Optimize performance and energy efficiency

Blokset LV switchboard solutions for power distribution and motor control

schneider-electric.com/blokset
Enhanced safety and reliability within your reach

Embodying decades of expertise, Blokset™ solutions are engineered to be complete and personalized low-voltage (LV) switchboards for power distribution and motor control.

Blokset switchboards answer the need for operational safety in today’s high performance LV power applications. Versatile and durable, Blokset switchboards have the comprehensive capabilities and intelligence you need to keep your business competitive.

Greater reliability, flexibility, and intelligence

Blokset solutions combine industry-leading features and designs with Schneider Electric™ support to make implementation and operation quick and reliable so that you can lower costs and realize a faster return on your investment. A fully functional switchboard with built-in intelligence for energy efficiency, Blokset is a simple and modular solution. It is easy to choose, intuitive to use, cost effective, and simple to install and upgrade.

Benefits at a glance

- High quality design for safety and performance
- High continuity of supply, even in severe environments
- Smart solutions for energy savings and optimized operation
- Pre-engineered modular architecture for easy implementation
- Quick return on investment
- Localized support and services for ease of ownership

Blokset, the switchboard solution

more than 500,000 cubicles installed. Blokset LV switchboards are trusted by customers worldwide.
Type-tested for high electrical installation and operational safety

With IEC 61439-1&2 and full type-testing by independent ASEFA- and LOVAG-certified laboratories, you can have the peace of mind that safety is engineered into every Blokset switchboard.

With Blokset, protection is never left to chance

From conception through design, installation, and everyday operation, you can count on our commitment to maximize safety. Withdrawable drawers have three interlocked positions — connected, test, and disconnected, plus drawer stop — to improve operator safety when connecting and testing.

Smart engineering and user-friendly operation

- Built-in intelligence for energy efficiency and continuity of service
- Smart-grid ready for enhanced control and monitoring
- Fully interoperable switchboards, functional units, and devices
- Compact footprint allows more equipment and functions
- Withdrawable functional units for high availability and continuous processes
- Fixed functional units for economical applications

Improved safety measures

- Forms of internal separation up to 4b
- Embedded interlock systems to secure on-load disconnection
- Live-part protection up to IP xxB
- Fully insulated bus bars (optional)
- Padlockable with three different locks
- Protection with optional doors and accessories

Internal arc withstand

- Fully type-tested in compliance with IEC TR 61641 edition 3 (internal arc) to increase safety for personnel and equipment
- Internal arc containment up to 100 kA/0.4 s
- Operator protection at three levels:
  - Horizontal and vertical busbars
  - Functional units, including withdrawable drawers
  - Outgoing cable connections

Electrical safety for personnel

Tested and certified by independent ASEFA and LOVAG labs.

Note: In working environment, full operator safety measures should always be adopted.
Three interlocked drawer positions

Industry-leading live part protection, plus drawer stop

Test position

Disconnected position

Electrical safety for personnel

With Blokset, protection is never left to chance
Personalized solutions for diverse applications

Trusted worldwide for diverse industrial and infrastructural applications, Blokset solutions are personalized to fully satisfy different performance and harsh environmental requirements.

Schneider Electric inside: quality and compatibility

A robust architecture, type-tested, standardized modules devices work together to improve functionality, continuity of supply, and installation reliability even in very difficult conditions.

- All components and accessories are designed by Schneider Electric and manufactured to rigorous quality standards
- Compatibility between switchboards, functional units, and built-in devices is tested and validated
- Schneider Electric components have outstanding electrical and mechanical consistency and electromagnetic compatibility

Durability in difficult environments

- Anticorrosion: surface treatments on metallic sheets protects against corrosion and salt-spray
- Tin, nickel, or silver busbar coating on copper conductive parts for H2S and SO2 atmosphere withstand
- 2G version for seismic or high-vibration environment
Mining, metals, minerals industry

Petrochemicals

Water and wastewater industry

Commercial buildings

Airport

Subway and railway systems

Healthcare facilities

Data centres
Note: In working environment, full operator safety measures should always be adopted.
High performance and superior efficiency

15%

Blokset solutions can provide up to 15% energy savings.*

Industry-leading capabilities
• Maximum busbar rating up to 7000 A
• Maximum rating of Power Control Centre (PCC) up to 6300 A
• Maximum rating of Motor Control Centre (MCC) up to 250 kW
• Smart communicating devices for connected switchboards
• Compact design for higher stacking density and optimized footprint
• Upgradeable energized equipment

A disconnectable design for power distribution
The power distribution architecture is designed to offer reinforced electrical isolation.

Power distribution
Power Control Centre (PCC) including protection and power factor correction:
• Main busbar up to 7000 A
• Incomers up to 6300 A (Masterpact™ circuit breakers)
• Feeders up to 6300 A (Masterpact circuit breakers) and 630 A (Compact™ circuit breakers)
• Power factor correction up to 540 kVAR

A flexible, withdrawable design for motor control and power distribution
Compact and powerful switchboards answer the needs of the very demanding motor control and power distribution applications. Combining continuity of supply and reliable operational services.

Motor control
Motor Control Centre (MCC) including protection, starters, and drives:
• Conventional starters up to 250 kW
• Soft starters up to 250 kW
• Drives up to 160 kW

*Based on previous data, 2015. This is not a guarantee of future performance or performance in your particular circumstances.
**Improved versatility and flexibility**

24/7 visibility of energy use and power quality.

Fast, stress-free installation, upgrading, and maintenance

Single front or double front access thanks to back-to-back configuration, top or bottom direct power connections, rear or side power connections for easy installation. Plus, standardized dimensions and an optimized footprint save time and money during installation.

- Fixed, disconnectable, or withdrawable functional units
- Withdrawable drawers size optimization: full and half-widths, different heights from 100 to 600 mm
- Direct power plug connection to the vertical busbar (50 mm pitch)
- Three drawers positions: connected, test, and disconnected
- Drawer position indicators on front faces, and drawer stop
- Horizontal and vertical busbars (flat copper and Linergy) for power distribution
- Withdrawable Masterpact and plug-in Compact circuit breaker modules
- Current transformers inside

Upgrade Blokset while under load

- Easily modify and upgrade your Blokset solution and add new functions as your needs change: scalability while under load, equipping of additional slots in reserved spaces, association of cubicles, fast interchangeability without special tools
- Degree of protection up to IPxxD on busbar and connections on busbar by plug-in clamps
- Customer connection separate from the functional unit (form up to 4b)

Smart devices to improve productivity and energy efficiency

As stand-alone devices or fully integrated solutions, each plug-and-play energy monitoring, motor control, and power factor correction solution within Blokset switchboards offers advanced technology.

- **Energy and power quality metering**
  - PowerLogic™ PM 800, VarplusLogic controller
- **Motor motion control**
  - Altivar™ ATV320, ATV630, ATV930, ATV31, ATV61, ATV71, Alistart™ ATS48
- **Power circuit protection and control**
  - Masterpact MTZ-NW-NT, Compact NS-NSX-NSXm
- **Motor protection, monitoring and control**
  - TeSys™ T, TeSys U, TeSys D, TeSys GV
- **Coupler control**
  - Sepam™
- **Process automation**
  - Quantum, Premium, M340 and M580

Note: In working environment, full operator safety measures should always be adopted.
Fixed, disconnectable, or withdrawable functional units

Withdrawable Masterpact and plug-in Compact circuit breakers

Drawer size optimization

Direct connection to the vertical busbar (IPxxD)
iPMCC by Blokset

Smart panel — built-in intelligence for efficient control and monitoring.

Greater efficiency and enhanced productivity

iPMCC (intelligent Power and Motor Control Centre) is a highly capable and advanced smart solution for fault prevention, protection, and automatic restart. It helps improve energy efficiency and reduce down time for continuous and critical processes.

Save energy up to 15%*

• All equipment works together to lower electrical energy consumption
• Synchronize motors to loads with progressive starters and variable drives, and reduce peak consumption by 50% or more
• Manage reactive power compensation and thermal withstand control to reduce costs

Optimize motor performance

• Motor monitoring and protection with failure activities in accordance with IEC/EN 60947-7-1
• Motor and protection device configuration accessible at all times
• Associated with TeSys T, iPMCC by Blokset enables the detection of faults like no-load running, shaft bearing seizure, abnormal starting or heating, pump cavitations, and pulsating torque

Enhance control and monitoring

• Easy access to real-time information
• Better traceability and control
• Local or remote real-time information access
• Motor operating status and time monitoring (alarms and tripping)
• Parameter monitoring and management of status, measurements, diagnostics, trends, and energy consumption

Boost smart-grid integration

• Pretested communication architectures offering leading industry protocols engineered to optimize asset energy efficiency (Ethernet TCP/IP, Ethernet/IP, Profinet®, DeviceNet®, Modbus, CANopen®, etc.)
• Seamless integration with energy management and control systems, and process automation management systems
• Complete range of design assistance tools

* Based on previous data, 2015. This is not a guarantee of future performance or performance in your particular circumstances.
Note: In working environment, full operator safety measures should always be adopted.
A complete range for diverse applications

For power distribution and motor control including variable speed drives, motor starters, power factor correction, and harmonic filtering.

Maximize ease of ownership through Schneider Electric support

Blokset panel-builder network guarantees you optimum localized service Partner licensed by Schneider Electric

- The Blokset offer can be supplied by licensed panel-builders
- Our partners, selected for their expertise, are trained and regularly audited by Schneider Electric to guarantee high quality equipment and support
- Global network of over 150 licensed panel-builders
- Local presence in all geographic zones

Schneider Electric supports you worldwide

Schneider Electric is a recognized global leader in energy management and power protection. Together with our global network of Regional Equipment Units, we can deliver the products, services, and support you need to be at your most efficient. Our highly skilled service and support professionals help provide business-aligned results for a measurable return on your investment.

Tools and support services

- Validated tools and architectures
- Regional and local services for the installed base, plus assistance and troubleshooting
- Advice and guidance for maintenance and upgrading
- Customized vocational training, on-site or in one of our training centres

Auditing, consulting, and solution engineering

- Customized projects, including critical applications
- Engineering expertise for new and existing sites
- Installation and energy audits
- Enterprisewide energy efficiency solutions
# Blokset switchboard specifications

## General data

<table>
<thead>
<tr>
<th>Applications</th>
<th>power distribution, motor control</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCC (Motor Control Centre)</td>
<td>up to 250 kW</td>
</tr>
<tr>
<td>VSD (Variable Speed Drive)</td>
<td>up to 160 kW</td>
</tr>
<tr>
<td>PCC (Power Control Centre)</td>
<td>incomer &amp; feeder up to 6300 A</td>
</tr>
<tr>
<td>PFC (Power Factor Correction)</td>
<td>up to 6* 90 kVAR</td>
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<tr>
<td>Standards</td>
<td>IEC 61439-1 &amp; 2, IEC TR 61641, IEC 60529</td>
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</tbody>
</table>

## Electrical data

<table>
<thead>
<tr>
<th>Voltage</th>
<th>up to 690 Vac (50/60 Hz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main busbar rating</td>
<td>up to 7000 A</td>
</tr>
<tr>
<td>Distribution busbar rating</td>
<td>up to 3200 A</td>
</tr>
<tr>
<td>Rated short-time current (lcw)</td>
<td></td>
</tr>
<tr>
<td>horizontal main busbar</td>
<td>up to 100 kA rms - 1s (peak current lpk up to 220 kA)</td>
</tr>
<tr>
<td>vertical distribution busbar</td>
<td>up to 100 kA rms - 1s (peak current lpk up to 220 kA)</td>
</tr>
<tr>
<td>Conditional short-circuit current (lsc)</td>
<td>up to 100 kA</td>
</tr>
<tr>
<td>Internal arc withstand current</td>
<td>100 kA – 0.4 s (IEC TR 61641 edition 3)</td>
</tr>
<tr>
<td>Earthing system</td>
<td>TT-IT-TNS-TNC</td>
</tr>
</tbody>
</table>

## Communication

| Protocols                        | Ethernet TCP/IP, Ethernet/IP, Profibus-DP, DeviceNet, Modbus, CANopen, etc. |

## Mechanical data

<table>
<thead>
<tr>
<th>Form</th>
<th>2b/3b/4a/4b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Withdrawability</td>
<td>FFF/WWW</td>
</tr>
<tr>
<td>Seismic withstand</td>
<td>IBC 2006/AC 156 (site class B-C-D, floor level only), IEC68-3-3 (equivalent to Richter scale up to level 9), GOST 17516.1-90 (civil market, all seismic intensity, up to installation level 2)</td>
</tr>
<tr>
<td>Installation</td>
<td>indoor environment type 2</td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IP20, IP31, IP42, IP54</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>- 5 °C to 35 °C/50 °C</td>
</tr>
</tbody>
</table>

## Green Premium™ equipment

- Ecologically designed and manufactured without hazardous materials
- Compliant with RoHS and REACh standards
- Designed for reduced carbon footprint and energy consumption
- Designed for optimal recycling and end-of-life management

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Green Premium™ equipment

Life Is On | Schneider Electric