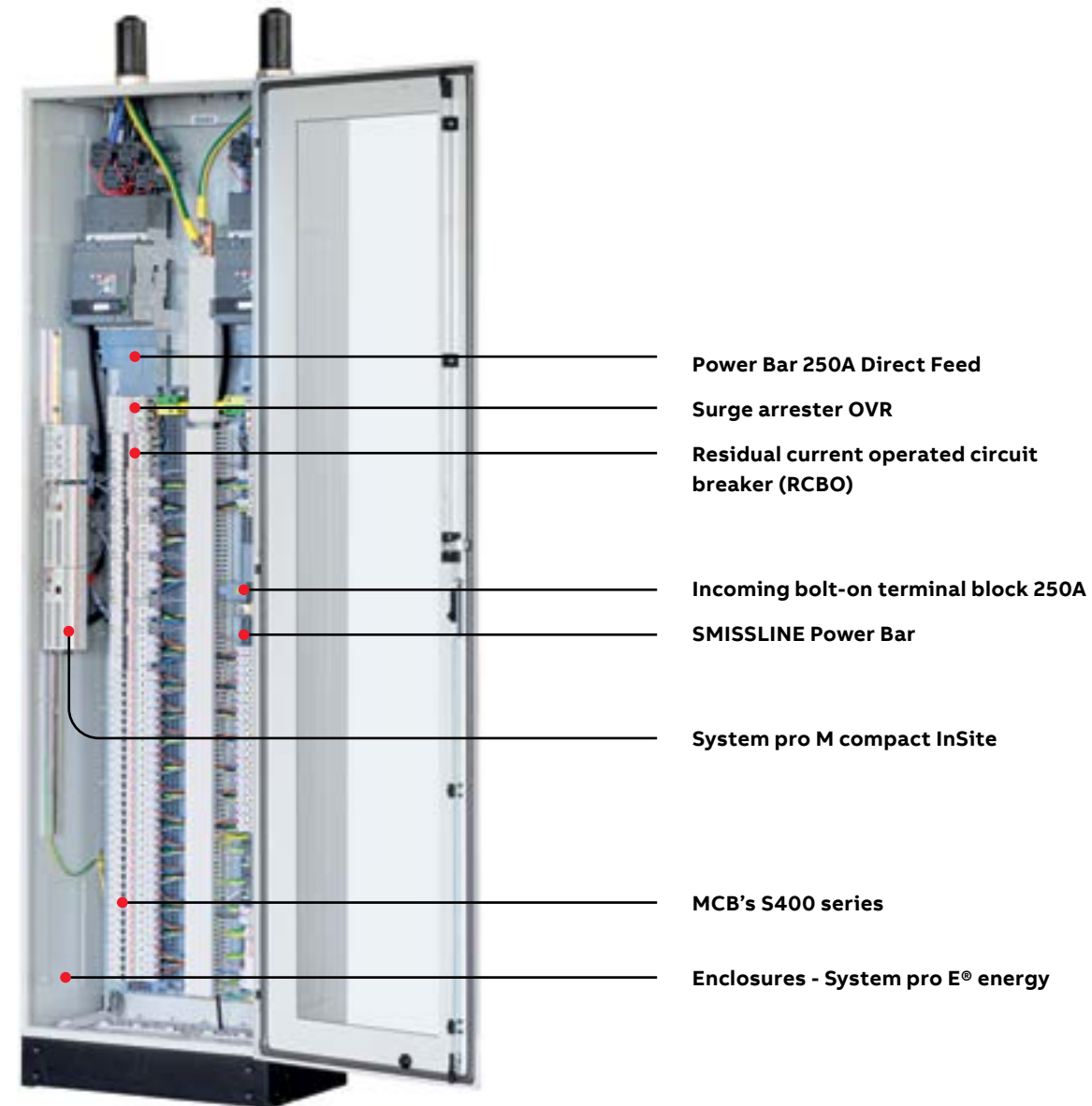


## Components – Devices and Equipment

SMISLINE Power Bar System 250A – New feeder option



- Power Bar 250A Direct Feed
- Surge arrester OVR
- Residual current operated circuit breaker (RCBO)
- Incoming bolt-on terminal block 250A
- SMISLINE Power Bar
- System pro M compact InSite
- MCB's S400 series
- Enclosures - System pro E® energy



Warning! Installation by person with electrotechnical expertise only.

ABB Ltd.  
Fulachstrasse 150  
8200 Schaffhausen  
Switzerland

[abb.com/data-centers](http://abb.com/data-centers)

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB AG does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB AG. Copyright © 2021 ABB. All rights reserved.

### APPLICATION NOTE

## Remote Power Panels with SMISLINE TP Power Bar

More power with less effort



01

**The Power Bar is compatible with all SMISLINE devices and the System pro M compact® InSite. Devices for both UL as IEC applications are available and the different RPP solutions cover a wide range of power for IT-loads up to 720kW.**

#### Less cost

The SMISLINE Power Bar system is rated 250A per phase and only requires a one-sided power feed. Together with the new SMISLINE Power Bar 250A Direct Feed, this configuration saves more than 50 meters of wires for a 1000 A Remote Power Panel (RPP).

#### Less space

The plug-in connection without any wires requires less installation space inside the enclosure. The freed-up space allows more outgoing connections per RPP which reduces the footprint of the power distribution inside the server room.

#### Less effort

Instead of the time-consuming connections via wires, the new SMISLINE Power Bar 250A Direct Feed reduces the assembly time and enables a fast installation on a mounting plate.

#### Less heat

Due to the optimized power-flow, the internal resistance of the RPP is reduced which results in a lower heat dissipation.

The integration of the SMISLINE Power Bar system increases the flexibility, safety and cost efficiency of Remote Power Panels. The new SMISLINE direct feed doesn't require connecting wires between the molded case circuit breaker (MCCB) and the SMISLINE system. Therefore, less space is needed, power density is higher, and the assembly time is shorter.

This makes ABB's RPP an even more efficient solution for the server room power distribution.

#### More flexibility

Direct feed starter packages are available from 32 up to 80 modules and with or without Neutral busbar connection. Also, additional sockets for N and PE are part of the Power Bar System.

#### Higher reliability

The secure bolted connections between MCCB and the SMISLINE Power Bar system reduces the risk of faulty wiring and increases the reliability of the power distribution. At the same time, the power distribution remains touch proof and breakers can be mounted and dismantled without interrupting mains power. More than 30 years of experience has

#### Technical data RPP

Rated current $I_n$	250-1000 A
Outgoing connections	64 - 256
Rated operational voltage $U_e$	240/415 V
Max. Power	180 - 720 kW
Rated peak withstand current $I_{pk}$	30 kA
Rated conditional short-circuit current $I_{cc}$	50 kA
Operating temperature	-5 °C .... +40 °C
Rated frequency	50/60 Hz
Degree of protection	IP55
Rated insulation voltage $U_i$	440 Vac
Rated impulse withstand voltage of the assembly $U_{imp}$	Input: 8 kV Output: 4 kV



### SMISLINE POWER BAR TP SYSTEM

The world's first pluggable and touch proof socket system, SMISLINE TP ensures that devices and components can be safely inserted on and off under voltage, without switching off the other loads i.e. servers.

The modular system is available in the following socket-combinations:

- Power Bar 3L
- Power Bar 3LN
- Power Bar 3L LA LB

### Additional socket touch proof

The additional socket can easily be fitted onto the socket base to accommodate the external N and/or PE busbars. This enables neutral connections to be made where single-pole miniature circuit breakers are used with unswitched neutral.

Neutral terminals are mounted on the additional socket and can be used as detachable neutral connections. One N busbar and/or one PE busbar can be fitted.



### System pro M compact InSite

System pro M compact® InSite has been specifically developed to meet requirements of energy and asset management by monitoring and controlling the energy flow in sub distribution boards. It is the most compact, neat and hassle-free branch monitoring system available on the market. The sensors are mounted directly on the SMISLINE MCBs and there is no need of conventional expensive and cumbersome cabling thanks to internal Modbus instead of typical current transformer star wiring.



### Network Analyzer M4M

M4M as a stand-alone network analyzer guarantees all power monitoring needs in the energy distribution system: from high-accuracy energy efficiency monitoring of electrical parameters to complete power quality analysis through advanced KPIs. Thanks to its connectivity capabilities, M4M can leverage the integration in ABB scalable energy and asset management solutions to monitor, optimize and control the complete electrical system.



### MID Meter

Energy consumption awareness is key to reduce energy costs and improve energy efficiency on your machines and electrical assets. Energy meters allow identifying areas for improvement and to generate benefits for owners, facility managers and users. They enable to run smarter buildings in a more energy and cost-efficient manner. Sub-metering provides a detailed picture of the energy consumption and the specific areas where energy is used. ABB Energy Meters have the following instrumentation values as a minimum:

- Active power
- Voltage
- Current
- Power factor



### Surge arrester OVR

The type 2 surge arresters in the Quick-Safe product range are suitable for protecting electrical low voltage systems and terminals in the 240/415 V system. The devices can be used as type 2 surge arresters within the scope of the lightning protection zone concept at zone transition 0B-1 and higher. The high nominal discharge capability of 20 kA makes it possible for the equipment to have a longer service life in comparison to the minimum requirements of the standard. The devices consist of a basic unit and pluggable protection modules, which can be removed extremely easily to carry out insulation measurement.



### Enclosures - System pro E® energy

Designed for commercial and industrial buildings, System pro E® energy sub distribution boards have been developed for simple and flexible configuration and offer 20% more wiring space, require 30% less stock and save up to 40 % of assembly time.

The comprehensive System pro E® energy range includes wall mounted and floor standing sheets steel cabinets, offering protection degrees against dust and water up to IP43 and IP55. A common interior fitting and busbars for the complete platform, allows the users to easily integrate all types of ABB low voltage electrical devices, to build distribution panels up to 800A.



### Power Bar 250A Direct Feed

Compatible with ABB's XT4 mounting kit, the new Power Bar 250A Direct Feed block enables a connection between the SMISLINE Power Bar system and the XT4 molded case circuit breaker without using cables. This allows an easy installation on a mounting plate.



### Incoming bolt-on terminal block 250A

Alternative to the Direct feed, a compact feeding block that connects the SMISLINE Power Bar systems with cables of up to 150 mm² cross-section (with M8 cable lugs) is available too. It also features a connection to the additional SMISLINE socket for the N and PE phase.



### MCB's S400 series

The SMISLINE miniature circuit-breaker is an energy-limiting circuit-breaker that is equally suitable for the industrial sector, for commercial use and for installation at home. If a short circuit occurs, it guarantees excellent selectivity conditions to upstream circuit breakers and has back-up ratings up till 50kA. A full range of accessories is of course available as well.



### Residual current operated circuit breaker (RCBO)

The SMISLINE residual current circuit breakers with overcurrent protection (RCBO) are ideal for protecting people and property in all new and existing distribution systems.

## Technical Data

### SMISLINE Power Bar System 250A – New feeder option

General Data				
IEC	Rated current of the assembly ( $I_{na}$ )	250 A		
IEC	Rated current of a circuit ( $I_{nc}$ )	250 A		
IEC	Rated short-time withstand current ( $I_{cs}$ )	Mainbusbars: 15 kA / 100 ms ( $I_{cs}$ = const.)		
IEC	Rated peak withstand current ( $I_{pk}$ )	Mainbusbars: 30 kA		
IEC	Rated conditional short-circuit current ( $I_{sc}$ )	<b>Voltage (VAC)</b>	<b>Rated conditional short-circuit current (Icc)</b>	<b>Incoming current of main busbars (LI, L2, L3, N)</b>
		415 V	100 kA	250 A
		690 V	25 kA	250 A
				<b>Short circuit protection device (SCPD)</b>
				ABB Tmax XT4 250 A
IEC	Rated operational voltage ( $U_o$ )	690 VAC		
IEC	Rated voltage ( $U_n$ )	main bus bars: 690 VAC		
IEC	Rated isolation voltage ( $U_i$ )	main bus bars: 690 VAC		
IEC	Rated impulse withstand voltage ( $U_{imp}$ )	main bus bars: 8kV		
UL	Rated voltage	600 VAC		
UL	Rated current (End Feed)	250 A		
UL	Short circuit rating	50 kA (480 V), 35 kA (600 V) with XT4 250 A		
IEC/UL	Rated frequency	50 / 60 Hz		
IEC/UL	Overvoltage category	III		
IEC/UL	Pollution degree	3 (690 VAC)		
IEC/UL	max. temp. @ contact	105 °C (Limitation is the plastic material of the socket)		
IEC/UL	Degree of protection	IP 20		
IEC/UL	Climatic resistance	According to EN / IEC 60068- 2-x		
IEC/UL	Ambient air temperature	-25 °C to +60 °C (Evtl derating at 60 °C same as ZLSP960X)		
IEC/UL	Resistance to vibrations	IEC 60068-2-6, 5 - 150 Hz, 5 cycles 1 g		

### XT4 - Backup protection/Coordination

Using ABB MCCB and SMISLINE MCB's, fault levels of 50 kA can be interrupted (back-up (IEC) or Series rating (UL)). Selectivity will give a high availability of the loads.

Based on backup and selectivity requirements a Molded Case Circuit Breaker (XT4) is used to protect the Sub-Distribution.

The Backup protection complies with IEC/EN 60947-2 and allows industrial use.

Coordination tables can be found on the following web pages:  
<https://www.lowvoltage-tools.abb.com/soc/>

### How to get it:

For Google Chrome



<https://bit.ly/2lrLPTw>

For iPad



<https://apps.apple.com/us/app/data-centers-3d>  
 Requires iOS 9.3 or later.

### Approvals and Standards for SMISLINE PowerBar

EN/IEC 61439-6  
 UL508

### ABB 3D Data Center Configurator

The Data Center 3D configuration tool easily helps you to plan the energy distribution for your data center. It is efficient, user-friendly and customer oriented.

By using the configurator, you can plan and created customized RPP solutions on you iPad or by using the browser version.