel and aluminum frame cabinet platforms with a wide range of dimensions and cover parts. Choose from different IP / NEMA protection levels, as well as options such as perforated doors, fan units and air-to-water heat exchangers. A RFI shielding option for up to 60 dB at 1 GHz / 40 dB at 3 GHz or earthquake resistance up to Bellcore Zone 4 is also available to withstand extreme environments while meeting the strictest safety requirements. To complete your project, we can assemble, integrate and test your mechanical and electrical accessories.

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<tr>
<th>Features</th>
<th>Standards</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Static load</td>
<td>Internal load testing and measurement of deformation</td>
<td>1600 kg [3500 lbs] (tested with 2000 kg [4400 lbs], safety 25%)</td>
</tr>
<tr>
<td>Dynamic load</td>
<td>IEC 61587-1 and internal testing</td>
<td>Slim-Line 400 kg [880 lbs], Heavy-Duty 800 kg [1700 lbs], with reinforcement up to 1000 kg [2200 lbs]</td>
</tr>
<tr>
<td>Shock test</td>
<td>IEC 61587-1</td>
<td>Maximum acceleration: 5 g duration: 11 ms</td>
</tr>
<tr>
<td>Vibration test</td>
<td>IEC 61587-1</td>
<td>Frequency: 5 Hz - 100 Hz acceleration: 1 g</td>
</tr>
<tr>
<td>Earthquake test</td>
<td>IEC 61587-2 GR-63-CORE</td>
<td>Heavy-Duty standard up to Bellcore Zone 3 (acceleration 3 g, frequency 1 Hz ... 5 Hz) with strengthening up to Bellcore Zone 4 (acceleration 5 g, frequency 2 Hz ... 5 Hz)</td>
</tr>
<tr>
<td>Electromagnetic compatibility [EMC]</td>
<td>IEC 61587-3</td>
<td>60 dB at 1 GHz, 40 dB at 3 GHz</td>
</tr>
<tr>
<td>Type of protection</td>
<td>DIN VDE 0470 EN 60529</td>
<td>IP 20 and IP 55</td>
</tr>
<tr>
<td>Installation options</td>
<td>IEC 60297-3-100 ETS 3000-119-3</td>
<td>Slim-Line 19&quot; or ETS, Heavy-Duty 19&quot;</td>
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PERFORMANCE & DEPENDABILITY FOR CRITICAL SYSTEMS
MAXIMUM RELIABILITY
IN THE MOST DEMANDING ENVIRONMENTS

The design of VARISTAR is based on a welded frame construction. Its modular conception, based on two load classes, ensures the highest flexibility on a single platform. At its core, it features robust steel profiles, allowing the greatest range of applications. Two profiles with different cross-sections cater for two principal sets of requirements – Slim-Line and Heavy-Duty.

HEAVY-DUTY
The robust Heavy-Duty frame was especially designed for high load-carrying applications. Thanks to its higher rigidity it meets the requirement classes DL5 and DL6 in accordance with IEC 61587-1 while accepting static loads of up to 1600 kg (3500 lbs). Dynamic tests verify earthquake protection to Zone 4.

Benefits at a Glance:
• Maximum stability
• Fulfills IEC 60297-3-100 (19”)
• Excellent earthquake resistance (Bellcore Zone 3 without reinforcement, Zone 4 with reinforcing brackets)

SLIM-LINE
The specially developed hollow-chamber Slim-Line profile meets the requirement classes DL5 and DL6 for dynamic load in accordance with IEC 61587-1 with minimum material outlay; and does so with installed loads of up to 400 kg (880 lbs).

Benefits at a Glance:
• Maximum width for installations
• Fulfills IEC 60297-3-100 (19”)
• Fulfills IEC 60917-2-2 (hard metric)
• Internal and external dimensions to ETS 300 119-2/3

PEERLESS AND EFFICIENT PROFILE
The VARISTAR profile has mounting holes in all three axes (height, width, depth), following a 25 mm (1”) grid. This allows for the greatest flexibility in installing components and accessories. For instance, 19” panel/slide mounts or cable eyes may be installed in a 600 mm (23.6”) wide cabinet without additional depth members.

INSTALLATION OF 19” RACK ANGLES
Can be mounted directly on the frame in 600 mm (23.6”) wide cabinets. In 800 mm (31.5”) wide cabinets you can choose the following options according to your requirements for static load:

Reduction Bracket: This covers most electronic applications.
Crossbar: This design supports applications with extremely high static load requirements of up to 1600 kg (3500 lbs).

MECHATRONIC ACCESS CONTROLS
Depending on the access control requirements, various access control handles can be combined like: integrated card reader units that allow decentralized access control solution; or all locks can be networked together, creating a centralized control and monitoring system by using appropriate software.
RUGGED AND SECURE
FOR DEFENSE & TRANSPORTATION

From traffic and transport planning, to guidance systems and traffic management systems to highly ruggedized military applications, one thing is of highest priority: uncompromising security.

VARISTAR is designed to provide outstanding shock and vibration stability, offers shielding against high frequency interference and is built to provide long-term durability you can rely on.

With attention to every detail, the proven design, quality materials and craftsmanship ensure that VARISTAR cabinets will meet your most demanding security tasks in an economically viable way.

HF SHIELDING: TWICE AS GOOD

The VARISTAR shielding principle protects security relevant data from interference radiation. Tested to IEC 61587-3.

The frame profiles are surrounded by a surface set at 45°, fitted with conductive textile gaskets. All cladding parts are electrically connected and induced interference currents flow automatically away via the surfaces. This design principle pays off in two ways: you profit from more effective shielding, yet doesn’t require any costly surface treatments of the frame.

Varistar offers outstanding shielding protection: 60 dB for 1 GHz, 40 dB for 3 GHz.

Effectiveness even in most diverse configurations (like special equipped fan top cover, perforated doors, base plate with cable entries).

Refer to the configurator for more choices.

1. Cabinet with solid door
2. Cabinet with perforated door

SEISMIC PROTECTION

By reinforcing the corners of the cabinet frame, VARISTAR offers certified earthquake-protection to earthquake Zone 4, providing reliable protection anywhere in the world.

High mechanical stability to Bellcore Zone 4 in accordance with IEC 61587-2.

SHOCK ABSORBERS

For even higher levels of shock and vibration resistance, VARISTAR can be equipped with shock absorbers.

Shock and vibration resistant to DL6 in accordance with IEC 61587-1 and IEC 60068-2-6.

Tested to MIL-STD-910D.

THE VARISTAR LOCK SYSTEM

The latching system also contributes to protection class and shielding.

Activating the locking bar causes the latches to move in the opposite direction. The frictional forces of the bolts are balanced out and a resulting uneven vertical force on the door is avoided. The doors close easily and are completely sealed. EMC doors are fitted with 4-point locking, IP and server doors with 3-point locking.
SERVICE PLUS
SIMPLY UNBEATABLE!

CONFIGURATION
ServicePLUS allows you to easily configure your specific VARISTAR system based on standard components - for cost effective custom solutions with short lead times.

- Interactive configurator online
- Configuration tables in the catalog
- Telephone configuration hotline
- Power search: quick selection of standard dimensions

Cabinet configuration:
- Height: 24 U to 47 U
  Width: 600 mm (23.6") and 800 mm (31.5")
  Depth: 300 mm (11.8") to 1200 mm (47.2")
- Cabinets are available in 21 standard colors

EXPRESS
When fast has to be faster.
In many projects speed is of the essence, and flexibility a decisive criterion. With its comprehensive express options, ServicePLUS express gives you maximum flexibility in regards to lead time.

- Plan economically
- Control manufacturing time
- Receive your items superfast

MODIFICATION
Small changes. Big effects!
Custom cut-outs and special colors for VARISTAR cabinets, fast and easy:

- Holes, cut-outs and special colors at set prices
- 3D PDF preview available by order number
- CAD download by order number

Ready for delivery in 15 working days. You can find our current range of special colors and drawings online.

ASSEMBLY
Assembled by professionals. Twice the benefit!
Let our specialists install all mechanical, electrical and electronic components for you.

For turnkey products, ServicePLUS assemblies allow you to focus on your core activity without interruption, while we carry out the complete assembly of all your system components, on time and with technical competence.

WWW.SCHROFF.BIZ/CABINET_CONFIGURATOR/TICKETS_EN.PHP
Depending on the amount of heat generated and the internal and external temperatures, various cooling options are available for VARISTAR cabinets to ensure effective cooling of the installed electronics. Cooling concepts include air-filtered fans, fan trays or controlled airflow systems through to air/air or air/water heat exchangers and compressor-driven air conditioners.

### Description

<table>
<thead>
<tr>
<th>Description</th>
<th>Natural convection via thermal radiation</th>
<th>Free convection through top-cover opening</th>
<th>Free convection through openings in the doors/rear panels</th>
<th>Forced cooling with air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of protection</td>
<td>≤ IP 55</td>
<td>≤ IP 55</td>
<td>≤ IP 20</td>
<td>≤ IP 20</td>
</tr>
<tr>
<td>Noise level approx.</td>
<td>0</td>
<td>0</td>
<td>55 ... 65 dB [A]</td>
<td>34 ... 67 dB [A]</td>
</tr>
<tr>
<td>Ambient conditions</td>
<td>$T_i &gt; T_u$</td>
<td>$T_i &gt; T_u$</td>
<td>$T_i &gt; T_u$</td>
<td>$T_i &gt; T_u$</td>
</tr>
<tr>
<td>Cooling capacity approx.</td>
<td>&lt; 500 W</td>
<td>&lt; 500 W</td>
<td>&lt; 500 W</td>
<td>&lt; 2000 W</td>
</tr>
</tbody>
</table>

### Forced cooling with air

<table>
<thead>
<tr>
<th>Description</th>
<th>Forced cooling with air</th>
<th>Forced cooling with air</th>
<th>Cooling with coolant</th>
<th>Cooling with water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of protection</td>
<td>≤ IP 54</td>
<td>≤ IP 54</td>
<td>≤ IP 54</td>
<td>≤ IP 54</td>
</tr>
<tr>
<td>Noise level approx.</td>
<td>39 ... 71 dB [A]</td>
<td>55 ... 75 dB [A]</td>
<td>50 ... 81 dB [A]</td>
<td>50 ... 60 dB [A]</td>
</tr>
<tr>
<td>Ambient conditions</td>
<td>$T_i &gt; T_u$</td>
<td>$T_i &gt; T_u$</td>
<td>$T &lt; 55^\circ C$</td>
<td>$T &lt; 70^\circ C$</td>
</tr>
<tr>
<td>$T_i &lt; 131^\circ C$</td>
<td>$T_i &lt; 158^\circ C$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooling capacity approx.</td>
<td>&lt; 1500 W</td>
<td>&lt; 2000 W</td>
<td>&lt; 2600 W</td>
<td>&lt; 40000 W</td>
</tr>
</tbody>
</table>

1) should be depending on cabinet size, electronic components, location and room cooling concept.

2) >800 W are only possible with own, active cooling through components like servers, etc.
YOUR GLOBAL PARTNER

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