

SEN Plus

**TRUSTED, UNIVERSAL
LOW-VOLTAGE SWITCHGEAR**



Why SEN Plus?

Certified Performance

SEN Plus assemblies are fully third-party certified up to **6300A** for power distribution and motor control in accordance with **IEC 61439-1/2**. Independent testing by **DEKRA** confirms dust and water protection up to IP54, with performance verified under real operating conditions, and up to **50°C ambient temperature**.



Environment

Designed to meet **IEC 60529** for IP30-IP54 arrangements, SEN Plus can be installed in a wide range of environmental conditions. Its epoxy powder-coated finish provides a **shock and scratch-resistant surface**, minimizing damage during transport and installation. Manufacturing processes are equally robust, with facilities governed by **ISO 9001** practices to ensure quality, consistency, and efficiency.

Safety

- Configurations up to Form 4B Type 7 as per IEC 61439 allow safe modification under energized conditions.
- Modular design increases functional floor space and supports retrofit or expansion requirements.
- Fast and efficient assembly methods ensure rapid deployment and delivery.

Energy Efficiency

- Accessories such as variable speed drives, kWh meters, and intelligent motor management modules enable improved energy efficiency.
- Integrated power monitoring and intelligent controls allow operators to manage their environmental impact.
- Centralized design and ongoing compliance with standards lower investment costs while delivering long-term savings.

Complete System Control

As part of Anord Mardix's wider portfolio, SEN Plus offers a comprehensive selection of protective and control equipment, including IEC 60947 certified circuit breakers, fuses, switch disconnectors, drives, contactors, and intelligent motor management solutions.

Digital Ready

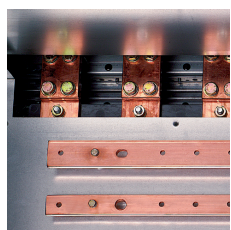
Communication via Ethernet, Profibus, or Modbus ensures seamless integration into larger systems, providing a homogeneous and easily managed setup.

Markets

SEN Plus has been developed from the ground up with customer requirements in mind, offering flexibility, safety, and reliability in:

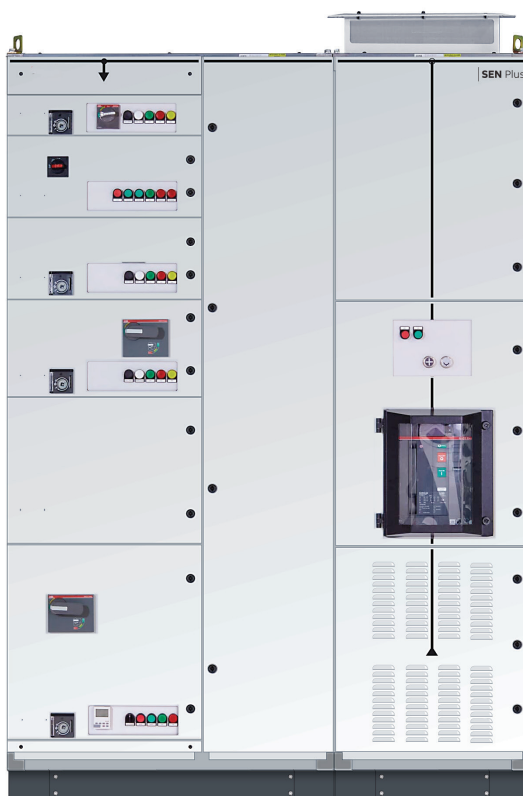
- **Commercial buildings:** offices, malls, hospitals, airports
- **Industrial environments:** food & beverage, pharmaceuticals, automotive, pulp & paper, packaging, chemical, marine, refining, oil & gas
- **Utilities:** water treatment, waste management, power generation, energy distribution, renewables, telecom, and public transport

Benefits of SEN Plus



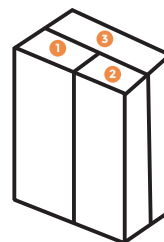
Construction & Design

- The rigid, non-welded self-supporting frame ensures structural integrity, while all doors and covers are manufactured from 2 mm sheet steel.
- Fixed, plug-in, and withdrawable modules are available, including half-size options for space efficiency.
- Compact, space-saving design and increased cabling space simplify installation and reduce building footprint requirements.
- Main busbar links are accessible from the front for simplified commissioning, and terminal bar arrangements are optimized for large cable cross sections.

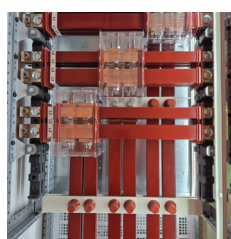


Complete system integration

- Equipped with the complete range of IEC 60947 tested components



- 1 Equipment zone
- 2 Cable zone
- 3 Busbar zone



Safety & Protection

- Fingerproof shrouds, barriers, and door locks provide additional protection during use and maintenance.
- Internal form of separation is available up to Form 4B Type 7, with internal ingress protection up to IP4X (movable shutters) and external ingress protection up to IP54.
- Arc resistance is certified to Class A, B, C, and I, covering both passive and active protection.
- Simplified fluidization process busbars painting technology reduces the risk of an arc fault virtually to zero. Fully automated and controlled process increases thermal efficiency.

Comprehensive distribution solutions



Operation & Maintenance

- Withdrawable modules maintain full safety in test position and support hot-swap replacement.
- Busbars are maintenance-free, reducing downtime and service costs.
- A 6-pole control busbar ensures reliable connectivity across modules.
- A 115° door opening angle allows easy accessibility during installation and service



Digital Readiness & Monitoring

- The system is fully compatible with industrial automation and communication platforms, supporting Ethernet, Modbus, Profinet, and Profibus.
- Intelligent motor management units, smart metering, and monitoring solutions are available for optimized energy management.
- Motor-operated switch fuses and electronic fuse monitoring expand application flexibility.



Sub-Distribution Solutions

- CombiLine N modules support sub-distribution up to 400 A with DIN-rail components and mounting plates.



Certification & Testing

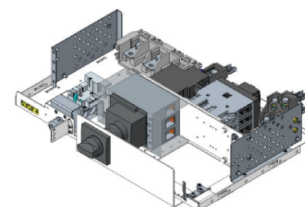
- Certified to IEC 61439-1/2 standards by DEKRA for reliability and safety.
- Tested for dust and water protection up to IP54, including real-world tests at 50°C ambient temperature.
- Verified for seismic and vibration resistance by RISE (report P111673, dated 2022-02-22).

Standard applications

Feeder with Manual Motor Starter or Moulded Case Circuit Breaker - Withdrawable

400V 50kA/80kA

Current	Circuit breaker	Unit height	3 pole		4 pole	
			Module size	Unit height	Module size	Unit height
[a]	type	[mm]		[mm]		
Up to 20	MS132	125	5E	-	-	-
Up to 32	MS132/MS165	125	5E	-	-	-
Up to 50	MS132/MS165/S800S	125	1/2 5E	-	-	-
Up to 63	S800/XT2L 160	-	-	-	-	-
Up to 125	XT1S / XT2L 160	125	5E	150	6E	150
Up to 250	XT4 S/L 250	200	8E	250	10E	250
Up to 630	XT5 S/L 630	300	12E	300	12E	300



500V 50kA/65kA

Current	Circuit breaker	Unit height	3 pole		4 pole	
			Module size	Unit height	Module size	Unit height
[a]	type	[mm]		[mm]		
Up to 125	XT2 H/V 160	150	6E	250	10E	250
Up to 250	XT4 H/V 250	250	10E	250	10E	250
Up to 630	XT5 H/L 630	250	10E	300	12E	300

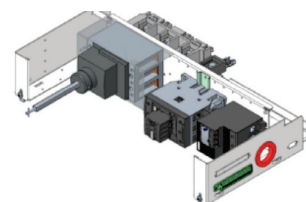
690V 35kA/50kA

Current	Circuit breaker	Unit height	3 pole		4 pole	
			Module size	Unit height	Module size	Unit height
[a]	type	[mm]		[mm]		
Up to 250	XT4X 250	250	10E	250	10E	250
Up to 630	XT5 H/L 630	250	10E	300	12E	300

Feeder with Manual Motor Starter or Moulded Case Circuit Breaker - Plug-in

400V 50kA/80kA

Current	Circuit breaker	Unit height	3 pole		4 pole	
			Module size	Unit height	Module size	Unit height
[a]	type	[mm]		[mm]		
Up to 20	MS132	125	5E	-	-	-
Up to 32	MS132/MS165	125	5E	-	-	-
Up to 63	MS165/-	125	5E	-	-	-
Up to 125	XT2 S/L 160	125	5E	200	8E	200
Up to 250	XT4 S/L 250	200	8E	200	8E	200
Up to 630	XT5 S/L 630	250	10E	300	12E	300



500V 50kA/65kA

Current	Circuit breaker	Unit height	3 pole		4 pole	
			Module size	Unit height	Module size	Unit height
[a]	type	[mm]		[mm]		
Up to 125	XT2 H/V 160	125	5E	200	8E	200
Up to 160	XT2 H/ - 160	125	5E	200	8E	200
Up to 250	XT4 H/V 250	200	8E	200	8E	200
Up to 630	XT5 H/L 630	250	10E	300	12E	300

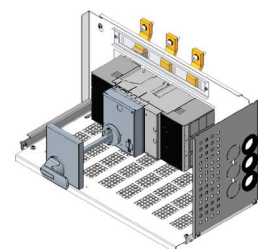
690V 35kA/50kA

Current	Circuit breaker	Unit height	3 pole		4 pole	
			Module size	Unit height	Module size	Unit height
[a]	type	[mm]		[mm]		
Up to 250	XT4X 250	200	8E	200	8E	200
Up to 630	XT5 H/L 630	250	10E	300	12E	300

Feeder with Manual Motor Starter or Moulded Case Circuit Breaker - Fixed

400V 50kA/80kA

Current	Circuit breaker	Unit height	3 pole		4 pole	
			Module size	Unit height	Module size	Unit height
[a]	type	[mm]		[mm]		
Up to 20	MS132	125	5E	-	-	-
Up to 32	MS132/MS165	125	5E	-	-	-
Up to 125	S800/XT2L 160	-	-	-	-	-
Up to 160	XT1S / XT2L 160	125	5E	150	6E	150
Up to 250	XT4 S/L 250	200	8E	250	10E	250
Up to 630	XT5 S/L 630	300	12E	300	12E	300



500V 50kA/65kA

Current	Circuit breaker	Unit height	3 pole		4 pole	
			Module size	Unit height	Module size	Unit height
[a]	type	[mm]		[mm]		
Up to 160	XT1 H/XT2V 160	125	5E	150	6E	150
Up to 250	XT4 H/V 250	200	8E	250	10E	250
Up to 630	XT5 H/L 630	300	12E	300	12E	300

690V 35kA/50kA

Current	Circuit breaker	Unit height	3 pole		4 pole	
			Module size	Unit height	Module size	Unit height
[a]	type	[mm]		[mm]		
Up to 250	XT4X 250	200	8E	250	10E	250
Up to 630	XT5 H/L 630	300	12E	300	12E	300

Feeder with switch-disconnector-fuses - SlimLine XR

400V, 500V, 690V

Current	Circuit breaker	Unit height	3 pole		4 pole	
			Module size	Unit height	Module size	Unit height
[a]	type	[mm]		[mm]		
Up to 160	XR00	50	2E	100	4E	100
Up to 250	XR1	100	4E	150	6E	150
Up to 400	XR2	200	8E	250	10E	250
Up to 630	XR3	200	8E	250	10E	250



Feeder with switch-disconnector- InLine II

400V, 500V, 690V

Current	Circuit breaker	Unit height	3 pole		4 pole	
			Module size	Unit height	Module size	Unit height
[a]	type	[mm]		[mm]		
Up to 160	ZHBM00	50	2E	100	4E	100
Up to 250	ZHBM1	100	4E	150	6E	150
Up to 400	ZHBM2	100	4E	250	10E	250
Up to 630	ZHBM3	100	4E	250	10E	250



Technical data

Electrical data		
Rated operational voltage	Ue	up to 690 V AC
Rated frequency	f	50/60 Hz
Rated insulation voltage	Ui	up to 1000V
Rated impulse withstand voltage	Uimp	8/12kV
Overvoltage category		III/IV
Ambient air teemperature		-5°C to + 40°C (see note 1)
Rated current horizontal busbars		1000A up to 6700A
Current under arcing conditions passive 65kA @500V		1250A up to 6300A
Current under arcing conditions active 65kA @690V Class C		1000A up to 1900A
Rated short time withstand current	Icw	up to 100kA , 1s
Rated peak withstand current	Ipk	up to 220kA
Rated conditinal short-circuit current	Icc	up to 100kA

Note 1: also tested & certified for ambient air temperature of 50°C

Mechanical data		
Dimensions of columns	height	2200mm
	depth	600/800/1000/1200mm
	width	400-1200mm
Modularity		1E = 25mm
Maximum stacking density		80E
Standard module size		5E/2 and 5E up to 36E
Degree of protection (External)		IP30 /IP31 / IP40 / IP41/ IP42 / IP43 / IP54
Degree of protection (Internal)		IP2X /IP3X / IP4X
Internal separation PC		up to from 4b type 7
Internal separation MCC		form 3b / 4b type 7
Painting		epoxy - polyester
		standard RAL 7035, custom available

Standards	
Design verification	IEC 61439-1/-2, Edition 3.0
Internal arc testing	IEC TR 61641, Edition 3.0
Arc fault mitigation systems	IEC TS 63107, Class A, B, C, I
Seismic testing	IEEE 693 / ICC ES AC156, Edition 1.0

SEN Plus, a complete solution

Your trusted product continues with the same expertise and standards.

Sustaining the product you know, with the people you already trust.



Anord Mardix, a Flex company, is a leading provider of power distribution and protection equipment to the global market. We are a vendor of choice to many of the world's core markets, from data centers to cloud computing.

With over 100 years of combined expertise we offer clients the most comprehensive product range in the industry. Our ability to customize our product offering to each project, and manufacture on a global scale, ensures reliable and bespoke end-to-end critical power solutions to all our customers, from independent providers to hyperscale leaders.

Find us here:

