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# IT system floor-standing distribution cabinet series ...-IPS-F

for supplying power to medical locations  
in accordance with IEC 60364-7-710



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## Device features

- Complete standardized IT system featuring
  - 3.15...8 kVA (10 kVA optional) isolating transformer
  - Insulation, load, temperature and connection monitoring
  - Main isolator switch
  - 6 subcircuits with 2-pole circuit breakers/IT system (max. 24)
  - Power supply unit for alarm indicator and operator panels
- Time saving as the floor-standing distribution cabinets are supplied prewired and factory tested
- Versions for 1...4 IT systems in one enclosure
- Designed in accordance with the requirements of applicable standards
- In and outgoing wires are terminated by screwless type/cage clamp spring terminals or as per customer specification
- Exchange of information via bus technology
- Short delivery times

## Application

The IT system distribution cabinet in the IPS-F series supplies electrical power to group 2 medical locations. In such locations, according to the requirements of

- IEC 60364-7-710 for circuits supplying medical electrical equipment and systems intended for life support, surgical applications and other electrical equipment located in the “patient environment”
- the use of the IT system with insulation monitoring and load current monitoring (IEC 60364-7-710) is recommended. This requirement applies for example to anaesthetic rooms, operating theatres, preparation rooms, plaster rooms, recovery rooms, heart catheterization rooms, intensive care rooms, angiographic examination rooms, premature baby rooms.

The distribution cabinet of the IPS-F series features all necessary components and is supplied prewired to terminals, thereby drastically reducing the time needed for installation and commissioning. The completely factory tested cabinets do comply with our high quality and safety requirements and ISO9001 standard.

## Built-in components in accordance with IEC 60364-7-710

The IPS-F series distribution cabinet features the following components:

- 3.15...8 kVA isolating transformer (10 kVA optional)
- Insulation, load, and temperature monitoring device isoMED427P
- Main isolator switch
- 6 x 2-pole circuit breakers/IT system (max. 24 circuit breakers/IT system)
- 1 load current transformer
- 1 equipotential bonding terminals
- Power supply for maximum of 7 MK2430 alarm indicator and operator panel(s) or for maximum of 7 control panels CP305 series (the maximum number of alarm indicator and operator panels to be connected to a power supply unit also depends on the cable length)

Ventilation filters and fans are mounted into the cabinet door.

## Insulation, load and temperature monitoring

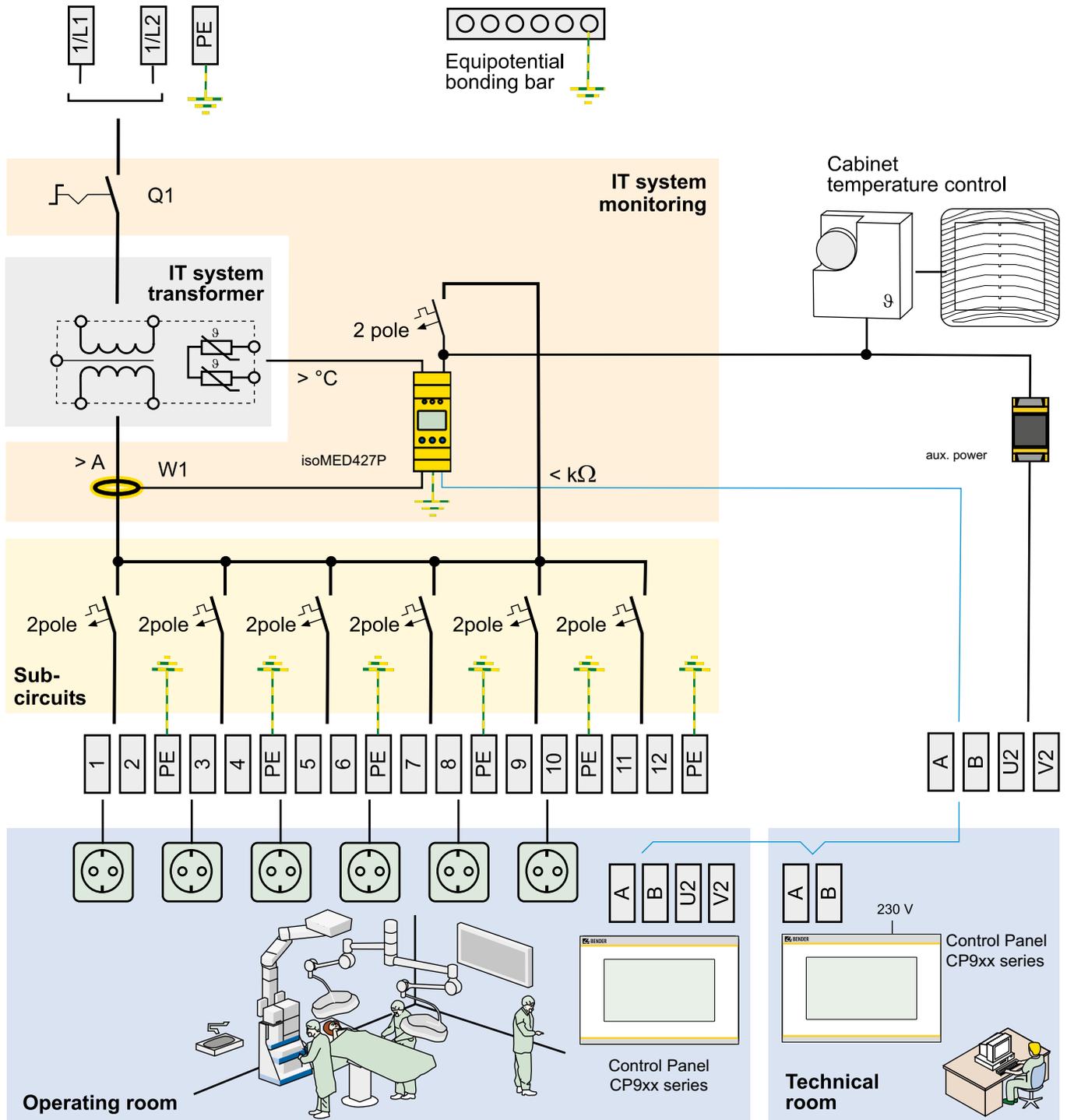
The isoMED427 insulation monitoring device continuously monitors the insulation resistance, load current and the temperature of the IT system transformer. If one or a number of response values have been reached (insulation resistance, load current, temperature), the alarm relay will switch and a corresponding message will appear. The connecting cables to the system and PE, as well as to the measuring current transformer and temperature sensor, are permanently monitored. In the event of wire breakage or short circuit of the current transformer an alarm will come on. The patented AMP measuring technique is used in order to exclude the possibility of insulation monitoring being impaired by DC components.

## Messages displayed in plain text

The unique status, warning and fault messages are displayed in plain text.

The MK2430/control panel CP305 series or control Panel CP9xx series must be installed in a suitable location in the medical location and permanently monitored by medical staff. A twisted pair shielded bus cable is used to connect the IPS distribution cabinet to the alarm indicator panels.

Overview wiring diagram



## Technical data

### Distribution cabinet data

Cabinet range	ABB/Striebel & John
Cabinet type	Tri Line R, floor-standing cabinet with door
Degree of protection	max. IP54
Protection class	Class I (earthed)
Ventilation	fan and filter in the distribution cabinet door, on the top and bottom
Doors and side panels	sheet steel 1.5...2 mm
Door	right hinged
Door lock	lock with double bit insert
Paint finish	RAL7035, light grey (powder-coated)

### Installation data

Type of installation	free-standing
Dimensions/weight/power consumption	see table

### Type of wiring

Terminal area	at the top
Cable entry	via gland plates/optional closed cover
Cable duct	none
Protective/neutral conductor	PE terminals, isolating terminals $\leq 10 \text{ mm}^2$
Conductor colours	acc. to IEC 60446
Conductors	halogen-free

### Connection type

Connection method	typically screwless-type connection/ cage clamp spring terminal/or as specified
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### Labeling

Devices	adhesive labels acc. to IEC 61346-2
Distribution cabinet	adhesive labels, black type on a white
System type labelling	according to IEC

### System data

Type of distribution system	IT system
Nominal voltage	AC 230 V/50...60 Hz

### Insulation monitoring

Adjustable response value $R_{an1}$	50...500 k $\Omega$
Hysteresis	$\leq 25 \%$
Response time $t_{an}$ at $R_F = 0.5 \times R_{an}$ and $C_e = 1 \mu\text{F}$	$\leq 3 \text{ s}$
Max. permissible system leakage capacitance	$\leq 5 \mu\text{F}$
Measuring voltage $U_m$	12 V
Measuring current $I_m$ (at $R_F = 0 \Omega$ )	$\leq 50 \mu\text{A}$
Internal DC resistance $R_i$	$\geq 240 \text{ k}\Omega$
Impedance $Z_i$ at 50 Hz	$\geq 200 \text{ k}\Omega$
Permissible external DC voltage $U_{fg}$	$\leq \text{DC } 375 \text{ V}$

### Overload monitoring

Adjustable response value	5...50 A
Hysteresis	4 %
Temperature influence	$\leq 0.15 \%/^\circ\text{C}$

### Overtemperature monitoring

Response value	4 k $\Omega$
Release value	1.6 k $\Omega$
PTC resistors acc. to DIN 44081	max. 6 in series

### Interfaces

Interface/protocol	RS-485/BMS
Connection terminals	A/B
Max. cable length	$\leq 1200 \text{ m}$
Cable (shielded twisted pair, shield connected to PE at one end)	recommended: J-Y(St)Y 2x0.8
Terminating resistor	120 $\Omega$ (0.25 W)

### Switching elements (alarm contacts isoMED427P)

Switching elements	1 changeover contact
Operating principle, adjustable	N/C or N/O operation
Electrical endurance, number of cycles	12000
Rated contact voltage	AC 250 V/DC 300 V
Making capacity	AC/DC 5 A
Breaking capacity	2 A, AC 230 V, $\cos \phi 0.4$ 0.2 A, DC 220 V, L/R = 0.04 s

### General data

Ambient temperature (operation, in door use)	0...+30 $^\circ\text{C}$
Ambient temperature (storage)	-40...+70 $^\circ\text{C}$
Operating mode	continuous operation

### Product standards

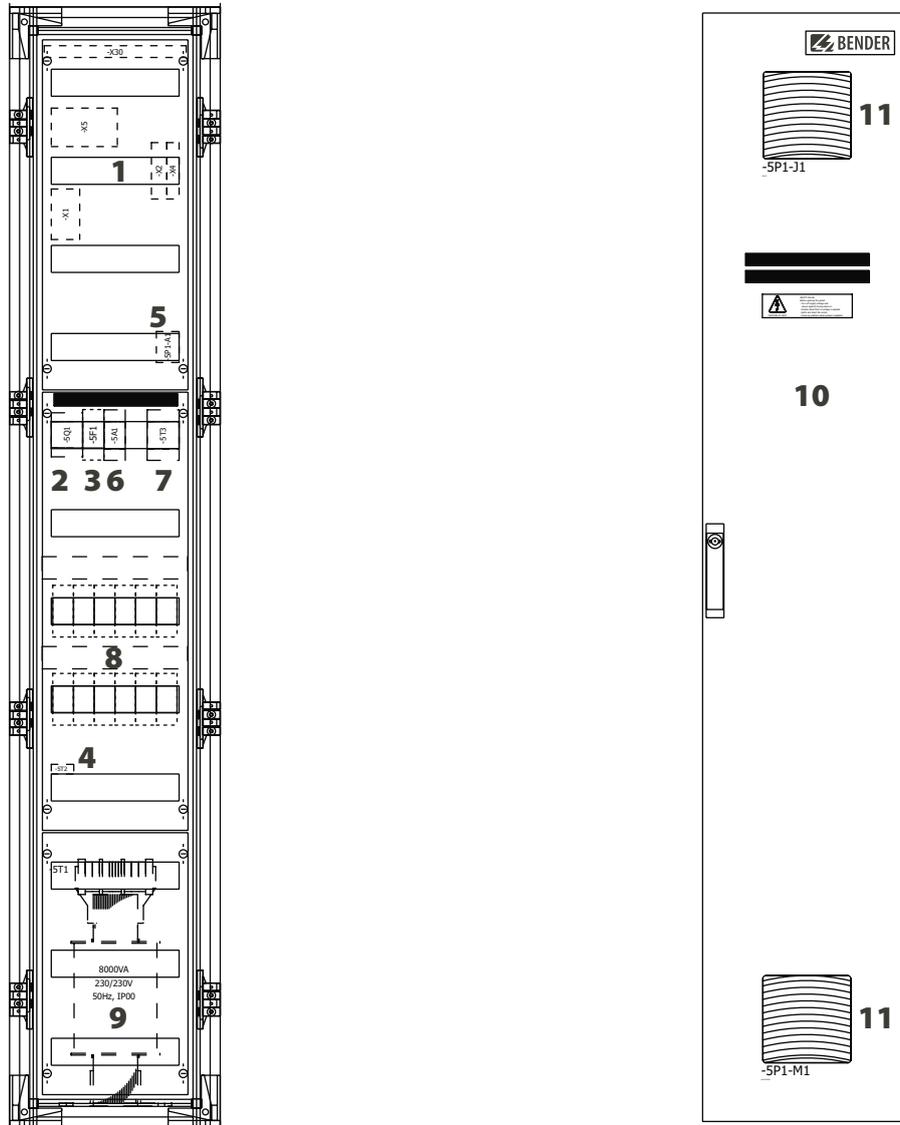
Insulation monitoring	IEC 61557-8
Load and temperature monitoring	IEC 60364-7-710
Insulation fault location system	IEC 61557-9
Distribution cabinet	IEC 61439-1/2
Isolating transformer	IEC 60364-7-710 IEC 60558-1 IEC 61558-2-15

## Overview / ordering information

Type	Isolating transformer	Subcircuits (typically)	Quantity IT systems	Dimensions WxHxD (mm)	Weight (kg) without base	Power-dissipation (W)
S-IPS-F	up to 8 kVA	1 x 6...24	1	374 x 1913 x 425*	155	315
D-IPS-F		2 x 6...24	2	624 x 1913 x 425 *	250	630
T-IPS-F		3 x 6...24	3	874 x 1913 x 425*	350	945
F-IPS-F		4 x 6...24	4	1124 x 1913 x 425*	455	1260

\* 10 kVA systems: depth 425 mm (only applies to transformer model ES710/10000SN-GL)  
10 kVA systems: depth 625 mm (only applies to transformer model ES710/10000)

**S-IPS-F**



**Dimensions:**

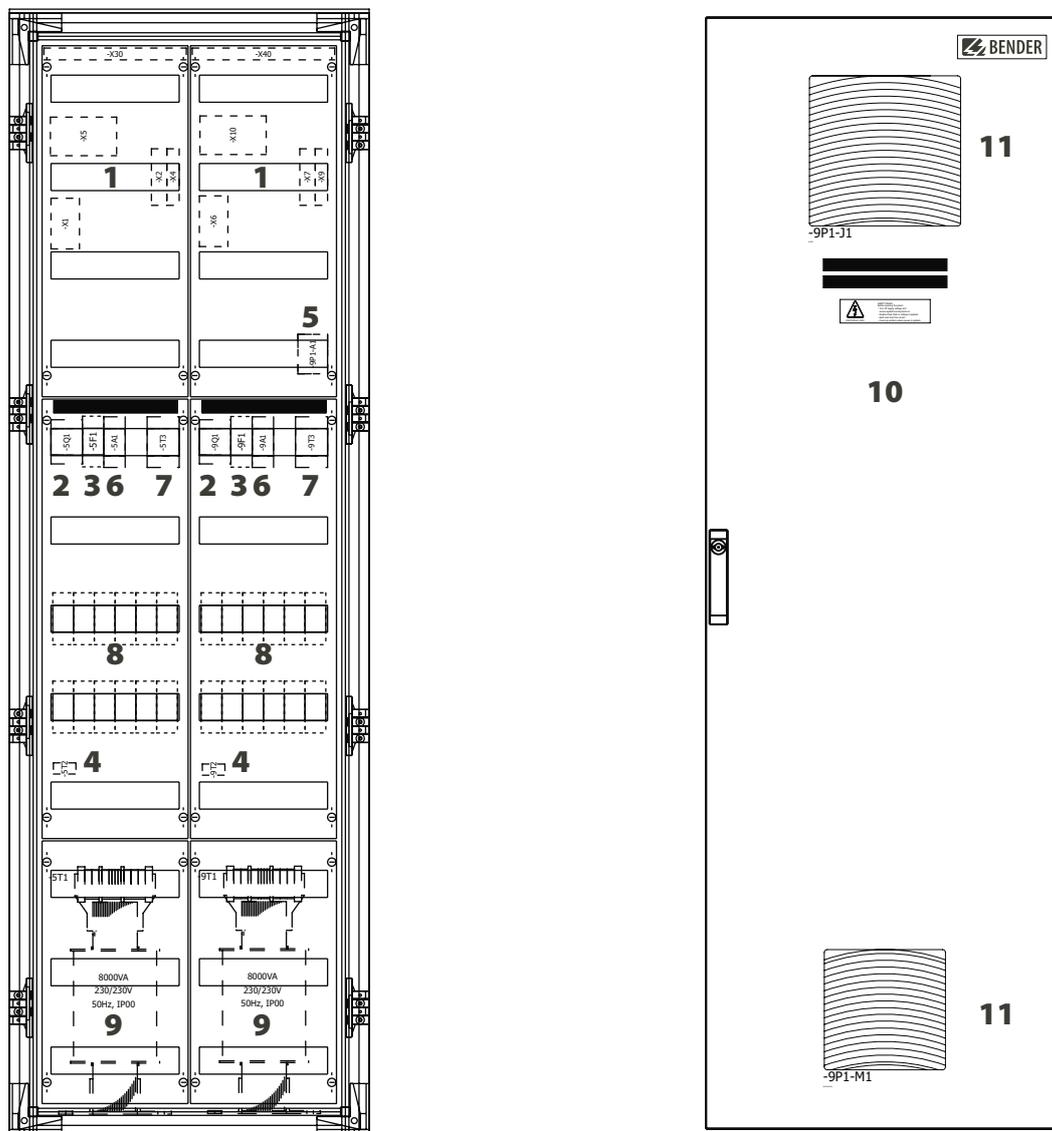
- up to 8 kVA 374 x 1913\*\* x 425 (W x H x D)
- 10 kVA 374 x 1913\*\* x 425 (W x H x D) (only applies to transformer model ES710/10000SN-GL)
- 10 kVA 374 x 1913\*\* x 625 (W x H x D) (only applies to transformer model ES710/10000)

1	Terminal area and equipotential bonding terminals
2	Main isolator switch
3	Circuit breaker for internd power supply
4	Current transformer for load monitoring
5	Temperature sensor (thermostat)
6	isoMED427 insulation, load and temperature monitoring

7	Power supply unit for alarm indicator and operator panels MK2430 / control panel CP305 series
8	2-pole circuit-breaker subcircuits IT system (max. 18 / IT system)
9	IT system transformer typically 3.15... 8 kVA (10 kVA optional)
10	Front door
11	Filter and fan

\*\* with plinth: 2013 mm

**D-IPS-F**



**Dimensions:**

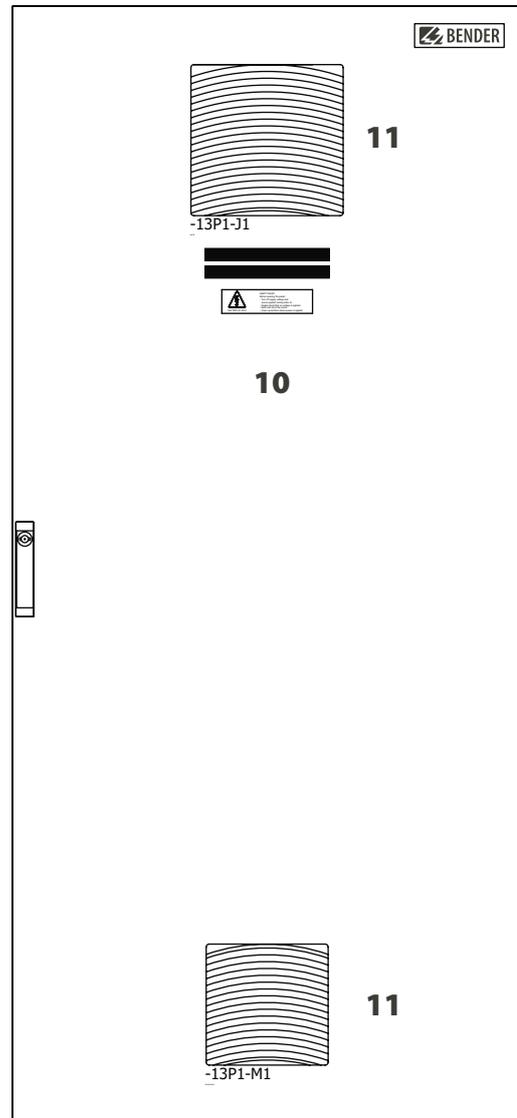
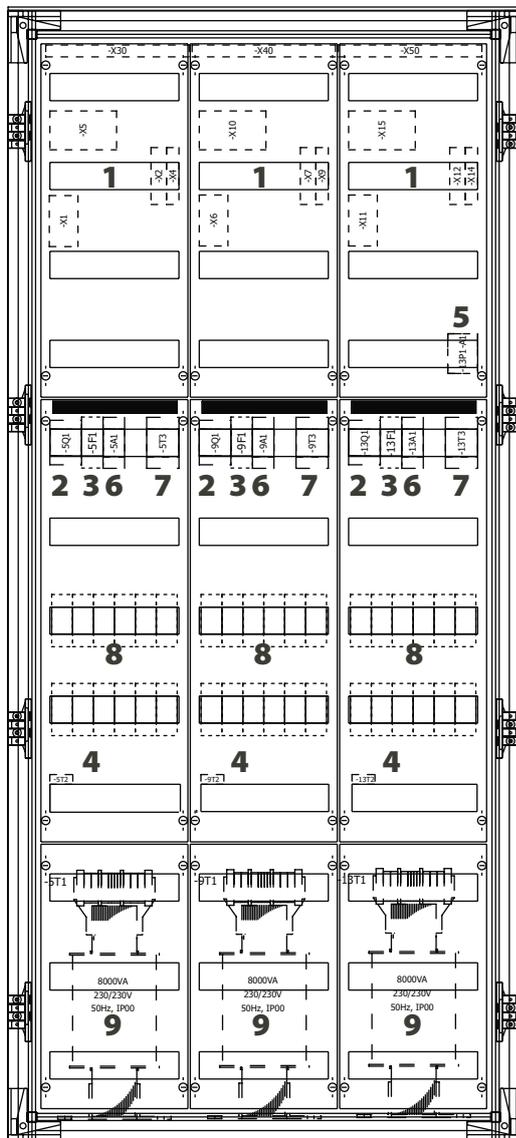
- up to 8 kVA 624 x 1913\*\* x 425 (W x H x D)
- 10 kVA 624 x 1913\*\* x 425 (W x H x D) (only applies to transformer model ES710/10000SN-GL)
- 10 kVA 624 x 1913\*\* x 625 (W x H x D) (only applies to transformer model ES710/10000)

1	Terminal area and equipotential bonding terminals
2	Main isolator switch
3	Circuit breaker for internd power supply
4	Current transformer for load monitoring
5	Temperature sensor (thermostat)
6	isoMED427 insulation, load and temperature monitoring

7	Power supply unit for alarm indicator and operator panels MK2430 / control panel CP305 series
8	2-pole circuit-breaker subcircuits IT system (max. 24 / IT system)
9	IT system transformer typically 3.15... 8 kVA (10 kVA optional)
10	Front door
11	Filter and fan

\*\* with plinth: 2013 mm

**T-IPS-F**



**Dimensions:**

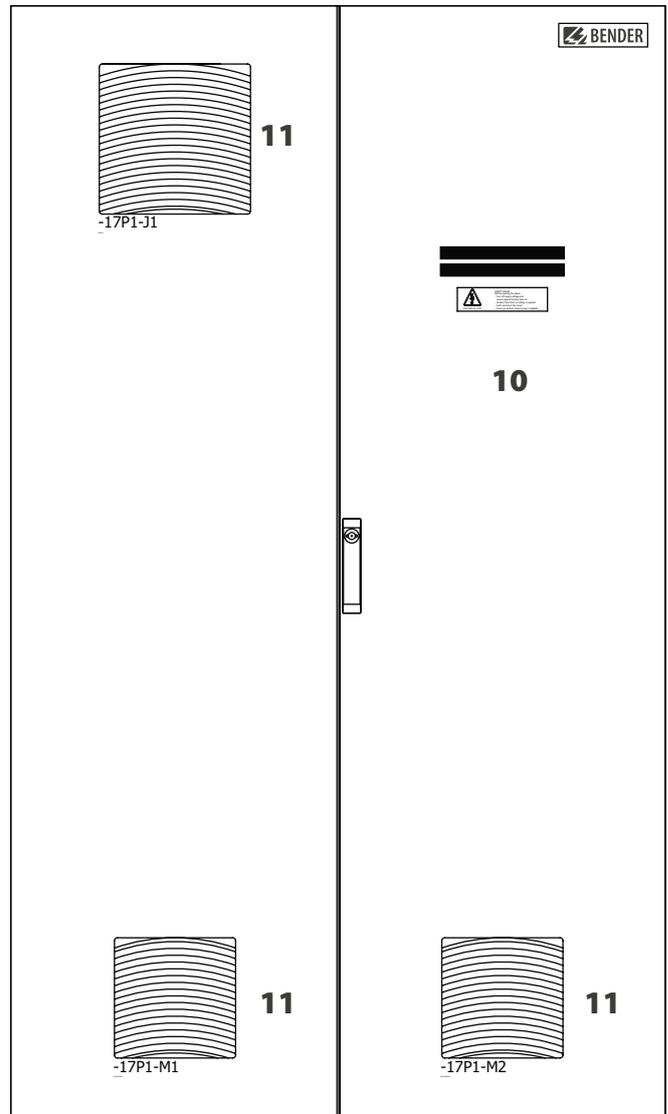
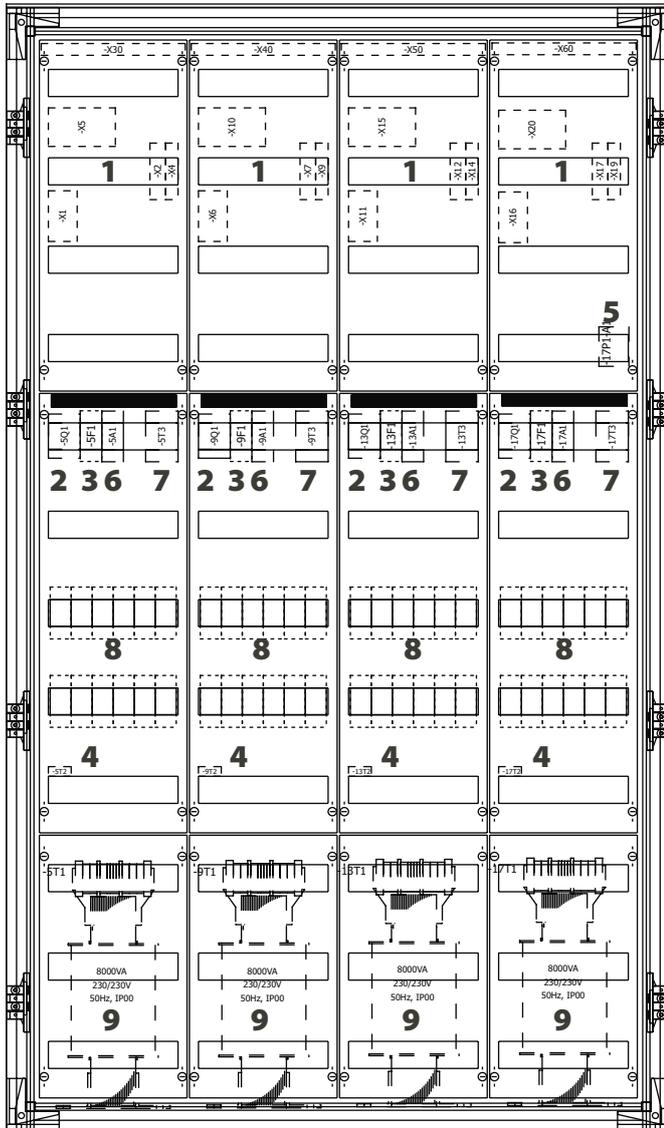
- up to 8 kVA 874 x 1913\*\* x 425 (W x H x D)
- 10 kVA 874 x 1913\*\* x 425 (W x H x D) (only applies to transformer model ES710/10000SN-GL)
- 10 kVA 874 x 1913\*\* x 625 (W x H x D) (only applies to transformer model ES710/10000)

1	Terminal area and equipotential bonding terminals
2	Main isolator switch
3	Circuit breaker for internd power supply
4	Current transformer for load monitoring
5	Temperature sensor (thermostat)
6	isoMED427 insulation, load and temperature monitoring

7	Power supply unit for alarm indicator and operator panels MK2430 / control panel CP305 series
8	2-pole circuit-breaker subcircuits IT system (max. 24 / IT system)
9	IT system transformer typically 3.15... 8 kVA (10 kVA optional)
10	Front door
11	Filter and fan

\*\* with plinth: 2013 mm

**F-IPS-F**



**Dimensions:**

- up to 8 kVA 1124 x 1913\*\* x 425 (W x H x D)
- 10 kVA 1124 x 1913\*\* x 425 (W x H x D) (only applies to transformer model ES710/10000SN-GL)
- 10 kVA 1124 x 1913\*\* x 625 (W x H x D) (only applies to transformer model ES710/10000)

1	Terminal area and equipotential bonding terminals
2	Main isolator switch
3	Circuit breaker for internd power supply
4	Current transformer for load monitoring
5	Temperature sensor (thermostat)
6	isoMED427 insulation, load and temperature monitoring

7	Power supply unit for alarm indicator and operator panels MK2430 / control panel CP305 series
8	2-pole circuit-breaker subcircuits IT system (max. 24 / IT system)
9	IT system transformer typically 3.15... 8 kVA (10 kVA optional)
10	Front door
11	Filter and fan

\*\* with plinth: 2013 mm





**Bender GmbH & Co. KG**

Londorfer Straße 65  
35305 Grünberg  
Germany

Tel.: +49 6401 807-0  
info@bender.de  
www.bender.de



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Subject to change!  
The specified standards take into account the  
edition valid until 02.2024 unless otherwise  
indicated.