RSV RUHSTRAT
STROMVERSORGUNGEN

PRODUCT INFORMATION

R-BSV 230 V

BATTERY-ASSISTED CENTRAL POWER SUPPLY SYSTEM

Specifically for hospitals, clinics, and medical care centers

ruhstrat.eu

Expert Advice You Can Trust

RSV RUHSTRAT STROMVERSORGUNGEN GMBH:
A MODERN, MEDIUM-SIZED COMPANY WITH A LONG-STANDING TRADITION.

Since our foundation in 1888, our high-quality products in the fields of electrical engineering and plant engineering have established themselves internationally.

We can look back on over 90 years of experience in the field of 'emergency power supply'. As early as 1916, Ruhstrat built the first emergency lighting system for public assembly venues. As a specialist supplier of battery-backed power supplies, we specialise not only in modern safety lighting systems but also in DC power supplies, battery-backed central power supply systems (BSV – previously ZSV) and uninterruptible power supplies (UPS). Ruhstrat's BSV/ZSV systems are used for surgical lighting and life-supporting medical equipment in hospitals. Our UPS systems ensure a reliable power supply in industrial facilities and computer networks.

As a provider of complete solutions, we assist with everything from planning through to installation. We supply everything from a single source, ensure replacements are provided at the earliest opportunity and, on request, undertake the maintenance of the systems. We are happy to meet customer requirements and the most challenging technical specifications on an individual basis. A wide range of standards and regulations, which are interlinked by cross-references, apply to the installation, maintenance and condition of emergency lighting systems. This applies to both lighting and electrical engineering aspects. Many German standards and regulations that have proven their worth in practice have been replaced by European ones in recent years or are currently being revised.

The most important installation regulations for emergency lighting systems with regard to electrical requirements are DIN EN 50172 (VDE 0108-100), draft DIN VDE 0108-100 and DIN VDE 0100-718. These electrical regulations are supplemented by a set of photometric parameters, described in the standards DIN EN 1838 and DIN 4844 (or ISO 3864). The regulations in accordance with EN 60598 Part 1 and EN 60598 Part 2-22 contain the general requirements for luminaires as well as the regulations for luminaires used in emergency lighting. They are authoritative for the manufacturer with regard to the electrical, thermal and mechanical safety of the luminaires.

Product Overview

Emergency lighting systems and central power supply systems

Battery backup central power supply systems (BSV)
according to DIN VDE 0100-710 / VDE 0558-507

Decentralized power supply systems
with limited power capacity

DC power supply
for stationary battery systems

Emergency exit signs and safety lights for

- Central battery systems
- Single-battery systems

Uninterruptible Power Supply (UPS) Systems

R-BSV 230V

Rectifier cabinet | inverter cabinet | Bypass inverter

Image for illustration purpose only.

UPS system according to DIN VDE 0558-507

To ensure patient safety, battery-assisted central power supply systems (UPS) are mandatory in operating rooms and other medically used areas.

If the general power supply is disrupted, medical and technical equipment essential for maintaining hospital operations must be powered by an emergency power supply system (UPS). Ruhstrat UPS systems are specifically designed for use in hospitals and medical practices.

For instance:

- surgical lights and comparable lighting systems
- therapeutic devices
- measurement and diagnostic equipment
- electric power tools

Advantages of Ruhstrat UPS systems

- no switch over during power outage (0 ms interruption time)
- compliant with DIN VDE 0558-507 and EN 50171 standards for medical environments
- configuration up to 160 kVA, 230 V output voltage (high short-circuit current for selective fuse operation)
- power consumption of rectifier is perfectly sinusoidal
- no reactive power consumption from the grid (power factor of 1)
- separate manual bypass (in a separate housing)
- battery voltage is ungrounded (with ground fault monitoring)
- battery circuit monitoring
- battery symmetry monitoring
- capacity and functionality test – no activation required
- capacity test with full rated load via grid feedback
- battery capacity designed for 1- or 3-hour operation
- robust design
- excellent generator characteristics
- user-friendly
- very high overload capacity
- broad monitoring systems
- simple initiation of the capacity test
- charging device with I-V characteristic according to DIN 41773
- voltage and/or time dependent automatic charging system
- deep discharge protection provided with full testing device
- temperature compensation
- DC-ground fault monitoring

R-BSV 230V

- fan coasting control
- radio interference degree „A“
- automated monthly testing
- automated annual testing
- charging current monitoring (too high/low; no charging current – even though power supply is available)
- buffer for error messages and automated acceptance tests for a minimum of two years
- signal converter for common control panels and status panels are optionally available from Bender or EAS-Grimma

Microprocessor Control Unit

A microprocessor unit is integrated for control and monitoring of the charging system, the battery, and for displaying measurement data and error messages. Charging voltage, charging current, discharge current, date, time as well as all status messages and test results will be shown via plain text display. Messages and function tests from the past two years are stored and can be accessed at any time.

Error Messages (in plain terms)

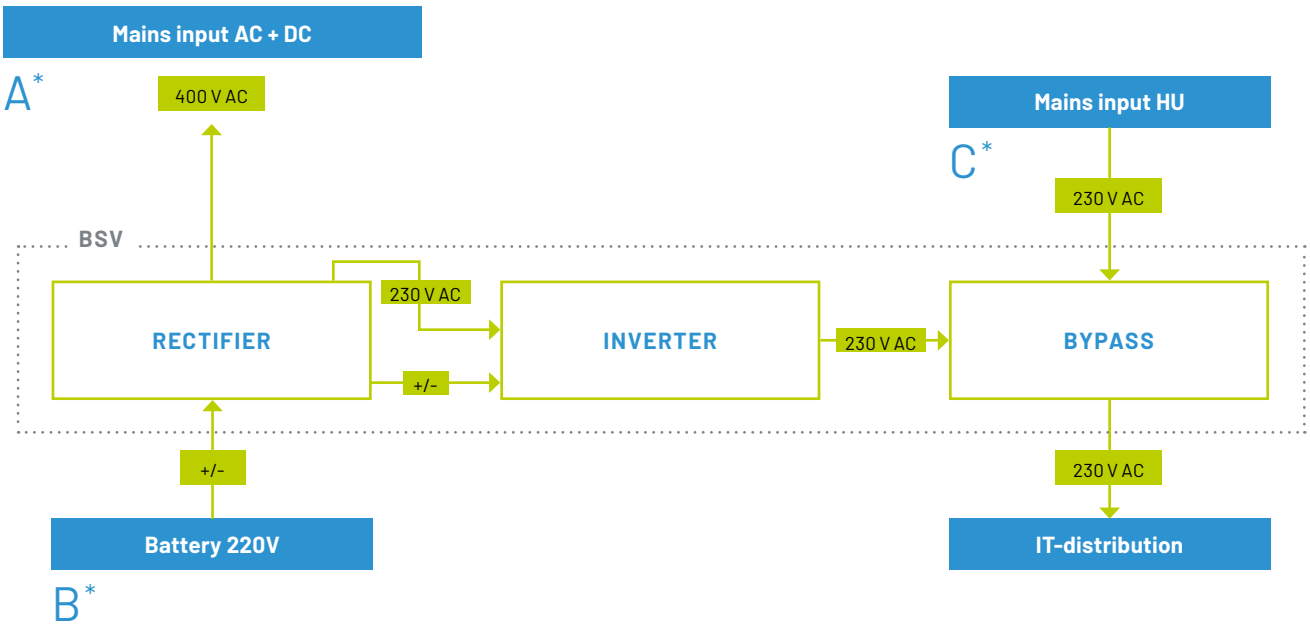
- voltage too high/low
- deep discharge
- battery circuit errors
- no charge
- power failure
- internal error of the microprocessor unit
- voltage in battery mode too high/low
- insulation fault
- inverter malfunction
- overheating
- due to endurance test or functionality test, the system is not ready for operation

Operating Messages via 8 LEDs

- malfunction
- operative
- battery mode
- mains mode
- load ON
- test mode
- deep discharge

Dry (voltage free) contacts

- system operational
- battery mode
- mains mode
- system malfunction
- test mode
- deep discharge



*) see table of technical specification on page 8

Technical Data

Battery-assisted central power supply system R-UPS-230V-50 Hz						
Output voltage 230 V / 50 Hz single phase						
Technical data						
UPS / type:	3 kVA	4 kVA	5 kVA	6 kVA	8 kVA	10 kVA
Rated power in kVA at power factor 0.8 inductive	3	4	5	6	8	10
Rated output current in A	13	19	22	26	35	43
required rectifier for: parallel operation, supply time 1h dimensions of housing for rectifier	5A	8A	8A	10A	12A	16A
(H × W × D in mm)	1400 × 600 × 600	1400 × 600 × 600	1400 × 600 × 600	1400 × 600 × 600	1400 × 600 × 600	1400 × 600 × 600
Required rectifier for: parallel operation, supply time 3h dimensions of housing for rectifier	12A	16A	22A	30A	30A	36A
(H × W × D in mm)	1400 × 600 × 600	1400 × 600 × 600	1400 × 600 × 600	1400 × 600 × 600	1400 × 600 × 600	1800 × 800 × 600
Required rectifier for: continuous operation, supply time 1h dimensions of housing for rectifier	22A	30A	36A	42A	60A	60A
(H × W × D in mm)	1400 × 600 × 600	1400 × 600 × 600	1800 × 800 × 600	1800 × 800 × 600	1800 × 800 × 600	1800 × 800 × 600
Required rectifier for: continuous operation, supply time 3h dimensions of housing for rectifier	30A	36A	42A	50A	80A	80A
(H × W × D in mm)	1400 × 600 × 600	1800 × 800 × 600	1800 × 800 × 600	1800 × 800 × 600	1800 × 800 × 800	1800 × 800 × 800
System losses in kW at standby operation	0,3	0,3	0,4	0,5	0,6	0,6
Maximum permissible fuse for selective tripping < 500 ms, DIAZED type gl, in 16A	16	16	20	25	25	35
Bypass (230V / 50Hz) customer side fuse protection in A, dimensions of housing for bypass	25	35	50	50	63	80
(H × W × D in mm)	1800 × 600 × 600	1800 × 600 × 600	1800 × 600 × 600	1800 × 600 × 600	1800 × 600 × 600	1800 × 600 × 600
Dimensions of housing for inverters (H × W × D in mm)	1400 × 800 × 600	1400 × 800 × 600	1400 × 800 × 600	1400 × 800 × 600	1800 × 800 × 600	1800 × 800 × 600
battery capacity (108 Pb cells), suggestion incl. 20% reserve, supply time 1 h in Ah	50	50	50	100	100	100
Dimensions of housing for sealed lead-acid batteries, supply time 1 h (H × W × D in mm)	2000 × 800 × 600	2000 × 800 × 600	2000 × 800 × 600	2000 × 800 × 600	2000 × 800 × 600	2000 × 800 × 600
Battery capacity (108 Pb cells), suggestion incl. 20% reserve, supply time 3 h in Ah	100	100	150	150	200	250
Dimensions of housing for sealed lead-acid batteries, supply time 3 h (H + W + D in mm)	2000 × 800 × 600	2000 × 800 × 600	2000 × 1200 × 600	2000 × 1200 × 600	2 × 200 × 800 × 600	2 × 2000 × 1200 × 600
Largest individual transformer power in kVA	3,15	3,15	3,15	3,15	3,15	5
Short circuit current in A	110	110	110	140	160	217

battery racks for vented batteries available in any size, depending on the dimensions of the room, system may consist of at least 1 housing for rectifier, 1 housing for inverter, 1 housing for bypass

Technical Data

Battery-assisted central power supply system R-UPS-230V-50 Hz					
Output voltage 230 V / 50 Hz single phase					
Technical data					
UPS / type:	12 kVA	15 kVA	20 kVA	25 kVA	30 kVA
Rated power in kVA at power factor 0.8 inductive	12	15	20	25	30
Rated output current in A	52	65	87	108	130
required rectifier for: parallel operation, supply time 1h dimensions of housing for rectifier	16A	22A	30A	36A	36A
(H × W × D in mm)	1400 × 600 × 600	1400 × 600 × 600	1400 × 600 × 600	1400 × 800 × 600	1400 × 800 × 600
Required rectifier for: parallel operation, supply time 3h dimensions of housing for rectifier	42A	50A	60A	80A	100A
(H × W × D in mm)	1800 × 800 × 600	1800 × 800 × 600	1800 × 800 × 600	1800 × 800 × 800	1800 × 800 × 800
Required rectifier for: continuous operation, supply time 1h dimensions of housing for rectifier	80A	100A	120A	150A	200A
(H × W × D in mm)	1800 × 800 × 800	1800 × 800 × 800	1800 × 800 × 800	1800 × 800 × 800	1800 × 1000 × 800
Required rectifier for: continuous operation, supply time 3h dimensions of housing for rectifier	30A	36A	42A	50A	80A
(H × W × D in mm)	1400 × 600 × 600	1800 × 800 × 600	1800 × 800 × 600	1800 × 800 × 600	1800 × 800 × 800
System losses in kW at standby operation	0,7	0,8	1,0	1,2	1,3
Maximum permissible fuse for selective tripping < 500 ms, DIAZED type gl, in 16A	35	50	63	63	80
Bypass (230V / 50Hz) customer side fuse protection in A, dimensions of housing for bypass	80	100	125	160	200
(H × W × D in mm)	1800 × 600 × 600	1800 × 600 × 600	1800 × 600 × 600	1800 × 600 × 600	1800 × 600 × 600
Dimensions of housing for inverters (H × W × D in mm)	1800 × 800 × 600	1800 × 800 × 800	1800 × 800 × 800	1800 × 800 × 800	1800 × 800 × 800
battery capacity (108 Pb cells), suggestion incl. 20% reserve, supply time 1 h in Ah	150	150	200	250	300
Dimensions of housing for sealed lead-acid batteries, supply time 1 h (H × W × D in mm)	2000 × 1200 × 600	2000 × 1200 × 600	2 × 2000 × 1200 × 600	2 × 2000 × 1200 × 600	2 × 2000 × 1200 × 600
Battery capacity (108 Pb cells), suggestion incl. 20% reserve, supply time 3 h in Ah	300	350	350	600	600
Dimensions of housing for sealed lead-acid batteries, supply time 3 h (H + W + D in mm)	2 × 2000 × 1200 × 600	2 × 2000 × 1200 × 600	2 × 2000 × 1200 × 600	3 × 2000 × 1200 × 600	3 × 2000 × 1200 × 600
Largest individual transformer power in kVA	5	6,3	6,3	6,3	8
Short circuit current in A	261	326	435	543	652

battery racks for vented batteries available in any size, depending on the dimensions of the room, system may consist of at least 1 housing for rectifier, 1 housing for inverter, 1 housing for bypass

Technical Data

Battery-assisted central power supply system R-UPS-230V-50 Hz				
Output voltage 230 V / 50 Hz single phase				
Technical data				
UPS / type:	**40 kVA**	**50 kVA**	**60kVA**	**80 kVA**
Rated power in kVA at power factor 0.8 inductive	40	50	60	80
Rated output current in A	174	217	260	348
required rectifier for: parallel operation, supply time 1h dimensions of housing for rectifier	42A	50A	60A	100A
(H × W × D in mm)	1800 × 800 × 600	1800 × 800 × 600	1800 × 800 × 600	1800 × 800 × 600
Required rectifier for: parallel operation, supply time 3h dimensions of housing for rectifier	120A	150A	200A	250A
(H × W × D in mm)	1800 × 800 × 800	1800 × 800 × 800	1800 × 1000 × 800	1800 × 1000 × 800
Required rectifier for: continuous operation, supply time 1h dimensions of housing for rectifier	250A	300A	400A	500A
(H × W × D in mm)	1800 × 1000 × 800	1800 × 1000 × 800	1800 × 1000 × 800 + 1800 × 600 × 800	1800 × 1000 × 800 + 1800 × 600 × 800
Required rectifier for: continuous operation, supply time 3h dimensions of housing for rectifier	300A	400A	500A	600A
(H × W × D in mm)	1800 × 1000 × 800	1800 × 1000 × 800	1800 × 1000 × 800 + 1800 × 600 × 800	1800 × 1000 × 800 + 1800 × 600 × 800
System losses in kW at standby operation	1,8	2,1	2,5	3,6
Maximum permissible fuse for selective tripping < 500 ms, DIAZED type gl, in 16A	100	125	125	125
Bypass (230V / 50Hz) customer side fuse protection in A, dimensions of housing for bypass	250	315	400	400
(H × W × D in mm)	1800 × 600 × 600	1800 × 600 × 600	1800 × 600 × 600	1800 × 600 × 600
Dimensions of housing for inverters (H × W × D in mm)	1800 × 800 × 800	1800 × 1000 × 800	1800 × 1000 × 800	1800 × 1000 × 800
battery capacity (108 Pb cells), suggestion incl. 20% reserve, supply time 1 h in Ah	420	490	600	600
Dimensions of housing for sealed lead-acid batteries, supply time 1 h (H × W × D in mm)	2 × 2000 × 1200 × 600	2 × 2000 × 1200 × 800	3 × 2000 × 1200 × 600	3 × 2000 × 1200 × 800
Battery capacity (108 Pb cells), suggestion incl. 20% reserve, supply time 3 h in Ah	800	1000	1200	1500
Dimensions of housing for sealed lead-acid batteries, supply time 3 h (H + W + D in mm)	3 × 2000 × 1200 × 800	3 × 2000 × 1200 × 600 + 2000 × 800 × 800	4 × 2000 × 1200 × 800 2000 × 800 × 800	4 × 2000 × 1200 × 800 2000 × 800 × 800
Largest individual transformer power in kVA	8	8	8	8
Short circuit current in A	870	1087	1304	1739

battery racks for vented batteries available in any size, depending on the dimensions of the room, system may consist of at least 1 housing for rectifier, 1 housing for inverter, 1 housing for bypass

Technical Data

Battery-assisted central power supply system R-UPS-230V-50 Hz			
Output voltage 230 V / 50 Hz single phase			
Technical data			
UPS / type:	**100 kVA**	**120 kVA**	**160 kVA**
Rated power in kVA at power factor 0.8 inductive	100	120	160
Rated output current in A	3 × 145	3 × 173	3× 232
required rectifier for: parallel operation, supply time 1h dimensions of housing for rectifier	3 × 50 A	3 × 60 A	3 × 80 A
(H × W × D in mm)	2 × 1800 × 1600 × 600	2 × 1800 × 800 × 600	2 × 1800 × 800 × 600
Required rectifier for: parallel operation, supply time 3h dimensions of housing for rectifier	3 × 140 A	3 × 168 A	3 × 224 A
(H × W × D in mm)	2 × 1800 × 1600 × 800	2 × 1800 × 1000 × 800	2 × 1800 × 1000 × 800
Required rectifier for: continuous operation, supply time 1h dimensions of housing for rectifier	250 A	3 × 270 A	3 × 360 A
(H × W × D in mm)	2 × 1800 × 1000 × 800	1800 × 1000 × 800 1800 × 600 × 800	1800 × 1000 × 800 1800 × 600 × 800
Required rectifier for: continuous operation, supply time 3h dimensions of housing for rectifier	3 x 320 A	3 x 385 A	3 x 500 A
(H × W × D in mm)	2 × 1800 × 2000 × 800	1800 × 1000 × 800 1800 × 600 × 800	1800 × 1000 × 800 1800 × 600 × 800
System losses in kW at standby operation	4,2	5	7,2
Maximum permissible fuse for selective tripping < 500 ms, DIAZED type gl, in 16A	3 × 100	3 × 100	3 × 125
Bypass (230V / 50Hz) customer side fuse protection in A, dimensions of housing for bypass	3 × 160	3 × 200	3 × 250
(H × W × D in mm)	1800 × 600 × 600	1800 × 600 × 600	1800 × 600 × 600
Dimensions of housing for inverters (H × W × D in mm)	2 × 1800 × 1000 × 800	1800 × 1000 × 800	2 × 1800 × 1000 × 800
battery capacity (108 Pb cells), suggestion incl. 20% reserve, supply time 1 h in Ah	980	1200	1600
Dimensions of housing for sealed lead-acid batteries, supply time 1 h (H × W × D in mm)	3 × 2000 × 1200 × 800 2000 × 800 × 800	3 × 2000 × 1200 × 800 2000 × 800 × 800	Batteriegestell nach Raumgröße
Battery capacity (108 Pb cells), suggestion incl. 20% reserve, supply time 3 h in Ah	2000	2400	3000
Dimensions of housing for sealed lead-acid batteries, supply time 3 h (H + W + D in mm)	Batteriegestell nach Raumgröße möglich	Batteriegestell nach Raumgröße möglich	Batteriegestell nach Raumgröße möglich
Largest individual transformer power in kVA	8 (3 pha.)	8 (3 pha.)	8 (3 pha.)
Short circuit current in A	2174	2608	3478

battery racks for vented batteries available in any size, depending on the dimensions of the room,
system may consist of at least 1 housing for rectifier, 1 housing for inverter, 1 housing for bypass

Input Connection

UPS / type:	3 kVA	4 kVA	5 kVA	6 kVA	8 kVA	10 kVA	12 kVA
connection A (1h) – rectifier							
grid input power in mm²:	5×6	5×10	5×16	5×16	4×25/16	4×25/16	4×35/16
external mains fuse in A:	35	50	63	63	80	80	100
connection A (3h) – rectifier							
grid input power in mm²:	5×10	5×16	5×16	5×16	4×35/16	4×35/16	4×50/25
external mains fuse in A:	50	63	63	6	100	100	125
connection B							
battery input cable in mm²:	3×2,5	3×4	3×6	3×10	3×10	3×16	3×16
connection C – bypass							
grid input power in mm²:	3×2,5	3×4	3×6	3×6	3×10	3×16	3×16
mains fuse in A	20	25	35	35	50	63	63

UPS / type:	15 kVA	20 kVA	25 kVA	30 kVA	40 kVA	50 kVA	60 kVA
connection A (1h) – rectifier							
grid input power in mm²:	4×50/25	4×50/25	4×70/35	4×95/50	4×120/50	4×150/50	4×185/50
external mains fuse in A:	125	125	160	200	250	315	400
connection A (3h) – rectifier							
grid input power in mm²:	4×70/35	4×95/50	4×120/50	4×120/50	4×150/50	4×185/50	4×240/50
external mains fuse in A:	160	200	250	250	315	400	500
connection B							
battery input cable in mm²:	4×25/16	4×35/16	4×50/25	4×70/35	4×95/50	4×120/50	4×185/50
connection C – bypass							
grid input power in mm²:	3×25	3×35	3×50	3×70	3×95	3×120	3×150
mains fuse in A	80	100	125	160	200	250	315

UPS / type:	80 kVA	100 kVA	120 kVA	160 kVA
connection A (1h) – rectifier				
grid input power in mm²:	4×240/50	2×4×150/50	2×4×185/50	2×4×240/50
external mains fuse in A:	500	2×315	2×400	2×500
connection A (3h) – rectifier				
grid input power in mm²:	4×300/70	2×4×185/50	2×4×240/50	2×4×300/70
external mains fuse in A:	630	2×400	2×500	2×630
connection B				
battery input cable in mm²:	4×240/50	2×4×120/50	2×4×185/50	2×4×240/50
connection C – bypass				
grid input power in mm²:	3×185	2×3×120	2×3×150	2×3×185
mains fuse in A:	400	2×250	2×315	2×400

*) Block diagram on page 2

Isolation Transformers

for Medical Rooms According to VDE 0570-2-15 / 0100-710

IT-Transformers

The bypass distribution cabinet can be configured to supply any number of final circuits to be connected to IT transformers. In this context, please find below the technical specifications of isolation transformers. Protection classes IP00 and IP54 as well as single-phase and three-phase versions are available.

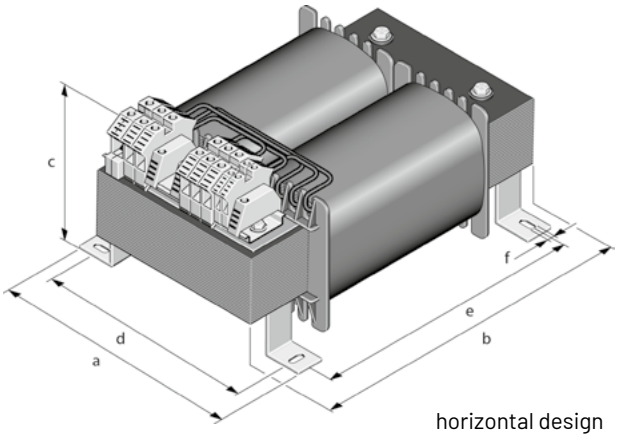
To protect the isolation transformers against overload, PTC thermistors are installed in the windings and connected to a temperature monitoring device.

Isolation Transformer for Medical Rooms

Corrosion and moisture protection through complete resin impregnation, max, ambient temperature: 40 °C. Insulation class E, degree of protection: IP00, suitable for installation up to IP23, designed for protection class II, touch-proof screw terminals in accordance with DGUV (Deutsche Gesetzliche Unfallversicherung) regulation 3, separate terminal blocks, separate windings and shield winding, center tap for winding monitoring, center tap for winding monitoring, built-in PTC thermistors according to DIN 44081, rated at 120 °C. Frequency: 50–60 Hz.

Short-circuit voltage: < 3% of the input voltage
No-load current: < 3% of the input current
Incrush current: < 12x the input current

input voltage: 230V
output voltage: 230V



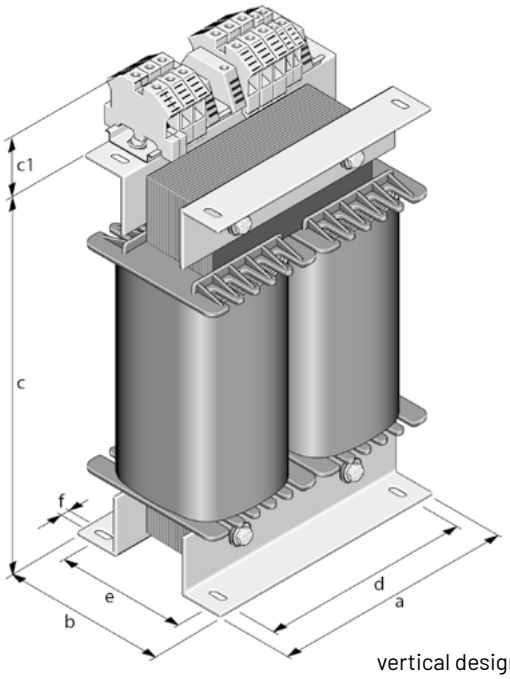
horizontal design

Single-Phase Transformer for Medical Rooms

Corrosion and moisture protection through complete resin impregnation, max, ambient temperature: 40 °C. Insulation class E, degree of protection: IP00, suitable for installation up to IP23, designed for protection class II, touch-proof screw terminals in accordance with DGUV regulation 3, separate terminal blocks, separate windings and shield winding, center tap for winding monitoring, center tap for winding monitoring, built-in PTC thermistors according to DIN 44081, rated at 120 °C. Frequency: 50–60 Hz.

short-circuit voltage: < 3% of the input voltage
no-load current: < 3% of the input current
incrush current: < 12x the input current

input voltage: 230V
output voltage: 230V



vertical design

Type	Performance/ Rating KVA	a mm	b mm	c mm	d mm	e mm	f mm	Weight kg
LM 3,5	3,15	195	280	204	174	200	7,0	34,5
LM 4,5	4,00	230	340	189	204	240	9,0	40,0
LM 5,0	5,00	230	340	225	204	240	9,0	46,5
LM 6,3	6,30	260	390	220	234	280	9,0	54,0
LM 7,5	7,00	260	390	220	234	280	9,0	63,0
LM 8,8	8,00	260	390	220	234	280	9,0	77,0

Type	Performance/ Rating KVA	a mm	b mm	c mm	c1 mm	d mm	e mm	f mm	Weight kg
SM 3,5	3,15	200	213	260	60-80	140	181	10,0	34,5
SM 4,5	4,00	240	178	310	60-80	200	150	10,0	40,0
SM 5,0	5,00	240	203	310	60-80	200	165	10,0	46,5
SM 6,3	6,30	280	203	365	60-90	240	161	12,0	54,0
SM 7,5	7,00	280	218	365	60-90	240	176	12,0	63,0
SM 8,8	8,00	280	233	365	60-90	240	191	12,0	77,0

Isolation Transformers

for Medical Rooms According to VDE 0570-2-15 / 0100-710

Three-Phase Transformer for Medical Rooms

Corrosion and moisture protection through complete resin impregnation, max, ambient temperature: 40 °C. Insulation class E, degree of protection: IP00, suitable for installation up to IP23, designed for protection class II, touch-proof screw terminals in accordance with DGUV regulation 3, separate terminal blocks, separate windings and shield winding, center tap for winding monitoring, built-in PTC thermistors according to DIN 44081, rated at 120 °C. Frequency: 50–60 Hz."

short-circuit voltage: < 3% of the input voltage
no-load current: < 3% of the input current
incrush current: < 12x the primary current

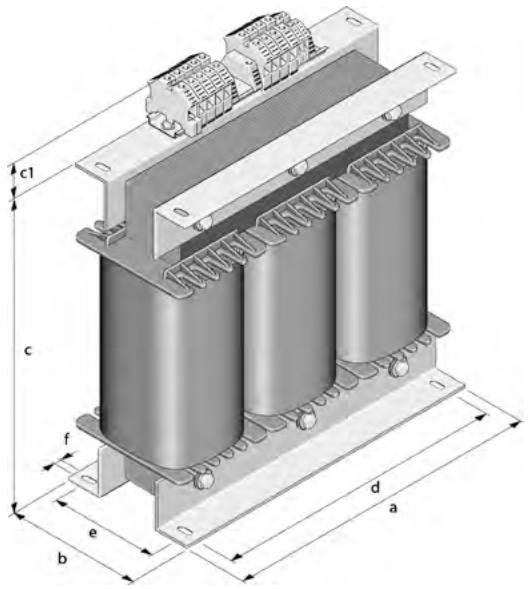
input voltage: 3x 400V
output voltage: 3x 230V

Three-Phase Isolation Transformer for Medical Rooms

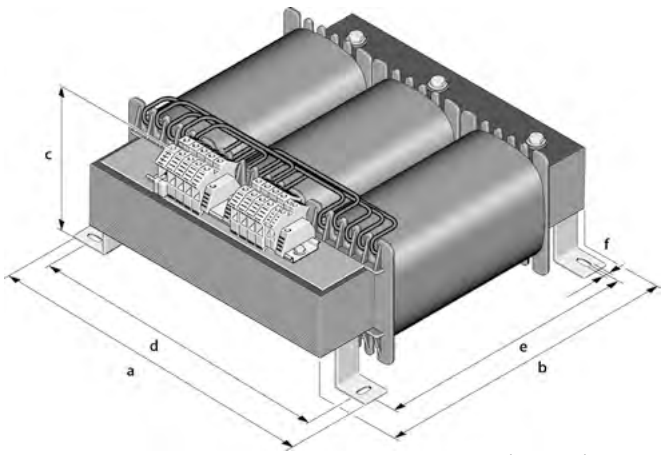
Corrosion and moisture protection through complete resin impregnation, max, ambient temperature: 40 °C. Insulation class E, degree of protection: IP00, suitable for installation up to IP23, designed for protection class II, touch-proof screw terminals in accordance with DGUV regulation 3, separate terminal blocks, separate windings and shield winding, center tap for winding monitoring, center tap for winding monitoring, built-in PTC thermistors according to DIN 44081, rated at 120 °C. Frequency: 50–60 Hz."

short-circuit voltage: < 3% of the input voltage
no-load current: < 3% of the input current
incrush current: < 12x the primary current

input voltage: 3x 400V
output voltage: 3x 230V



horizontal design



vertical design

Type	Performance/ Rating KVA	a mm	b mm	c mm	c1 mm	d mm	e mm	f mm	Weight kg
DSM 3,5	3,15	300	196	270	60-90	240	165	11,0	41,0
DSM 4,0	4,00	300	206	270	60-90	240	175	11,0	47,0
DSM 5,0	5,00	360	182	312	60-90	310	144	11,0	52,0
DSM 6,3	6,30	360	197	312	60-90	310	160	11,0	70,0
DSM 7,5	7,00	420	177	312	60-90	310	160	11,0	70,0
DSM 8,8	8,00	420	201	365	60-90	370	156	11,0	78,0
DSM 10,0	10,00	420	227	365	60-90	370	186	11,0	100,0

Type	Performance/ Rating KVA	a mm	b mm	c mm	d mm	e mm	f mm	Weight kg
DSM 3,5	3,15	330	280	194	298	200	9,0	41,0
DSM 4,0	4,00	330	280	194	298	200	9,0	47,0
DSM 5,0	5,00	394	340	174	358	240	9,0	52,0
DSM 6,3	6,30	394	340	190	358	240	9,0	70,0
DSM 7,5	7,00	452	390	204	408	280	11,0	70,0
DSM 8,8	8,00	452	390	189	408	280	11,0	78,0
DSM 10,0	10,00	452	390	219	408	280	11,0	100,0

Notes

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