



BACK UP POWER SUPPLIES PLUG-IN

LS1500 CHASSIS (19" 1U)

LS1500 CHASSIS (19" 2U)

LS1500.ZS BS (POWER SUPPLY MANAGEMENT UNIT)

LS300.Z (RECTIFIER, 350W/700W)

LS300.Z (DC/DC CONVERTER, 420W)

LS1500 (ACCESSORY)

- ❑ Chassis for 1-3x rectifiers (DC converters) (12V, 24V, 48V) & 1x SNMP management system
- ❑ LVD – battery protection circuit against excessive discharge
- ❑ Inputs for temperature sensor and two binary input signals (output / battery breaker, user ...)
- ❑ Remote signalization – urgent and non-urgent alarm – potential free relay contacts
- ❑ 16 mm² terminals for battery and outputs connection
- ❑ Standards: Electrical safety - EN 60950, EMC - EN 61000-3-2, EN 55032



The LS1500 type power sources are designed to back up supply devices and to simultaneously charge the connected battery. In case of mains failure the connected battery continues to supply load without interruption. The power source unit is designed as a plug-in module that can be added or replaced during operation, without a need to turn the system off.

The chassis LS1500 type is designed to connect 1 or 2 independent, or 3x 230V~50Hz power source and up to 6x protected outputs. The basic design is with just one non fused output. The power source includes a battery disconnecter. The LS1500 chassis obtains slot for a plug-in power supply management system unit and 3 slots for rectifier units. The set includes power cord(s) and a temperature sensor.

The LS1500 chassis is designed for 19" frames. Mains connection, battery and output terminals, input and output signaling and temperature sensor terminals are on the rear panel. There is no possibility to connect more LS1500 units into parallel operation.

MODEL SPECIFICATIONS	LS1500.J CHASSIS – 1U BASIC	LS1500.J CHASSIS – 1U	LS1500.D CHASSIS – 1U BASIC	LS1500.D CHASSIS – 1U	LS1500.T CHASSIS – 1U BASIC	LS1500.T CHASSIS – 1U
Mains connection	1 input cable (IEC type)	1 input cable (IEC type)	2 input cables (IEC type)	2 input cables (IEC type)	L1, L2, L3 ,N, PE 3-phase terminal connection	L1, L2, L3 ,N, PE 3-phase terminal connection
Battery input terminals	16mm ² /70A terminals	16mm ² /70A terminals	16mm ² /70A terminals	16mm ² /70A terminals	16mm ² /70A terminals	16mm ² /70A terminals
Load output terminals	16mm ² / 1x 70A terminals, no protection	16mm ² / 6x protected output up to 20A	16mm ² / 1x 70A terminals, no protection	16mm ² / 6x protected output up to 20A	16mm ² / 1x 70A terminals, no protection	16mm ² / 6x protected output up to 20A
Remote signalization	Potential free relay contacts - urgent, non-urgent alarm	Potential free relay contacts - urgent, non-urgent alarm	Potential free relay contacts - urgent, non-urgent alarm	Potential free relay contacts - urgent, non-urgent alarm	Potential free relay contacts - urgent, non-urgent alarm	Potential free relay contacts - urgent, non-urgent alarm
Temperature sensor connection	Yes	Yes	Yes	Yes	Yes	Yes
Binary input terminals	2x input / battery breaker contact, user contact...	2x input / battery breaker contact, user contact...	2x input / battery breaker contact, user contact...	2x input / battery breaker contact, user contact...	2x input / battery breaker contact, user contact...	2x input / battery breaker contact, user contact...
Dimensions W x H x D (mm)	436 x 45(1U) x 320	436 x 45(1U) x 320	436 x 45(1U) x 320	436 x 45(1U) x 320	436 x 45(1U) x 320	436 x 45(1U) x 320
Weight (kg)	1.90kg	2.00kg	1.90kg	2.00kg	1.90kg	2.00kg
Part No.	IP.4131.765.06	IP.4131.765.14	IP.4231.765.15	IP.4231.765.03	IP.4331.765.16	IP.4331.765.04

- ☐ Chassis for 1-3x rectifiers (DC converters) (24V, 48V) & 1x SNMP management system
- ☐ LVD – battery protection circuit against excessive discharge
- ☐ Inputs for temperature sensor and two binary input signals (output / battery breaker, user ...)
- ☐ Remote signalization – urgent and non-urgent alarm – potential free relay contacts
- ☐ 16 mm² terminals for battery and outputs connection
- ☐ Standards: Electrical safety - EN 60950, EMC - EN 61000-3-2, EN 55032



The LS1500 type power sources are designed to back up supply devices and to simultaneously charge the connected battery. In case of mains failure the connected battery continues to supply load without interruption. The power source unit is designed as a plug-in module that can be added or replaced during operation, without a need to turn the system off.

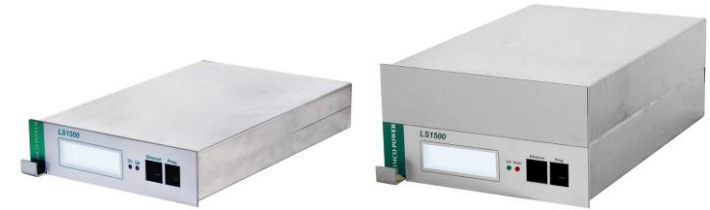
The chassis LS1500 type is designed to connect 1 or 2 independent, or 3x 230V~50Hz power source and up to 6x protected outputs. The basic design is with just one non fused output. The power source includes a battery disconnecter. The LS1500 chassis obtains slot for a plug-in power supply management system unit and 3 slots for rectifier units. The set includes power cord(s) and a temperature sensor.

The LS1500 chassis is designed for 19" frames. Mains connection, battery and output terminals, input and output signaling and temperature sensor terminals are on the rear panel. There is no possibility to connect more LS1500 units into parallel operation.

MODEL SPECIFICATIONS	LS1500.J CHASSIS – 2U BASIC	LS1500.J CHASSIS – 2U	LS1500.D CHASSIS – 2U BASIC	LS1500.D CHASSIS – 2U	LS1500.T CHASSIS – 2U BASIC	LS1500.T CHASSIS – 2U
Mains connection	1 input cable (IEC type)	1 input cable (IEC type)	2 input cables (IEC type)	2 input cables (IEC type)	L1, L2, L3 ,N, PE 3-phase terminal connection	L1, L2, L3 ,N, PE 3-phase terminal connection
Battery input terminals	16mm ² /70A terminals	16mm ² /70A terminals	16mm ² /70A terminals	16mm ² /70A terminals	16mm ² /70A terminals	16mm ² /70A terminals
Load output terminals	16mm ² / 1x 70A terminals, no protection	16mm ² / 6x protected output up to 20A	16mm ² / 1x 70A terminals, no protection	16mm ² / 6x protected output up to 20A	16mm ² / 1x 70A terminals, no protection	16mm ² / 6x protected output up to 20A
Remote signalization	Potential free relay contacts - urgent, non-urgent alarm	Potential free relay contacts - urgent, non-urgent alarm	Potential free relay contacts - urgent, non-urgent alarm	Potential free relay contacts - urgent, non-urgent alarm	Potential free relay contacts - urgent, non-urgent alarm	Potential free relay contacts - urgent, non-urgent alarm
Temperature sensor connection	Yes	Yes	Yes	Yes	Yes	Yes
Binary input terminals	2x input / battery breaker contact, user contact...	2x input / battery breaker contact, user contact...	2x input / battery breaker contact, user contact...	2x input / battery breaker contact, user contact...	2x input / battery breaker contact, user contact...	2x input / battery breaker contact, user contact...
Dimensions W x H x D (mm)	436 x 89(2U) x 320	436 x 89(2U) x 320	436 x 89(2U) x 320	436 x 89(2U) x 320	436 x 89(2U) x 320	436 x 89(2U) x 320
Weight (kg)	2.8kg	2.86kg	2.8kg	2.86kg	2.8kg	2.86kg
Part No.	IP.4141.765.07	IP.4141.765.13	IP.4241.765.10	IP.4241.765.09	IP.4341.755.08	IP.4341.755.11



- ☒ It supervises and controls the power supply system type LS1500
- ☒ LCD display unit 4x20 characters, SNMP agent with WEB page, events history
- ☒ RTC real time clock, NTP time server
- ☒ Continuity test, remote battery capacity test
- ☒ IUoU temperature controlled battery charging, LVD (low voltage disconnect)
- ☒ Urgent and non-urgent alarms – LED, potential free relay contacts
- ☒ Firmware update through Ethernet network



The LS1500.ZS BS module supervises and controls LS1500 power supply system. It informs about back up power system conditions locally through an LCD 4x20 character display and remotely through an SNMP adapter with its own WEB page. In case of AC power failure, the connected battery provides the backup supply of connected load. Information about autonomy time and on battery time is displayed on LCD display. Based on operating conditions the most suitable battery charge procedure is set up with respect to full capacity recharge time and lifetime (IUoU temperature controlled charging). Cables continuity is periodically monitored. With respect to discharge current, temperature and battery capacity is the battery switched off and on to the DC power bus. The SNMP adapter allows you remotely perform capacity test. RTC, the real time clock can be synchronized through the NTP time server.

Alarms are classified into 2 levels – urgent and non-urgent, which are displayed via 2x two-color LEDs on the front panel and via 2x potential-free relay contacts on the rear panel of the LS1500 chassis. SNMP has a WEB page, where can be seen or controlled the status of the power supply system. Firmware upgrade can be carried out remotely via the Ethernet connection.

LS1500.ZS BS is designed as plug-in module with height 1U or 2U (units). Monitoring and control is through a connector on the rear.

MODEL SPECIFICATIONS		LS1500.ZS BS 1U	LS1500.ZS BS 2U
Input voltage	Vin	7 - 60V DC (270-24mA)	7 - 60V DC (270-24mA)
Display	LCD	4 lines x 20 characters LCD (white backlight)	4 lines x 20 characters LCD (white backlight)
Communication	Relay	Controlling 2x potential-free relay contacts UR – urgent alarm. NUR – non-urgent alarm	Controlling 2x potential-free relay contacts UR – urgent alarm. NUR – non-urgent alarm
	TCP/IP	Ethernet, SNMP with internal WEB page	Ethernet, SNMP with internal WEB page
	LVD	Low voltage disconnect – controlled switch	Low voltage disconnect – controlled switch
Signalization (2 x LED)	LED1	UR – urgent alarm	UR – urgent alarm
	LED2	NUR – non-urgent alarm	NUR – non-urgent alarm
Signal inputs	BIN	2x bin.input for sign. Ext. failures – user, user2	2x bin.input for sign. Ext. failures – user, user2
	TEMP	Temperature sensor	Temperature sensor
Alarm contacts	Relay 1	UR – urgent alarm - 0.5A/250V DC	UR – urgent alarm - 0.5A/250V DC
	Relay 2	NUR – non-urgent alarm - 0.5A/250V DC	NUR – non-urgent alarm - 0.5A/250V DC
SNMP		WEB interface - HTTP protocol. SNMP protocol	WEB interface - HTTP protocol. SNMP protocol
		Capacity test, continuity test, the history of events (128x), RTC, NTC time synchronisation server	Capacity test, continuity test, the history of events (128x), RTC, NTC time synchronisation server
Dimensions W x H xD(mm)		170 x 45(1U) x 250mm	170 x 89(2U) x 250mm
Weight (kg)		0.45kg	0.57kg
Degree of protection		IP40	IP40
Part No.		IP.6400.043.01	IP.6400.043.03

LS300.Z (RECTIFIER, 350W/700W)

- Input voltage 230V~50Hz
- Output voltage 48V (12V, 24V) / 350W (1U) or 48V(24V) / 700W (2U) output power
- Active PFC, resonant technology
- High efficiency (94%)
- Temperature operating range -30°C~+60°C
- Mounting type: plug-in module
- Standards: Electrical safety - EN 60950, EMC - EN 61000-3-2, EN 55032



The LS300.Z type rectifier is a plug-in unit for LS1500 chassis. Rectifier units are built in most advanced technology of the energy conversion with respect to maximum efficiency. The 1U unit provides 48V (12V, 24V) / 350W output, the 2U unit provides 48V (24V) / 700W output power. In LS1500 power supply configuration are rectifiers controlled through LS1500.ZS BS management system unit. The fan is temperature controlled.

The green LED inside informs about rectifier operation.

Model numbering:

LS300.Z XXYYP - Z = plug-in module, XX = nominal output voltage, YY = maximum output current, P = parallel operation

LS300.Z rectifiers are designed as plug-in units. Input, output and control pins are on the rear connector.

MODEL SPECIFICATIONS	LS300.Z 1225P 1U	LS300.Z 2412P 1U	LS300.Z 4806P 1U	LS300.Z 2425P 2U	LS300.Z 4812P 2U
Input voltage	230V~50Hz	230V~50Hz	230V~50Hz	230V~50Hz	230V~50Hz
Output voltage	13.8V(25A)	27.6V(12.5A)	55.2V(6.25A)	27.6V(25A)	55.2V(12.5A)
Output power	350W	350W	350W	700W	700W
Efficiency	92%	93%	94%	93%	94%
Dielectric strength input/output	4kV	4kV	4kV	4kV	4kV
Operating temperature	-30°C - +60°C	-30°C - +60°C	-30°C - +60°C	-30°C - +60°C	-30°C - +60°C
Local signalization	LED - rectifier OK	LED - rectifier OK	LED - rectifier OK	LED - rectifier OK	LED - rectifier OK
Parallel operation	Yes	Yes	Yes	Yes	Yes
Air flow	controlled	controlled	controlled	controlled	controlled
Overcurrent protection	26A	13A	6.5A	26A	13A
Over temperature protection	85°C	85°C	85°C	85°C	85°C
Overvoltage protection	Yes	Yes	Yes	Yes	Yes
Undervoltage protection	Yes	Yes	Yes	Yes	Yes
Mounting type:	Plug-in module	Plug-in module	Plug-in module	Plug-in module	Plug-in module
Dimension W x H x D (mm)	89 x 45(1U) x 250	89 x 45(1U) x 250	89 x 45(1U) x 250	89 x 88 (2U) x 250	89 x 88 (2U) x 250
Weight (kg)	0.65kg	0.65kg	0.65kg	1.2kg	1.2kg
Degree of protection	IP20	IP20	IP20	IP20	IP20
Part No.	IP.2131.044.08	IP.2131.044.02	IP.2131.044.03	IP.2131.044.06	IP.2131.044.05

- ❑ Input voltage 48V (36-72V)
- ❑ Output voltage 24V(15A) adjustable, 420W output power
- ❑ ZVS, parallel operation, soft start,
- ❑ High efficiency (92.5%)
- ❑ Temperature operating range -30°C-+60°C
- ❑ Mounting type: plug-in module
- ❑ Standards: Electrical safety - EN 60950, EMC - EN 55032



The LS300.Z 48_2415 DC converter is a plug-in unit for LS1500 chassis. DC/DC converter is built in most advanced technology with of the energy conversion with respect to maximum efficiency (ZVS). The unit provides 24V adjustable output up to 420W. Soft start, temperature controlled fan switching, input and output filter are some of the main features.




The green LED inside informs about rectifier operation. The LS1500.ZS BS management unit gets information about OK/ERR state of the DC/DC converter.

Model specification:

LS300.Z 48_2415 - Z = plug-in module, 48 = nominal output voltage, 24 = nominal output voltage, 15 = maximum output current




LS300.Z 48_2415 DC/DC converter is designed as plug-in unit. Input pins are on the rear connector, output on the front panel thru removable connector for up to 6mm² cables.

MODEL SPECIFICATIONS	LS300.Z 48_2415 1U
Input voltage	36-72VDC
Output voltage	24V (21-27.6V) / 15A
Output power	420W
Efficiency	92.5%
Dielectric strength input/output	1.5kV
Operating temperature	-30°C - +60°C
Local signalization	LED – DC converter OK
Parallel operation	Yes
Air flow	Temperature controlled fan
Overcurrent protection	17A
Over temperature protection	85°C
Overvoltage protection	-
Undervoltage protection	Yes
Mounting type:	Plug-in module
Dimension W x H x D (mm)	89 x 45(1U) x 250
Weight (kg)	0.5kg
Degree of protection	IP20
Part No.	IP.1431.043.22

-  Accessory modules designed for LS1500 chassis with 1U/2U units high
-  Breaker extension unit
-  Blind plug-in units for proper air venting

Power supply system of LS1500 type, in addition to power supply management unit and rectifier units, contains several accessory units for output extensions or for blinding free rectifiers positions to ensure a proper air venting.

LS300.Z FB01 module is a plug-in module for output distribution with 4 breakers up to 10A with switch equipped with LED signalization
 LS1500 1U blind plug-in unit is intended for proper air venting of LS1500 chassis with 1U high (44mm)
 LS1500 2U blind plug-in unit is intended for proper air venting of LS1500 chassis with 2U high (88mm)

MODEL SPECIFICATIONS	LS300.Z FB01 1U	LS1500 blinder 1U	LS1500 2U blinder 2U
PICTURE			
Description	Output distribution unit with 4 switched on/off breaker outputs up to 10A	1U blinder for proper air venting of LS1500 chassis	2U blinder for proper air venting of LS1500 chassis
Signalization	LED signalization of switched off output		
Output	4x output up to 10A/80V		
Mounting type	Plug-in unit	Plug-in unit	Plug-in unit
Dimension W x H x D (mm)	89 x 45(1U) x 250	89 x 45(1U) x 36mm	89 x 88(2U) x 36mm
Weight (kg)	0.33kg	0.05kg	0.085kg
Degree of protection	IP20	IP20	IP20
Part No.	IP.9431.043.01	IP.0000.000.02	IP.0000.000.03