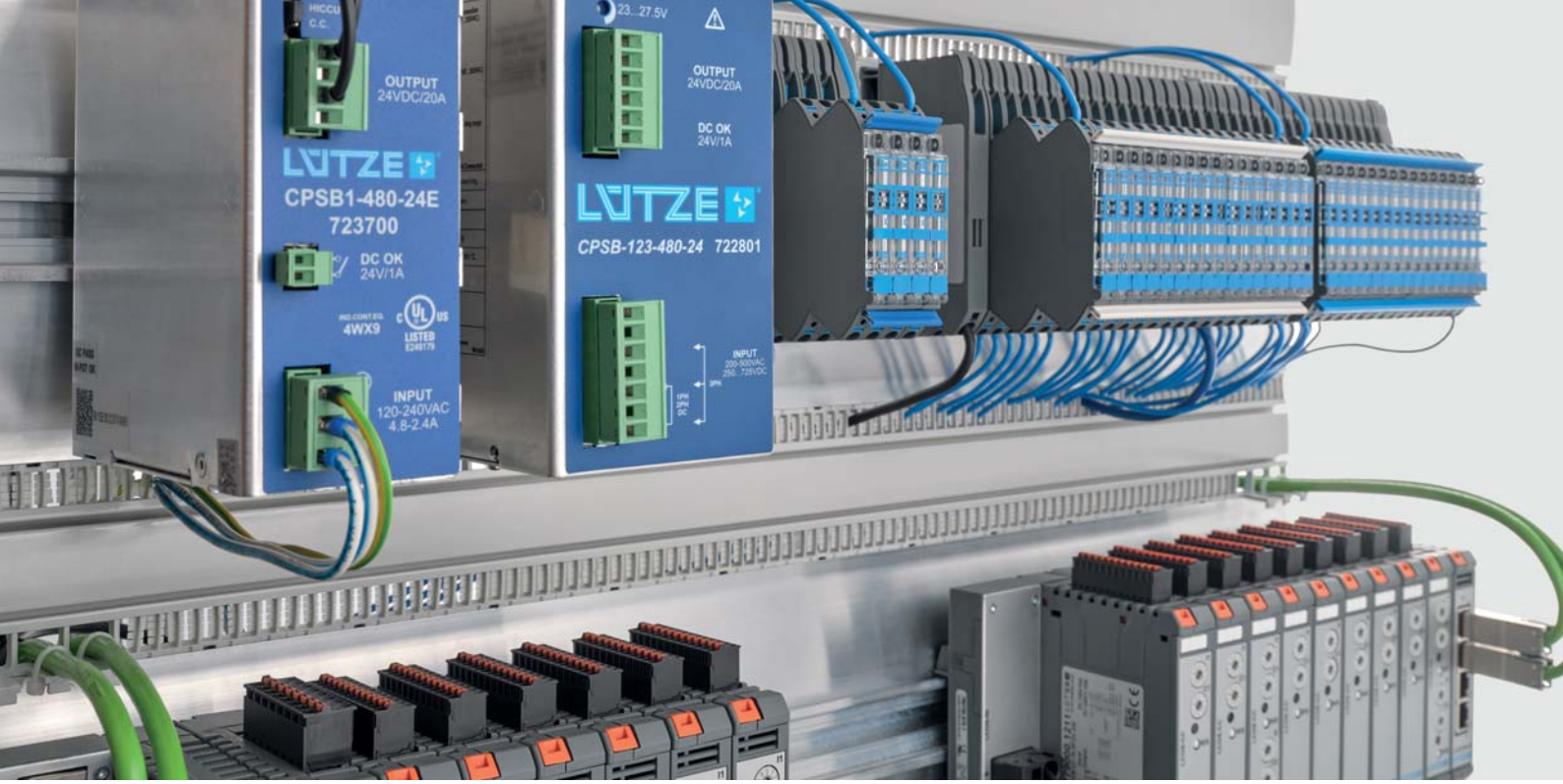


Control Solutions

Industrial Power Supplies

Compact Series

LOCC-Box Series

LCOS Series

SYSTEMATIC TECHNOLOGY

Efficiency in Automation

Cable • Connectivity • Cabinet • Control

Cable Solutions

Connectivity Solutions

Cabinet Solutions

Control Solutions

Transportation Solutions

Welcome to LÜTZE

LÜTZE - Efficiency in Automation

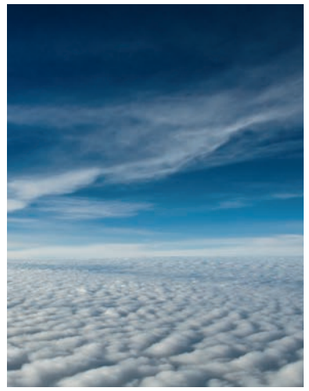
A tradition in automation for over 60 years, with countless pioneering achievements and patents, the LUETZE INTERNATIONAL Group is today one of the leading companies in the automation industry. LÜTZE supplies very efficient electronic and electrotechnical components, system solutions for automation and high tech for rail engineering.

The comprehensive and coordinated supply program ranges from high flexing cables and cable assemblies, to energy efficient *Air***STREAM** wiring systems for control cabinets through to intelligent Industry 4.0 solutions from the fields of interface technology, current monitoring, power supply and Ethernet infrastructure.

The LUETZE INTERNATIONAL Group has multiple locations throughout Europe, Asia and the USA and numerous distribution partners across the world to provide global product availability and service to our customers in all markets.

LÜTZE is one of the leading suppliers in the rail technology field. LÜTZE Transportation solutions are installed in numerous locomotives, city rail and underground rail systems, as well as high-speed trains across the world.

LÜTZE
SYSTEMATIC TECHNOLOGY



Business Management:
Sustainable and forw ard-looking

„The competitiveness of our industry and of its suppliers depends quite substantially on how we succeed in developing practical results. The results that we produce together today, are our competitive advantages in the future.“
Udo Lütze,
Member of the Executive Committee of the Green Carbody Innovation Alliance

The future is blue

Sustainable enterprise means thinking and planning ahead, understanding and embedding the belief that long lasting success is more important than short-term profit maximisation.

This is an attitude that has existed within LÜTZE for quite some time. Economic and environmental responsibilities complement each other well and are reflected in the sustainable management and product policy - and from now in the *Sky***BLUE** campaign.

We manufacture our products in a resourceful and energy-conscious manner. We use long lasting, environmentally-friendly materials. And our products, in turn, help our customers save energy and resources.
Good for everyone: for us, for the environment, for our customers a win-win-win situation.

Goods with real value

The value of a product or a solution from LÜTZE is determined by its sustainable qualities as well. Every innovation is only as successful in the future if it has a long-term positive effect. Therefore, we provide long lasting as well as highly efficient components.
We are incorporating the necessary knowledge and manufacturing competence in numerous joint projects with the objective of improving energy efficiency and sustainable technologies and industries. Thus, LÜTZE provides answers and demonstrates how to handle resources responsibly, with our environment and our future in mind.

Innovations-Allianz Green Carbody Technologies

DQS ISO 14001

RoHS

Power Supplies from LÜTZE:
Energy efficient and space saving

The entire range
from mains adapters through to uninterruptible power supplies

High efficiency
through advanced digital technology
Efficiency up to >94 %

Extremely compact

Power Boost

Power range
from 120 W up to 2400 W

Output voltages
from DC 12 V up to DC 72 V.

Power Supplies · Product Overview

LCOS Modular

LCOS Modular

Compact Economy

Compact Ultra

Compact Universal

Compact 3-phase

AC / DC Power Supplies

1-phase	2-phase	3-phase	1/2/3-phase	modular	30W	40W, 50W	60W	80W	120W	240W	480W	720W	960W	2400W	Red.-Management	Efficiency (%)	Power Boost	Compact	5V	12V	24V	48V	72V	Pluggable, Push-In	Screw		Part number	Type	Page
•				•	•											89	•	•				•			•			779101.0213	LCOS-PS-1-30-24	20
•				•			•									90	•	•				•			•			779101.0313	LCOS-PS-1-60-24	21
•				•					•							93	•	•				•			•			779101.0413	LCOS-PS-1-120-24	22

AC / DC Power Supplies

1-phase	2-phase	3-phase	1/2/3-phase	modular	30W	40W, 50W	60W	80W	120W	240W	480W	720W	960W	2400W	Red.-Management	Efficiency (%)	Power Boost	Compact	5V	12V	24V	48V	72V	Pluggable, Push-In	Screw	Pluggable screw	Part number	Type	Page
•									•							84	•	•			•					•	723510	CPSB1-120-12E	24
•									•							87	•	•				•				•	723500	CPSB-1-120-24E	25
•										•						86	•	•			•					•	723610	CPSB1-240-12E	26
•										•						87	•	•				•				•	723600	CPSB1-240-24E	27
•											•					91	•	•			•					•	723701	CPSB1-480-24-E	28
•									•							90	•	•				•				•	723501	CPS2B1-120-24	29
•									•							90	•	•					•			•	723521	CPSB-1-120-48R	30
•										•						86	•	•			•					•	723601	CPS2B1-240-24	31
•										•						93	•	•				•				•	723621	CPSB1-480-24-E	32
•											•					93	•	•				•				•	723700	CPSB1-480-24E	33
											•					94	•	•					•			•	723721	CPSB1-480-24-E	34
•	•								•							86	•	•				•				•	722995	CPSB2-120-24	35
			•							•						91	•	•				•				•	722996	CPSB-123-240-24	36
			•						•		•					92	•	•				•				•	722801	CPSB-123-480-24	37
		•							•							91	•	•				•			•		722818	CPSB3-120-24	38
			•							•						93	•	•				•			•		722820	CPSB3-240-24	39
		•												•		91	•	•				•				•	722811	CPSB3-960-24	40
		•												•		93	•	•					•			•	722812	CPSB3-960-48	41
		•												•		94	•	•						•		•	722813	CPSB3-960-72	42
		•													•	92	•	•				•			•		722814	CPSB3-2400-24	43
		•													•	92	•	•					•			•	722816	CPSB3-2400-48	44
		•													•	92	•	•						•		•	722817	CPSB3-2400-72	45
										•						92		•		•	•	•				•	723300	CUDC-240-55	46
																99		•		•	•	•				•	722999	CPSRM50	47

Power Supplies · Product Overview

DC USV

Buffer module

LOCC-Box

LCOS CC

DC - USP Supply

Lead based	NiMH	Li-ion	I_{Load} adjustable	DC 12V	DC 24V	DC 48V	DC 72V	DC 10A	DC 20A	int. fuse	Deep discharging protection	Singal output	Battery housing	Software configuration	Display	Pluggable, Push-In	Screw	Pluggable Screw			Part number	Type	Page
•	•	•	•					•		•		•						•			723110	CNUPS24	48
•	•	•	•	•	•				•		•	•		•	•			•			723100	CDCU20 12/24DC UPS	49
													•								723115	CNBP30	51

DC Control Circuit Protection devices

1-channel	2-channel	1-pole switching	2-pole switching	Current adjustable	Adjustable characteristic	Fixed current setting	Fixed characteristic setting	Rated current max. 2A	Rated current max. 6A	Rated current max. 10A	Rated current max. 16A	Dimensioning NEC Class 2	Dimensioning of safety relay	DC 12V/24V	DC 48V	1-pole energy bus	2-pole energy bus	Internal communication bus	Gateway CanOpen	Gateway IO - Link	Gateway Profibus	Gateway EtherCAT	Profinet bus coupler	EtherCAT bus coupler	Ethernet IP bus coupler	AirBLOWER control unit	Spring-cage connection	Pluggable Push-In	Part number	Type	P.
•		•		•	•					•			•	•														•	716480	LOCC-Box-M	54
•		•		•	•					•			•	•														•	716400	LOCC-Box FB 7-6400	55
•		•		•	•					•			•	•														•	716401	LOCC-Box FB 7-6401	56
	•	•		•			•		•				•	•														•	716415.0300	LOCC-Box ED 7-6415	57
•		•				•	•			•			•	•														•	716407.xxxx	LOCC-Box-EC-I-C	58
•		•		•			•			•			•	•														•	716412.xxxx	LOCC-Box-EC-I-C	59
•		•		•	•						•		•	•														•	716413	LOCC-Box-C2 7-6413	60
•		•		•	•			•					•	•														•	716409	LB FB2A 7-6409	61
•		•		•	•				•				•	•														•	716406	LB FB48 7-6406	62
•		•		•	•					•			•	•			•											•	716403	LOCC-Box-Net 7-6403	63
•		•		•	•					•			•	•			•											•	716410	LOCC-Box-Net 7-6410	64
	•	•		•					•				•	•			•											•	716419.0300	LOCC-Box-EDNet I-C3	65
•		•			•	•				•			•	•			•											•	716411	LOCC-Box-Net 7-6411	66
•		•		•	•						•		•	•			•											•	716414	LB C2 NET 7-6414	67
•		•		•	•				•			•	•	•			•											•	716418	LB Net-SC 7-6418	68
•													•	•					•									•	716455	LOCC-Box Gateway	69
													•							•								•	716458	LB GWPB 0-6458	70
		•	•		•	•					•			•			•											•	779100.2111	LCOS-CC-2K-1P DC 24V	86
•			•	•	•					•			•				•											•	779100.1211	LCOS-CC-1K-2P DC 24V	87
	•	•		•	•					•			•				•											•	773100.2111	LCOS-CCI-2K-1P-DC24V	89
•			•	•	•					•			•				•											•	773100.1211	LCOS-CCI-1K-2P-DC24V	91
													•										•					•	778000.1301	LCOS-BC-PN	92
													•											•				•	778000.1401	LCOS-BC-EC	93
													•												•			•	778000.1701	LCOS-BC-ETIP	94
													•													•		•	777100.0011	LCOS-AB-I	95

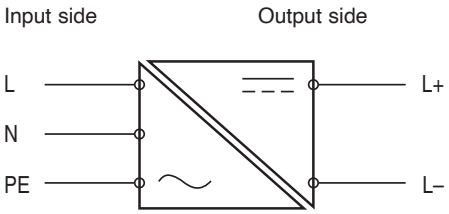
Power Supplies · Basics

A power supply has a decisive influence on the availability and operational reliability of electrical systems.

Consequently, the selection of the right power supply should be just as critically and carefully undertaken as that of the other system components.

1. General structure

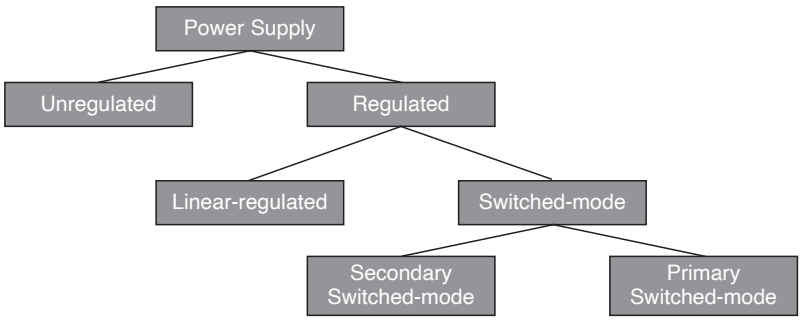
Regardless of the technology employed, power supplies are devices with an input side and an isolated output side.



In technology terms, however, there are two different basic designs:

Unregulated and regulated.

The regulated variants are subdivided into linear-regulated and switched-mode power supplies.



The key criteria in selection of a power supply are:

Input side:

Input voltage
Primary grounding
Current consumption
Inrush current
Input fuse
Frequency
DC supply
Power failure buffering
Power Factor Correction (PFC)

Output side:

Output voltage
Secondary grounding
Short-circuit current
Residual ripple
Output characteristics
Output current

2. Safety

The safety of people and equipment is always the priority. Accordingly, power supplies must comply with unified regulations and standards.

2.1 Galvanic isolation

Galvanic isolation generally refers to the isolation between two conductive objects, such as metal plates or electrical circuits. In the case of electrical circuits it is consequently not possible for charge carriers to flow from one circuit into another, as there is no electrically conductive connection between the two.

In the case of power supplies this means that there is no electrical connection between the input and output sides.

2.2 Insulation

The different kinds of insulation are specified in IEC/EN 60950:

- Functional insulation
  Insulation needed for the correct operation of the equipment.
- Basic insulation
  Insulation to provide basic protection against hazardous structure-borne currents.
- Supplementary insulation
  Protection against hazardous structure-borne currents if the basic insulation fails.
- Double insulation
  Insulation comprising both basic insulation and supplementary insulation.
- Reinforced insulation
  Unified insulation system. Provides equivalent protection to double insulation.

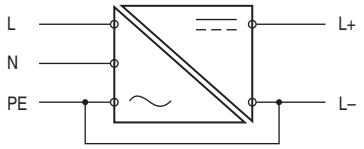
2.3 Safe isolation

Safe isolation according to EN 50178 is required for all interfaces between different electrical circuits, such as between a SELV circuit and a mains circuit.

Safe isolation means that no current flow can occur from one electrical circuit to another. This isolation has to be implemented either by double or reinforced insulation or by means of protective shielding.

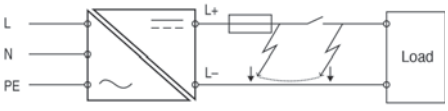
2.4 Secondary grounding

In case of secondary grounding, the output side of the power supply is connected to protective earth (PE) in order to prevent dangerous ground faults.



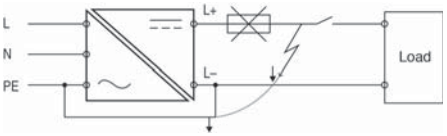
Secondary grounding

A ground fault occurs if a current-carrying line has contact to earth. In the worst case, two simultaneous ground faults can lead to a bridging of switches and thus can start equipment accidentally.



Ground fault

If secondary grounding is used, the occurrence of such a ground fault leads to a so-called short circuit to earth which causes the fuses in the secondary circuit to trip.



2.5 SELV

SELV according to IEC/EN 60950 is a safety extra low voltage which thanks to its low level and insulation offers better protection against electric shock than higher-tension circuits.

Power supplies generating SELV, for example, must be designed to prevent shorting between the primary and secondary windings and their connections. The windings can only be overlaid if double or reinforced insulation is placed between them. This isolation is termed galvanic isolation. Grounding of the secondary side is not required but permitted.

The peak value must not exceed 42.4 V in case of AC voltages and 60 V in case of DC voltages.

2.6 PELV

PELV according to IEC/EN 60950 is a protective extra low voltage with safe isolation. In case of PELV, the electrical circuits are grounded and (like SELV) safely isolated from circuits of higher voltages. The voltage limits are identical to SELV.

PELV is used where active low-voltage conductors or the equipment structures have to be grounded for operational reasons. That is the case, for example, where potential equalisation is required to prevent sparking inside vessels and explosive rooms.

Thanks to the housing earth, hazardous leakage currents can be discharged via the structure independently of the low voltage when interference occurs on other equipment whose touchable conductive parts receive mains voltage.

2.7 Protection class

The standard IEC/EN 61140 defines protection classes for electrical equipment. The devices are classified according to the safety measures taken to prevent electric shock. The protection classes are divided into the classes 0, I, II and III.

• Protection class 0

Apart from the basic insulation there is no protection against electric shock. These devices cannot be connected to electrical installations with PE. Equipment of class 0 is not allowed in Germany. Protection class 0 will no longer be considered in future versions of the standard.

• Protection class I 

In addition to the basic insulation, all electrically conductive parts of the housing are connected to PE. This guarantees that no electric shock can occur in the event of an insulation failure.

• Protection class II 

Protection against electric shock is not only based on the basic insulation. The housing is equipped with reinforced or double insulation. If the housing is made of electrically conductive material, no direct contact between the housing and current-carrying parts is possible. The housings of class II devices are not equipped with a PE connection. It is important to note that the PE connection is not only used for the grounding of housings but also to connect filters for EMC measures (electromagnetic compatibility) to ground. This is why even devices of which the housings are completely made of plastic material can be equipped with a PE connection.

• Protection class III 

The device is operated with safety extra-low voltage (SELV) and thus does not require any protection measures. Power supplies are usually class I or II equipment.

2.8 Degree of protection

According to DIN EN 60529, electrical equipment is classified using so-called IP codes. IP stands for "International Protection" or "Ingress Protection". The IP code consists of two figures: The first digit specifies the protection against accidental contact and against ingress of solid foreign bodies; the second digit specifies the protection against ingress of water.

Since power supplies are mostly installed inside cabinets, their typical degree of protection is IP 20.

3 Input voltage ranges

3.1 Wide-range input

Wide-range input means that the device can be operated with any voltage within the specified limits. Lütze devices operate in the single-phase range from AC 90V to AC 264V or DC 110V to DC 370V and in the three-phase range from AC 340V to AC 576V or DC 480V to DC 820V. There is no loss of power, i.e. the device is able to deliver the specified rated power over the entire input voltage range.

3.2 Autorange

Power supplies that are equipped with autorange behaviour perform an internal measurement of the applied supply voltage and automatically switch between the available input voltage ranges.

3.3 Manual range selection

In case of manual range selection, the housing of the device is equipped with a selector switch for manual input voltage range selection. Lütze offers devices permitting operation at AC 115V or 230V.
The operating voltage range is then AC 90 V to AC 132 V; AC 185 V to AC 264 V or DC 300 V to DC 370 V.

4 Self-protection

If motors or other large loads have to be started with high inrush currents, secondary branches selectively switched off, systems moved to a safe state in case of overload or the power supply switched off as quickly as possible in case of fault for the sake of process safety, the output behaviour of the power supplies play a key role.

There are basically two types outside of nominal operation. Overload, which can occur sporadically or continuously, and short-circuit.

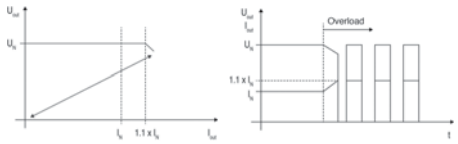
Overload means that the current required by the loads exceeds the nominal current of the power supply.

A short-circuit is a special form of overload. In this case, the outputs of the power supply are interconnected at very low resistance, as a result of which the output current may assume extremely high values.

State-of-the-art Lütze power supplies offer the following protective functions:

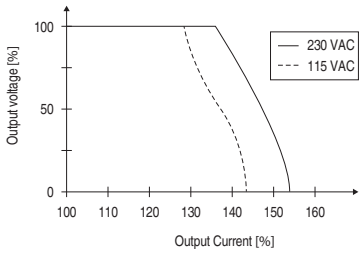
Fold-back characteristic/Hiccup mode

Lütze power supplies supply a current typically up to 1.2 times the nominal output current. They automatically switch off if the current consumption of the connected loads exceeds this value or if a short-circuit occurs. After a defined period of time, the power supply tries to restart the load. If the overload or the short-circuit still exists, it switches off again. This procedure repeats until the fault is cleared. The power supply has "hiccups". In applications requiring high starting currents, it must be ensured that the overload current capacity is higher than 1.2 I_N. To do so, Lütze also offers devices with overload capacity of 1.5 I_N featuring Hiccup mode. Another aspect is response to short-circuit. The output voltage is cut very rapidly. Whereas the use of conventional line protection equipment in the secondary circuit is very critical in any case, the function under Hiccup mode is not. Electronic overload protection units such as the Lütze LOCC-Box should always be used in such cases. They provide safe protection in all circumstances.



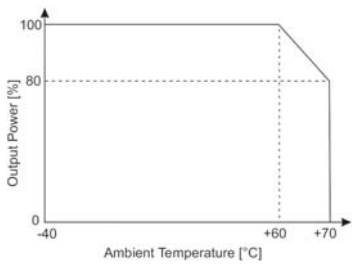
U/I characteristic

Lütze power supplies with a U/I characteristic perform current limiting to typically 1.2 times the nominal current at constant output voltage. This current is still available in case of an overload or a short circuit. The voltage is slowly lowered, while the output current may rise further (triangular current limiting). Since the current does not sag in case of an overload, this method enables reliable starting of high loads.



5 Influence of ambient temperature

The ambient temperature has a direct influence on the maximum possible output power of a power supply and so on its response to short-circuit or overload. Temperatures inside cabinets may be over 60 °C as a result of internal or external influences. Power supplies still have to operate reliably even at such high temperatures. Due to the components used, however, there is a point as from which the output power has to be reduced. That point is described by so-called derating. If, for example, a mains adapter is designed for ambient temperatures of up to 70 °C and a derating of 60 °C, this means a reduction in the output of up to 20 % at an operating temperature in excess of 60 °C. i.e. a reduction in the output by 2.0 % per 1 °C through 60 °C (and/or approx. -5 W per 1 °C).



Example: Derating curve mains adapter

6 Thermal protection

When operating a power supply under extreme conditions for a long duration, e.g. in case of permanent operation within the power limits or in case of very high ambient temperatures, the power supply can heat up to a degree where safe operation is no longer guaranteed. There are a number of techniques for protecting the power supply against destruction due to overheating.

- The maximum output power is reduced, allowing the power supply to cool down.
- The device is switched off completely and cannot resume operation until a manual reset is performed. Depending on the manufacturer, the reset is done either using a corresponding switch or by disconnecting the supply voltage.
- The device only switches off the output and does not switch it on until the temperature falls below a certain limit value. This is the most frequently used method nowadays, and is the one used by LÜTZE.

7 General parameters

7.1 Open circuit resistance

Open circuit resistant power supplies require no minimum load in order to provide a stable output voltage. This is important, for example, in the case of time-critical applications in which a load is applied which has to be immediately supplied with voltage. Power supplies which are not open circuit resistant often require up to the seconds range until an actual supply takes place.

7.2 Resistance to reverse feed

The resistance to reverse feed specifies up to which voltage a power supply is immune against the feeding of voltages into the secondary side. Such a current flow can occur if power supplies are operated in parallel or inductive consumers are connected.

7.3 Overvoltage protection (secondary side)

In case of an internal error of the power supply, this protection mechanism prevents the occurrence of overvoltage on the secondary side that could possibly damage or even destroy a connected load or exceed the SELV voltage limit.

7.4 Power failure buffering

Power supplies must be able to maintain their output voltage for a certain time in case of supply voltage dips. Usually, a power failure buffering time of at least 20 ms is aspired in order to provide buffering for one complete cycle of the mains voltage. In the semiconductor industry longer time are required. The devices must then comply with the requirements of SEM F47. Most LÜTZE devices do so.

8 Line cross-section and protection

8.1 Input-side protection

If power supplies have their own input protection, such as a safety fuse, no further protective measures are necessary. However, standards stipulate that a power supply must be capable of being disconnected from the supply mains by external means. Line protection equipment can then be used. For the relevant characteristics refer to the LÜTZE data sheets.

8.2 Output-side protection

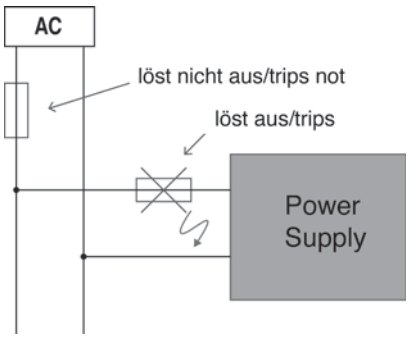
Alongside the output behaviour described in section 4, there is a U/I characteristic with an additional power reserve. However, all these output behaviour modes are ultimately not suitable for safe activation of standard line protection equipment. The reason lies in the technical design of the equipment. Only electronic protection devices capable of reacting fast enough to overload or short-circuit offer a solution. These devices also feature a high degree of repeat accuracy across the entire temperature range. With the LOCCBox LÜTZE offers intelligent DC protection modules which can also be integrated into field bus communications systems. (See also Electronic overload protection, page).

8.3 Selectivity

Selectivity means the tripping coordination. In electrical systems, distinction can be made between "series selectivity", which means that individual fuses connected in series are selective against each other, and "parallel selectivity", which means that electrical circuits connected in parallel are selective against each other.

Series selectivity

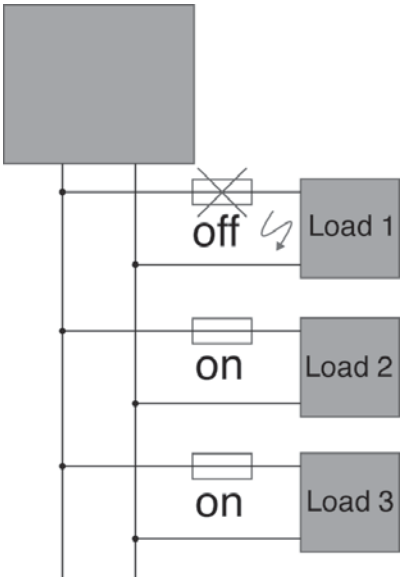
In case of series-connected fuses, the tripping coordination of fuses is considered as selective if only the fuse installed nearest to the fault trips. Fuses that are located nearer to the energy feeding point do not trip. This guarantees that as many system parts as possible remain operative in the event of one single fault, resulting in an increased availability of electrical systems.



Rule of thumb:
The fuses must differ by two nominal quantities

Parallel selectivity

Based on the self-protection, the output voltage is switched off or reduced in the event of a fault. If multiple loads are carried on one power supply, a voltage drop will occur throughout the entire application. To prevent this, protective devices are installed in the individual lines to the consumers. If a fault occurs, the protective device concerned must trip fast enough so as to disconnect the faulty consumer reliably from the rest of the system and such that the other consumers remain available.



8.4 Connection cross-sections

The line cross-sections are selected dependent on the maximum output current. The following table provides an overview of the current capacities of multi-core moveable copper cables with different conductor cross-sections at a temperature of 30 °C and up to a nominal voltage of 1000 V (to DIN 57100-523).

Cross-section in mm^2	A
0.75	12
1	15
1.5	18
2.5	26
4	34
6	44
10	61

9 PFC (Power Factor Correction)

Since 1 January 2001, the European standard regarding the limits for harmonic current emissions (IEC/EN 61000-3-2) is in force. This standard defines the maximum allowed intensity of harmonic currents fed back into the supplying mains system. It is applicable for consuming devices with an active power input between 75 and 100 W that are directly connected to the public electricity supply. Power supplies for industrial applications often do not require PFC, since large installations are equipped with a central PFC, installed between the internal electrical system and the public electricity supply.

9.1 Passive PFC

For passive PFC, a reactance coil is connected to the input circuit. This reactance coil buffers energy from the mains and thus reduces the current pulses. The lower the pulses, the less harmonics are produced. The advantage of this solution is its easy implementation into existing circuitry. However, the drawback is that it is not able to reduce all harmonics.

9.2 Active PFC

Active PFC is able to deliver considerably better results. In a very simplified consideration, one could say that the actual power supply is preceded by another power supply that performs a regulation of the current consumption from the mains. This consumption is oriented towards the sinusoidal supply voltage. Using this technology, it is possible to avoid the production of almost every kind of harmonics. However, the circuitry is much more complex than for passive PFC. LÜTZE power supplies are all equipped with active PFC.

10 Applications

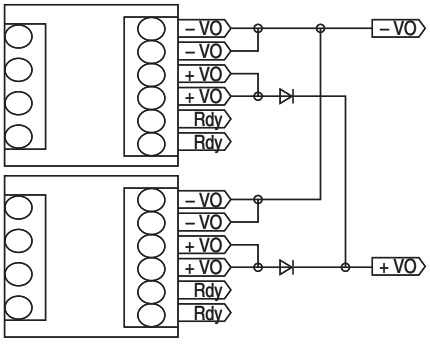
10.1 Parallel connection of power supplies for increased capacity Operation

An increase of the output power can be obtained by connecting power supplies in parallel. This can be necessary if the current required by the load is higher than a single power supply can deliver, for example after the expansion of an existing installation. The following preconditions must be met when connecting power supplies in parallel for the purpose of increased capacity:

- Parallel connection is only allowed for identical power supplies.
- The power supplies have to be switched on simultaneously.
- The following points must be observed when connecting the power supplies in order to prevent different voltage drops on the supply lines or at the terminals which would lead to unbalanced load at the common connection point:
  - Identical lengths of the supply lines
  - Identical conductor cross-sections of the supply lines
  - Terminal screws have to be fastened with the same torque to guarantee equal contact resistances.
- The output voltages of the power supplies should not differ by more than 50 mV in the open circuit state. Otherwise safe operation cannot be guaranteed.

10.2 Redundancy

The term redundancy generally denotes the existence of several objects that are identical in functionality, content or nature.
In industrial automation, redundancy ensures that in the event of failure of a power supply another one takes over the supply, thereby maintaining operation of the system.
For this the individual power supplies must be isolated from each other, as one faulty power supply might impact on the other one. In the worst case the failed power supply effects a secondary-side short-circuit, which would result in failure of the second power supply.
To isolate the power supplies from each other, isolating diodes (so-called O-ring diodes) must be looped into the secondary outputs of the power supplies. They then prevent reciprocal loading. This ensures uninterruptible power supply. In the Compact series the diodes must be installed externally as follows:



LÜTZE offers isolating diodes up to a nominal current of DC20A.

Current Control System · Basics

Reliable protection of DC 24V circuits

Intelligent safeguarding of selectivity

Primary switching controllers and automatic power units nowadays form the basis of the DC 24V supply level. Due to the operating behaviour of those devices, the specified selective protection of individual circuits, especially in case of overcurrent, is virtually unfeasible. A complete system shutdown is inevitable.

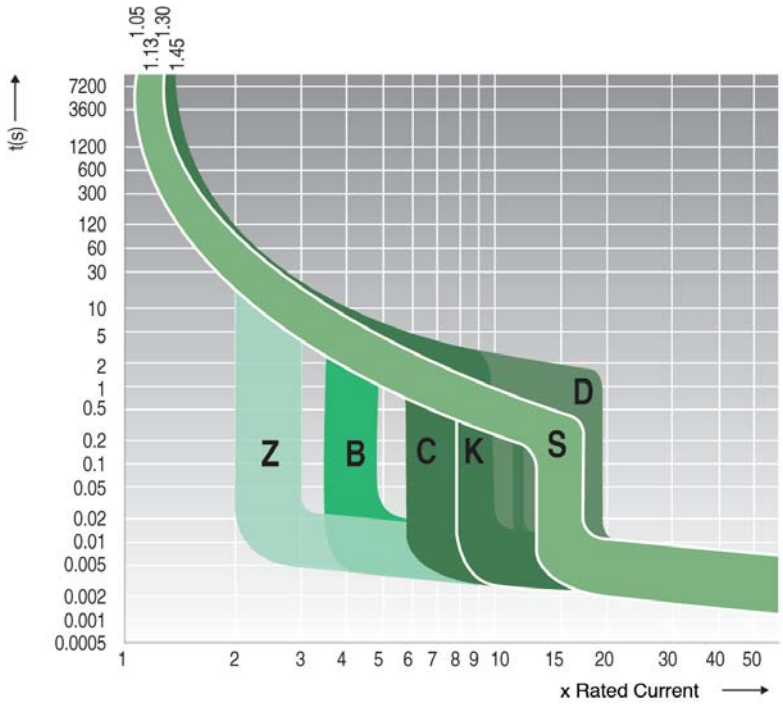
Operating behaviour of primary switching controllers

Switched-mode power supplies and their components are rated for a specific nominal value and run hot under higher load. To protect against self-destructing, they shut down at between 1.1 and 2.5 times the nominal current, according to type. Many devices feature Hiccup mode, which switches off in case of overload and automatically switches back on after a short time. If the overload persists, the process repeats until the fault is manually rectified. This means a fuse is never tripped. Using devices with a forward characteristic does not deliver success either. The power supply does not switch off, but supplies only a 1.1 to 1.2 times higher output current when the output voltage is reduced. This characteristic likewise does not trip an automatic circuit-breaker, or if it does, then only in the hours range. Furthermore, both output modes have the disadvantage that loads such as DC motors or capacitive consumers cannot be started. At additional cost, operation of heavy loads can be achieved in the simplest case by using a device with a higher output power or a device with integrated power boost.

In this, the device with power boost continuously supplies 1.2 to 1.3 times the nominal current in the temperature range up to +45°C. On reducing the output voltage, a maximum of 2.5 times the nominal current is reached which - dependent on the device itself and the characteristic of the automatic circuit-breaker - may be just enough to effect a shutdown.

Characteristics of automatic circuit-breakers

The trip curve of an automatic circuit-breaker with characteristic B (Figure 1) is considered by way of example. To record smaller over-currents, a thermal trip in the minutes to hours range is used (hold >1h at I = 1.13 x I_{nom} and trip <1h at I = 1.45 x I_{nom}). Switch-off in case of high overcurrents is effected by immediate magnetic tripping within 0.01 to 0.1 seconds. If such a device is used in conjunction with a 10A switched-mode power supply, the switch-off occurs at 1.2 times the nominal current only after 20 to 60 minutes. Even at 2.5 times nominal current (power boost) between 25 seconds and two minutes elapse until switch-off in the thermal range. In short: essential protection - in particular selective protection of connected devices - is not provided. The fuse essentially performs a dummy function. In the event of a short-circuit or faulty wire supply would be maintained at 2.5 times nominal current. System failure or even a cable fire may be the consequence.



Selective switch-off

Selective load protection means that in case of overload or short-circuit only the faulty current path is switched off, with no reactive effect on the supply. The standards EN60204-1 (line protection and fire prevention) and EN 61131-1 and -2 (operating states and storage) are also applicable to the rating of the overcurrent protection device in DC 24V circuits. In concrete terms, this means withstanding a mains power failure lasting 10ms without functional impairment, which demands the deployment of large input capacities. Furthermore, hazardous overcurrents must be reduced to a safe level within 5s. Rating is made more difficult by the fact that nowadays many parallel consumers are supplied by way of one protection element.

LÜTZE LOCC-Box – the intelligent current monitoring system

Figure 2: LOCC-Box single module

The ideal solution would be one which is capable of optimally operating capacitive loads to start heavy loads and quickly detecting an overcurrent in operation and switching off only the affected path. Such a system should of course store the fault so as to prevent danger from switching back on and permit diagnosis. The Lütze LOCC-Box system meets those requirements in a modular design with additional intelligent functions. To meet the widely varying demands on switch-off response, the LOCC-Box system features the facility to program 10 different characteristics by way of a switch. Both standard automatic unit characteristics and in particular custom characteristics can be implemented. The nominal current range can additionally be selected with locking settings from 1A to 10A. The adjustable current range and characteristic is very important when retrofitting, as in such cases the device protection often has to be modified and adapted. As additional information, the capacity utilisation of the path is indicated by an LED. When 90% of the programmed current value is reached the status LED starts to flash. In the event of a switch-off due to overcurrent or short-circuit, in addition to the visual indication by a red LED.

Current Control System · Basics

A 24V signal is set as a collective fault warning. This eliminates the need to install and wire additional auxiliary contacts. A restart after clearing the fault is then effected either using the mechanical switch on the device or from the main system by remote control. This channel-based switching facility is of great importance in particular in the commissioning phase of a system, as it enables individual system components to be activated and checked specifically.

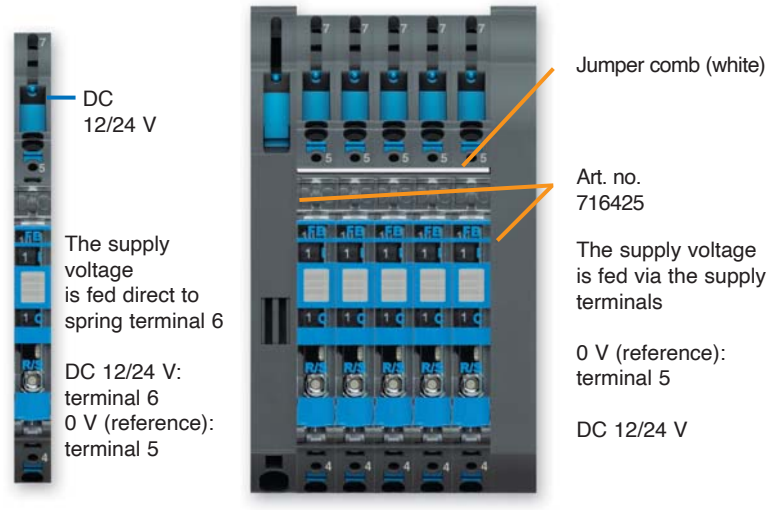
LOCC-Box
Practical and efficient

The monitoring function itself is one side of the coin. The other in many other systems is the associated mechanism. Frequently multi-channel solutions are offered on the market which only make sense if exactly the available channels are required. If that is not the case, or if only one channel has to be additionally implemented subsequently, money and space will be wasted. Another disadvantage of this solution is the looping of up to 40A via a printed circuit board. This entails an enormous load on the carrier material and interruption of the entire supply when a device is replaced. What in other areas of automation has been state of the art for over 10 years is also ideal here as the solution in a highly modular configuration!

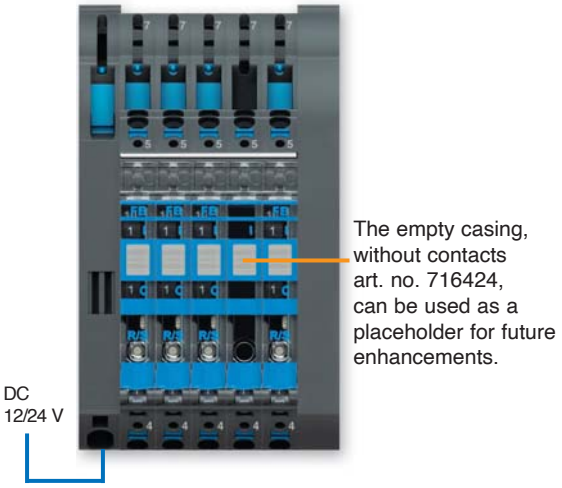
Here, too, the LOCC-Box system is setting new standards. The single-channel design with all the functionality described offers the highest possible flexibility. As shown below, customers can decide whether the supply is provided by each module individually or via the system supply (infeed terminal, copper rail, end terminal). The particular advantage of this method of infeed is the screwless contact carriage, which permits exchanging of individual channels in operation without interrupting the entire supply. This additional provides functionality to switch off individual paths to perform essential work safely. The maximum supply current is dictated by the 6mm² terminal, and is DC 40A. The slim width of just 8.1mm results in an installed width of just 340mm even with a 40-channel configuration. The system housing is complemented by name plate labels, seals and a jumper system to loop signals.

Standard Application

without supply set, art. no. 716425 with supply set, art. no. 716425



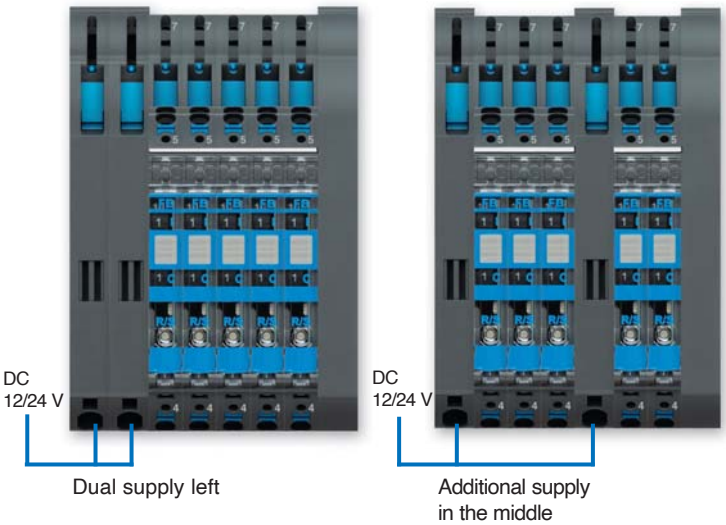
Empty housing as placeholder



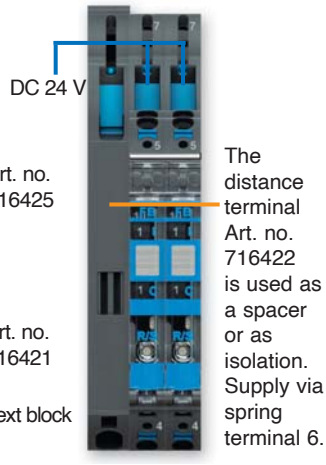
Use with additional supply terminals

Supply set, art. no. 716425 and supply terminal, art. no. 716421

The supply terminal is accessed via an aperture in the left hand side wall. This enables a variable positioning in the system construction. The maximum total current can thus be increased. Max. 160 A / 4 feeds.



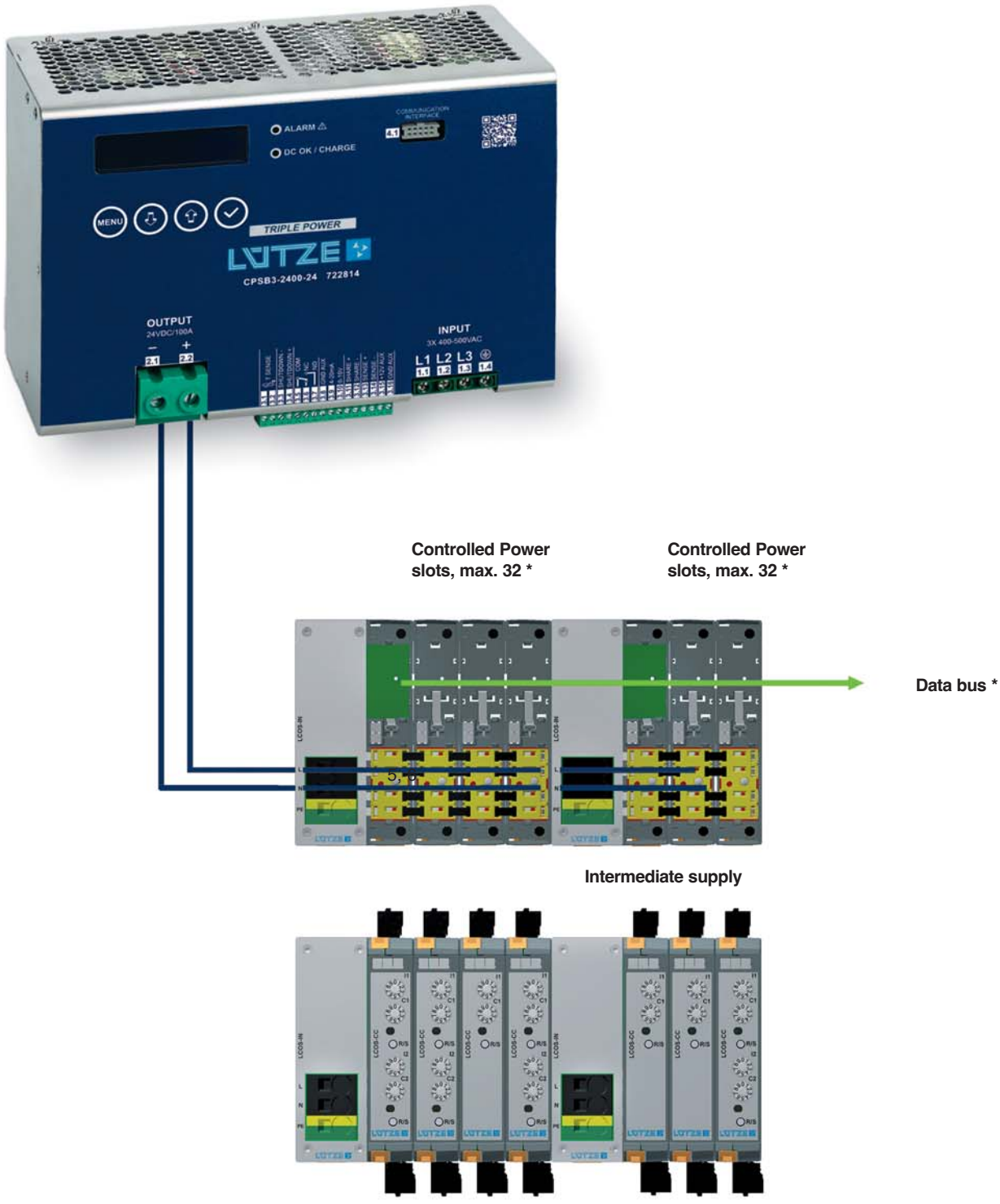
Individual construction with distance terminal



LCOS-CC · Application examples

e.g. Switching power supply 722814

DC 24 V, 100 A.



*Option with fieldbus – Design on request.

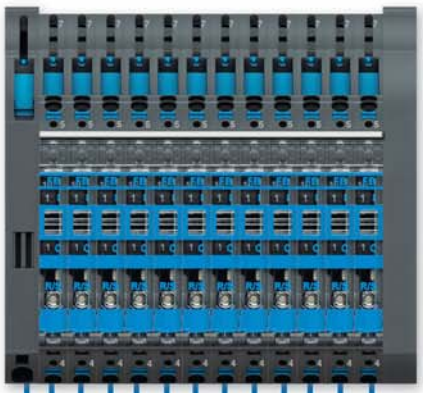
LOCC-Box / LOCC-Box-Net • Application examples

e.g. Switching power supply: 722814 DC 24 V, 40 V

DC 24 V, 100 A.

Standard Application

with supply set, art. no. 716425



-

+

PIN-Nr. 1 1 1 1 1 1 1 1 1 1 1 1

PIN-Nr. 5, 6

5, 6

Load

Consumer

Construction of the 0 V Collective terminal

with supply set
Art. no. 716425

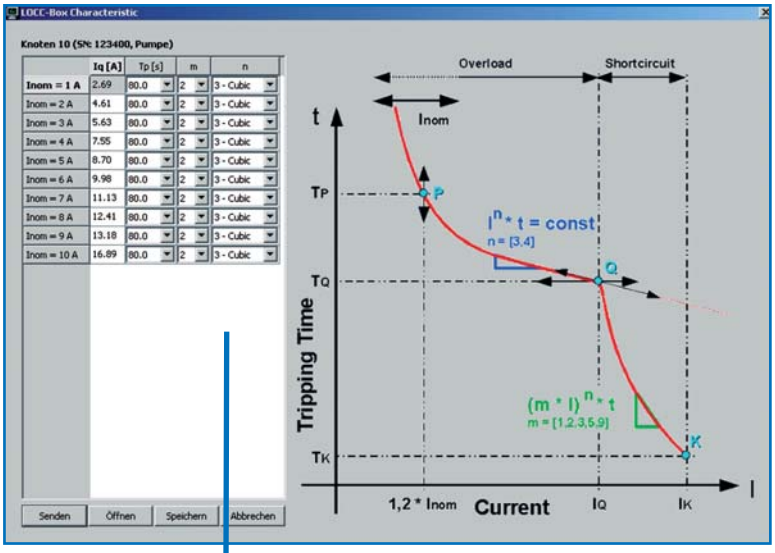
1-4

1-4

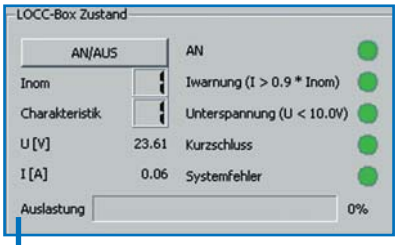
LOCC-Pads · Monitoring software

LOCC-Pads*

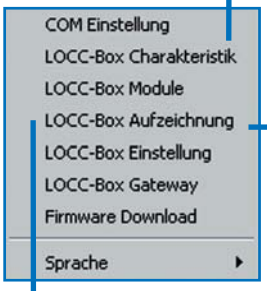
Software for the parameterisation of the LOCC-Box-Net, as well as the analysis and diagnosis of DC 12 / 24 V circuits



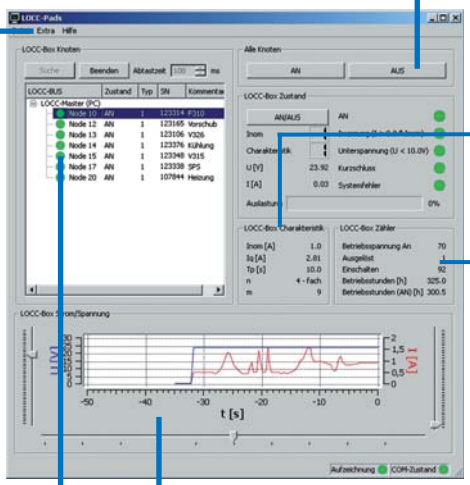
Adjustment parameters for the parameterisable characteristic No. 10



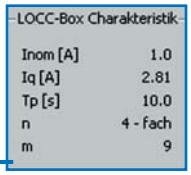
Displays the operating status, current range / characteristic, the load capacity of the characteristic, as well as the updated current and voltage values.



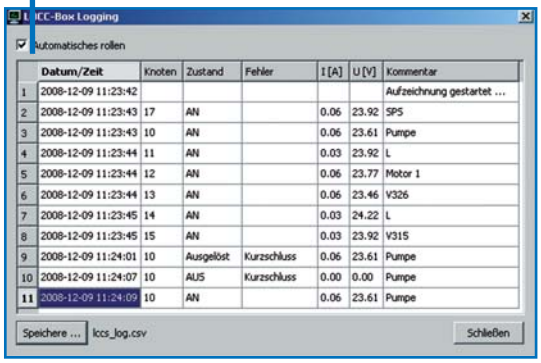
Menu "Extra"



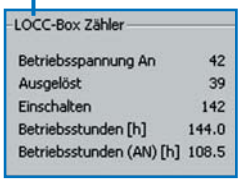
Overall view



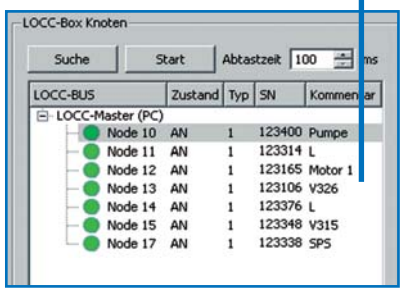
Displays the parameters of the selected characteristic curve.



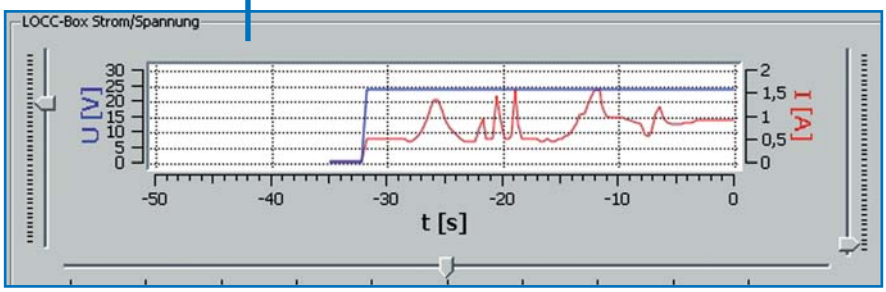
Recording of all results such as "ON", "OFF" or "SHORT CIRCUIT" with date and time



Indicates the current meter readings of the selected module



Overview of all connected modules



Plotter function for the selected module – current/voltage progression (analysis)

* in connection with a gateway (CANopen,EtherCAT, Profinet-IO, Profibus-DP)

Lots of new application fields and unique technical features:

LCOS-PS Ultracompact switching power supply units

LCOS-PS120 Ultracompact 120W DIN Rail switching power supply units
This switching power supply unit line not only allows standard mounting, but also direct use in the modular LÜTZE housing system LCOS. This range opens up lots of new possibilities that are also complemented with unique technical features:

Extremely compact: 35 x 100 x 110 mm

Very high efficiency: > 93 %

Improved overvoltage protection

Simple parallel operation via downslope characteristic curve

Power unit output can be switched via a remote channel

Fault alarm output

Power boost 150 %

Energy bus (optional)

Active PFC

-25 °C to +50 °C without derating: maximum temperature 70° C

Optional:
- Analogue output 0-10 V or 4-20 mA equivalent around output current
- Internal data bus for operation within the modular LCOS system
- Sense connection for automatic voltage regulation

Uniform housing structure in the range from 30 W to 120 W

Spring-connection technology, pluggable

Push-in connection, pluggable

Applications: always whenever high availability is imperative:
Machine and plant construction, process and system engineering, telecommunications, renewable energies

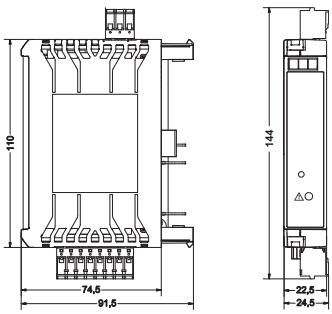
Power supply · LCOS-PS, 30 Watt

Primary switchmode power supply, PFC, Single-phase
Input: Wide range input AC 100 V – 240 V
Output: 24 V, adjustable

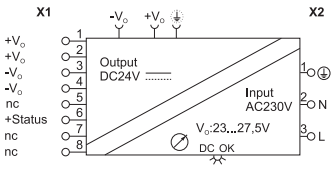
Input	
Number of phases	1
Rated voltage U_N	AC 100–240 V
Rated frequency f_N	50 Hz / 60 Hz
Rated current I_N	0.35 A @ AC 230 V
Inrush current	<10 A @ AC 230 V
Internal fuse	2 A Typ-T AC 250 V
External protection	6 A Typ-B (IEC 60947-2 / UL 1077)
Power factor correction P.F.C.	0.59
Output	
Rated voltage U_N	24 V (SELV)
Rated current I_N	1.25 A
Max. output current	1.4 A
Short-circuit current	
Setting range $U_{out\ min.}/U_{out\ max.}$	DC 23–27.5 V
Load regulation	<0.5 %
Line regulation	<0.5 %
Ripple and noise	≤100 mV pp
Hold up time	>20 ms
Parallel / redundant mode	Max. 2 devices
Efficiency	89 %
Over voltage protection	<32 V
Short circuit	Hiccup
Protection device	Over voltage protection
Status indication	
Status display output	DC ON, green ≥21.6 V
Monitoring	
Switching voltage	DC 30 V
Switching current	Max. 0.100 A
Monitoring	DC ON, open collector
General	
Insulation voltage input / output	AC 2.5 kV_{eff}
Insulation voltage input / ground	AC 1.5 kV_{eff}
Insulation voltage output / ground	DC 0.5 kV_{eff}
Operation temperature range	-25 °C … +70 °C (for UL applications: ambient temperature max. +55 °C)
Derating	>50 °C: -1 W/°C
Storage temperature range	-25 °C … +85 °C
MTBF	>500000 h: SN29500 / >150000 h: MIL HDBK 217F
Relative air humidity	10 % – 95 %, without condensation
Dimensions (w × h × d)	22.5 mm × 100.0 mm × 110.0 mm
Cooling	Air convection
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Color of the housing	pebble grey
Mounting	DIN rail mountable TS35 (EN 60715)
Max. altitude operation	2000 m max.
Installation position	Vertical
Degree of protection	IP20 (EN 60529)
Over voltage category	II (IEC 664-1)
Degree of pollution	2
Connection type	Push-In 0.08 mm² – 2.5 mm² AWG 28 – AWG 12 input: 3-pin output: 8-pole
Certifications	cULus (E249179)
Not included in the delivery	Function carrier and other accessories

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
779101.0213	LCOS-PS-1-30-24	DC 24 V/1.25 A	0.18	1

Dimensions



PIN assignment



Further product information at
www.luetze.com

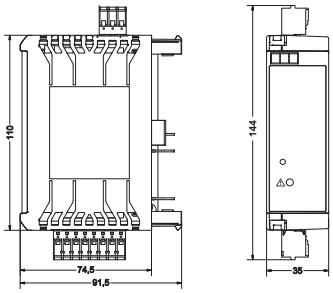
Power supply · LCOS-PS, 60 Watt

Primary switchmode power supply, PFC, Single-phase
Input: Wide range input AC 100 V – 240 V
Output: 24 V, adjustable

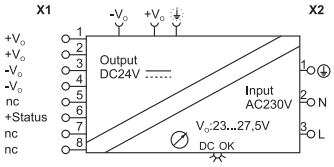
Input	
Number of phases	1
Rated voltage U_N	AC 100–240 V
Rated frequency f_N	50 Hz / 60 Hz
Rated current I_N	0.60 A @ AC 230 V
Inrush current	<10 A @ AC 230 V
Internal fuse	4 A Typ-T AC 250 V
External protection	6 A Typ-B (IEC 60947-2)
Power factor correction P.F.C.	0.6
Output	
Rated voltage U_N	24 V (SELV)
Rated current I_N	2.5 A
Max. output current	2.8 A
Short-circuit current	
Setting range $U_{out\ min.}/U_{out\ max.}$	DC 23–27.5 V
Load regulation	<0.5 %
Line regulation	<0.5 %
Ripple and noise	≤100 mV pp
Hold up time	>20 ms
Parallel / redundant mode	Max. 2 devices
Efficiency	90 %
Over voltage protection	<32 V
Short circuit	Hiccup
Protection device	Over voltage protection
Status indication	
Status display output	DC ON, green ≥21.6 V
Monitoring	
Switching voltage	DC 30 V
Switching current	Max. 0.100 A
Monitoring	DC ON, open collector
General	
Insulation voltage input / output	AC 2.5 kV_{eff}
Insulation voltage input / ground	AC 1.5 kV_{eff}
Insulation voltage output / ground	DC 0.5 kV_{eff}
Operation temperature range	-25 °C … +70 °C
Derating	>50 °C: -2 W/°C
Storage temperature range	-25 °C … +85 °C
MTBF	>500000 h: SN29500 / >150000 h: MIL HDBK 217F
Relative air humidity	10 % – 95 %, without condensation
Dimensions (w × h × d)	35.0 mm × 100.0 mm × 110.0 mm
Cooling	Air convection
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Color of the housing	pebble grey
Mounting	DIN rail mountable TS35 (EN 60715)
Max. altitude operation	2000 m max.
Installation position	Vertical
Degree of protection	IP20 (EN 60529)
Over voltage category	II (IEC 664-1)
Degree of pollution	2
Connection type	Push-In 0.08 mm² – 2.5 mm² AWG 28 – AWG 12 input: 3-pin output: 8-pole
Not included in the delivery	Function carrier and other accessories

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
779101.0313	LCOS-PS-1-60-24	DC 24 V/2.5 A	0.25	1

Dimensions



PIN assignment



Power supply · LCOS-PS, 120 Watt

Primary switchmode power supply, PFC, Single-phase
Input: Wide range input AC 100 V – 240 V
Output: 24 V, adjustable

Input

Number of phases	1
Rated voltage U_N	AC 100–240 V
Rated frequency f_N	50 Hz / 60 Hz
Rated current I_N	0.70 A @ AC 230 V
Inrush current	<20 A @ AC 230 V
Internal fuse	4 A Typ-T AC 250 V
External protection	6 A Typ-B (IEC 60947-2)
Power factor correction P.F.C.	>0.96

Output

Rated voltage U_N	24 V (SELV)
Rated current I_N	5 A
Max. output current	>7.5 A, 5 s @ U_{out} > 90 %
Short-circuit current	
Setting range $U_{out\ min.}/U_{out\ max.}$	DC 23–27.5 V
Load regulation	downslope -2 % @ 5 A
Line regulation	0.5 %
Rise time	< 1 s
Ripple and noise	≤100 mV pp
Hold up time	>20 ms
Status indication DC ON LED green	≥21.6 V
Status indication DC LOW LED red	I_{out} >110 % I_N
Parallel / redundant mode	Max. 4 devices / redundancy via decoupling diode
Efficiency	>93 %
Rated over load protection	Yes
Over voltage protection	35 V
Short circuit	Current limit (overload), Hiccup (short-circuit)
Protection device	Over voltage protection
Power Dissipation (nominal operations) max.	9 W @ 230 V

Status indication

Status display output	DC ON, green ≥21.6 V I_{out} > 110 % I_N

Remote input

control voltage	DC 24 V
Control current	DC 5 mA
ON/OFF	11 V – 30 V: OFF, DC 5 V: ON

Monitoring

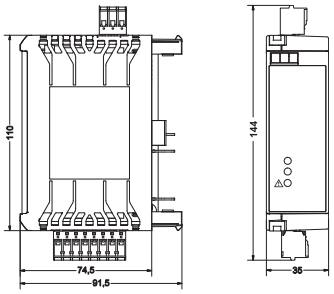
DC ON Control (Rdy)	Open Collector
Switching voltage	DC 30 V
Switching current	Max. 0.100 A
Monitoring	DC ON, open collector

General

Insulation voltage input / output	AC 3.0 kV_{eff}
Insulation voltage input / ground	AC 1.5 kV_{eff}
Insulation voltage output / ground	DC 0.5 kV_{eff}
Operation temperature range	-25 °C … +70 °C (for UL applications: ambient temperature max. +55 °C)
Derating	>50 °C: -4 W/°C
Storage temperature range	-25 °C … +85 °C
MTBF	>500000 h: SN29500 / >150000 h: MIL HDBK 217F
Relative air humidity	10 % – 95 %, without condensation
Dimensions (w × h × d)	35.0 mm × 100.0 mm × 110.0 mm
Cooling	Air convection
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Color of the housing	pebble grey
Mounting	DIN rail mountable TS35 (EN 60715)
Max. altitude operation	2000 m max.
Installation position	Vertical
Degree of protection	IP20 (EN 60529)
Over voltage category	II (IEC 664-1)
Degree of pollution	2
Connection type	Push-In 0.08 mm² – 2.5 mm² AWG 28 – AWG 12 input: 3-pin output: 8-pole
Not included in the delivery	Function carrier and other accessories

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
779101.0413	LCOS-PS-1-120-24	DC 24 V/5 A	0.35	1

Dimensions



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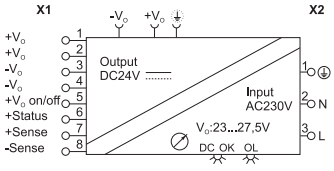

Further product information at
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COMPACT Power Supplies

COMPACT Series

- One-, two- and three-phase
- 120 W to 2400 W
- Overload current 150 %, 5 sec
- Extremely compact
- Parallel operation
- Overload and short circuit protection
- Redundant operation
- Up to 95 % efficiency
- Protection class 1
- UL

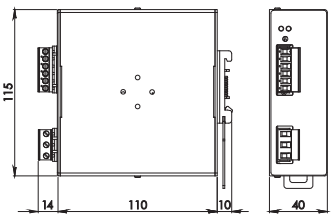
Power supply · Compact Economy, 120 W

Primary switchmode power supply, PFC, Single-phase
Input: wide-range input AC 85–264 V, DC 110–345 V
Output: DC 12 V, 7 A

Input	
Number of phases	1
Rated voltage U_N	AC 120/240 V
Operation voltage range	AC 90–264 V / DC 110–345 V
Frequency range	47 Hz – 63 Hz
Rated current I_N	1.9 A @ AC 120 V / 1.1 A @ AC 240 V
Inrush current	≤30 A / 0.72 A²s
Internal fuse	T3, 15 A/AC 250 V
External protection	Mini-circuit breaker: C 6 A
Power factor correction P.F.C.	>0.6
Output	
Rated voltage U_N	DC 12 V
Rated current I_N	7 A
Max. output current	11–9.5 A, 5 s
Setting range $U_{out\ min.}/U_{out\ max.}$	DC 12–15 V
Load regulation	<2 %
Ripple and noise	≤120 mV pp
Hold up time	>10 ms @ AC 120 V / >60 ms @ AC 230 V
Status indication DC ON LED green	≥10.8 V
Status indication DC LOW LED red	≤10.8 V
Parallel / redundant mode	Yes/via external decoupling diode e.g. 722999
Efficiency	>84 %
Power Dissipation	<20 W
Over voltage protection	≥DC 18 V
Short circuit	Hiccup Mode
Voltage drop	max. 215 mV (5 A)
Overtemperature protection	Yes
Monitoring	
DC ON Control (Rdy)	N/O contact
Switching voltage	AC 300 V / DC 150 V
Switching current	AC/DC 1 A
Switching capacity	300 VA / 30 W
Isolation voltage	AC 500 V
General	
Insulation voltage input / output	DC 4.2 kV
Insulation voltage input / ground	DC 2.2 kV
Insulation voltage output / ground	DC 750 V
Operation temperature range	-40 °C … +70 °C (UL approved up to +60 °C)
Derating	>60 °C: -2.4 W/°C
Storage temperature range	-40 °C … +80 °C
Dimensions (w × h × d)	40.0 mm × 115.0 mm × 134.0 mm
Cooling	Air convection, 50 mm distance top/ bottom, 20 mm side
Housing material	Aluminum
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Vertical
Degree of protection	IP20 (IEC 529 / EN 60529)
Protection class	I
Over voltage category	III
Degree of pollution	2
Connection type	Screw terminal 0.20 mm² – 2.5 mm² plug-in
Certifications	CE UKCA cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
723510	CPSB1-120-12E	DC 12 V/7 A	0.4	1

Dimensions



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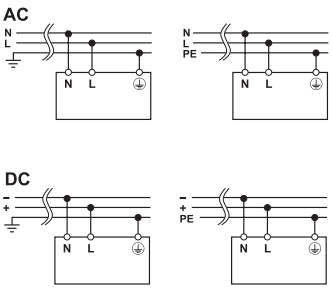


Further product information at
www.luetze.com

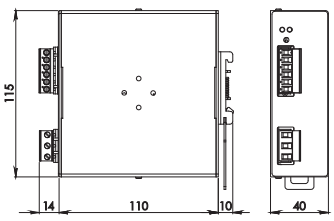
Power supply · Compact Economy, 120 W

Primary switchmode power supply, PFC, Single-phase
Input: wide-range input AC 85–264 V, DC 110–345 V
Output: DC 24 V, 5 A

Input	
Number of phases	1
Rated voltage U_N	AC 120/240 V
Operation voltage range	AC 85–264 V / DC 110–345 V
Frequency range	47 Hz – 63 Hz
Rated current I_N	2.1 A @ AC 120 V / 1.2 A @ AC 240 V
Inrush current	≤30 A / 0.72 A²s
Internal fuse	T3, 15 A/AC 250 V
External protection	Mini-circuit breaker: C 6 A / Fusible link: T 10 A
Power factor correction P.F.C.	>0.6
Output	
Rated voltage U_N	DC 24 V
Rated current I_N	5 A
Max. output current	7 A, 5 s
Setting range $U_{out\ min.}/U_{out\ max.}$	DC 23–28 V
Load regulation	<1 %
Ripple and noise	<60 mV
Hold up time	>20 ms @ AC 120 V / 50 ms @ AC 230 V
Status indication DC ON LED green	≥21.6 V
Status indication DC LOW LED red	≤21.6 V
Parallel / redundant mode	Yes/via external decoupling diode e.g. 722999
Efficiency	>87 %
Power Dissipation	<18 W
Over voltage protection	≥DC 33 V
Short circuit	Hiccup Mode
Overtemperature protection	Yes
Monitoring	
DC ON Control (Rdy)	N/O contact
Switching voltage	AC 300 V / DC 150 V
Switching current	AC/DC 1 A
Switching capacity	300 VA / 30 W
Isolation voltage	AC 500 V
General	
Insulation voltage input / output	DC 4.2 kV
Insulation voltage input / ground	DC 2.2 kV
Insulation voltage output / ground	DC 750 V
Operation temperature range	-40 °C … +70 °C (UL approved up to +60 °C) >60 °C: -2.4 W/°C
Storage temperature range	-40 °C … +80 °C
Relative air humidity	5 – 95 % RH, non-condensing
Dimensions (w × h × d)	40.0 mm × 115.0 mm × 110.0 mm
Cooling	Air convection, 50 mm distance top/ bottom, 20 mm side
Housing material	Aluminum
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Vertical
Degree of protection	IP20 (IEC 529 / EN 60529)
Protection class	I
Over voltage category	III
Degree of pollution	2
Connection type	Screw terminal 0.20 mm² – 2.5 mm² plug-in
Certifications	CE UKCA cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
723500	CPSB1-120-24E	DC 24 V/5 A	0.45	1

Dimensions



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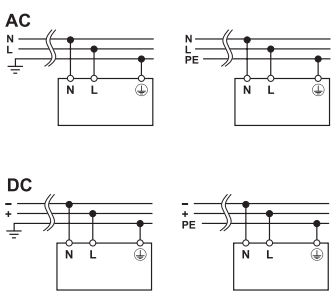


Power supply · Compact Economy, 240 W

Primary switchmode power supply, PFC, Single-phase
Input: AC 90–132 V, AC 187–264 V, DC 270–345 V
Output: 24 V, 15 A

Input

Number of phases	1
Rated voltage U_N	AC 120/240 V (manual)
Operation voltage range	AC 90–132 V / AC 187–264 V / DC 270–345 V
Frequency range	47 Hz – 63 Hz
Rated current I_N	4 A @ AC 120 V / 2 A @ AC 240 V
Inrush current	≤32 A / 1.18 A²s
Internal fuse	T6, 3 A/AC 250 V
External protection	Mini-circuit breaker: C 10 A / Safety fuse: T 10 A
Power factor correction P.F.C.	>0.6

Output

Rated voltage U_N	DC 12 V
Max. output current	DC 19 … 16 A, 30 s
Setting range $U_{out\ min.}$/$U_{out\ max.}$	DC 12–15 V
Load regulation	<1.5 %
Ripple and noise	<150 mV pp
Hold up time	≥60 ms @ AC 120 V / ≥70 ms @ AC 240 V
Status indication DC ON LED green	≥10.8 V
Status indication DC LOW LED red	≤10.8 V
Parallel / redundant mode	Yes/via external decoupling diode e.g. 722999
Efficiency	>84 % … >86 %
Power Dissipation	<36.5 W … <34.5 W
Over voltage protection	≥DC 18 V (U_A=12 V)
Short circuit	Hiccup Mode
Overtemperature protection	Yes

Monitoring

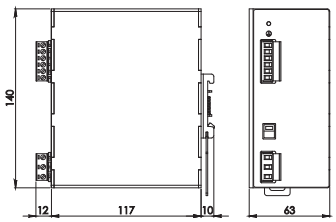
DC ON Control (Rdy)	N/O contact
Switching voltage	AC 300 V / DC 150 V
Switching current	AC/DC 1 A
Switching capacity	300 VA / 30 W
Isolation voltage	AC 500 V

General

Insulation voltage input / output	DC 4.2 kV
Insulation voltage input / ground	DC 2.2 kV
Insulation voltage output / ground	DC 750 V
Operation temperature range	-40 °C … +70 °C (UL approved up to +50 °C)
Derating	>60 °C: -5 W/°C
Storage temperature range	-40 °C … +80 °C
Dimensions (w × h × d)	63.0 mm × 140.0 mm × 139.0 mm
Cooling	Air convection, 50 mm distance top/ bottom, 20 mm side
Housing material	Aluminum
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Vertical
Degree of protection	IP20 (IEC 529 / EN 60529)
Over voltage category	III
Degree of pollution	2
Connection type	Screw terminal 0.20 mm² – 2.5 mm² plug-in
Certifications	CE UKCA cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
723610	CPSB1-240-12E	DC 12 V/10 A	0.75	1

Dimensions



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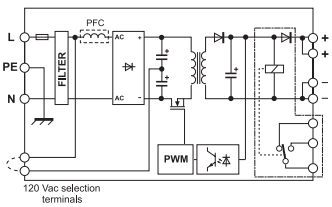


Further product information at www.luetze.com

Power supply · Compact Economy, 240 W

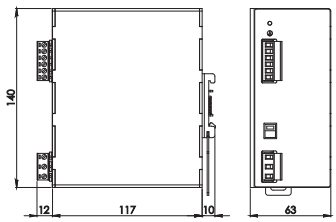
Primary switchmode power supply, PFC, Single-phase
Input: AC 90–132 V, AC 187–264 V, DC 270–345 V
Output: DC 24 V, 10 A

Input	
Number of phases	1
Rated voltage U_N	AC 120/240 V (manual)
Operation voltage range	AC 90–132 V / AC 187–264 V / DC 270–345 V
Frequency range	47 Hz – 63 Hz
Rated current I_N	4 A @ AC 120 V / 2 A @ AC 240 V
Inrush current	<40 A
Internal fuse	T6, 3 A/AC 250 V
External protection	Mini-circuit breaker: C 10 A / Safety fuse: T 10 A
Power factor correction P.F.C.	>0.6
Output	
Rated voltage U_N	DC 24 V
Rated current I_N	10 A
Max. output current	13.5 A, 30 s
Setting range $U_{out\ min.}$/$U_{out\ max.}$	DC 23–27.5 V
Load regulation	<1 %
Ripple and noise	<100 mV pp
Hold up time	>60 ms @ AC 120 V / >70 ms @ AC 240 V
Status indication DC ON LED green	≥21.6 V
Status indication DC LOW LED red	≤21.6 V
Parallel / redundant mode	Yes/via external decoupling diode e.g. 722999
Efficiency	>87 %
Power Dissipation	<35 W
Over voltage protection	>DC 33 V (U_A=24 V)
Short circuit	Hiccup Mode
Overtemperature protection	Yes

Monitoring	
DC ON Control (Rdy)	N/O contact
Switching voltage	AC 300 V / DC 150 V
Switching current	AC/DC 1 A
Switching capacity	300 VA / 30 W
Isolation voltage	AC 500 V
General	
Insulation voltage input / output	DC 4.2 kV
Insulation voltage input / ground	DC 2.2 kV
Insulation voltage output / ground	DC 750 V
Operation temperature range	-40 °C … +70 °C (UL approved up to +50 °C)
Derating	>60 °C: -5 W/°C
Storage temperature range	-40 °C … +80 °C
Dimensions (w × h × d)	63.0 mm × 140.0 mm × 139.0 mm
Cooling	Air convection, 50 mm distance top/ bottom, 20 mm side
Housing material	Aluminum
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Vertical
Degree of protection	IP20 (IEC 529 / EN 60529)
Over voltage category	III
Degree of pollution	2
Connection type	Screw terminal 0.20 mm² – 2.5 mm² plug-in
Certifications	CE UKCA cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
723600	CPSB1-240-24E	DC 24 V/10 A	0.75	1

Dimensions



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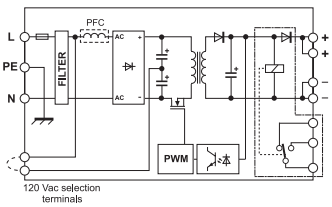


Power supply · Compact Economy, 480 W

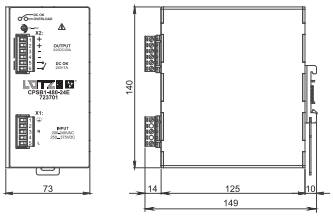
Primary switchmode power supply, PFC, Single-phase
Input: AC 187–264 V, DC 250–375 V
Output: DC 24 V, 20 A

Input	
Number of phases	1
Rated voltage U_N	AC 200–240 V (UL certified)
Operation voltage range	AC 187–264 V / DC 250–375 V
Frequency range	47 Hz – 63 Hz
Rated current I_N	2.9 A @ AC 200 V / 2.5 A @ AC 240 V
Internal fuse	No internal fuse, an external fuse must be provided.
External protection	6,3AT or MCB 6A C-curve or 4A D-curve
Power factor correction P.F.C.	>0,90, enabled
Inrush peak current	≤29 A / 0.61 A²s
Touch current (leakage current)	≤0.5 mA
Output	
Rated voltage U_N	DC 24 V
Rated current I_N	20 A
Max. output current	28 A, 5 s @ Hiccup Mode
Setting range $U_{out\ min.}$/$U_{out\ max.}$	DC 23–28 V
Load regulation	≤1 %
Ripple and noise	≤50 mV pp
Hold up time	≥50 ms @ AC 240 V
Status indication DC ON LED green	≥21.6 V
Status indication DC LOW LED red	≤21.6 V
Parallel / redundant mode	Yes/via external decoupling diode e.g. Part-No. 722999
Efficiency	>91 % @ AC 240 V
Power Dissipation	<48 W
Over voltage protection	≥DC 33 V (U_A=24 V)
Short circuit	Hiccup Mode
Overload limit in constant current mode	50 A
Overtemperature protection	Yes
Monitoring	
DC ON Control (Rdy)	N/O contact

Switching voltage	AC/DC 300 V / DC 150 V
Switching current	AC/DC 1 A
Switching capacity	300 VA / 30 W
Isolation voltage	AC 500 V
General	
Insulation voltage input / output	DC 4.2 kV, 1 min.
Insulation voltage input / ground	DC 2.2 kV, 1 min.
Insulation voltage output / ground	DC 750 V, 1 min.
Operation temperature range	-40 °C … +70 °C
Derating	>45 °C: -10 W/°C @ AC 240 V
Storage temperature range	-40 °C … +80 °C
MTBF	MIL-HDBK-217F, >500000 h at 25 °C ambient full load
Relative air humidity	5 – 95 %, non-condensing
Dimensions (w × h × d)	73.0 mm × 140.0 mm × 149.0 mm
Cooling	Air convection, 100 mm distance top/bottom, 20 mm side
Housing material	Aluminum
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Vertical
Degree of protection	IP20 (IEC 529 / EN 60529)
Protection class	I
Over voltage category	III (EN 50178)
Degree of pollution	2 (IEC 60664-1)
Connection type	Screw terminal
	0,20 mm² – 2,5 mm² / AWG 24–14
Strip length	6.0 - 7.5 mm / 0.24 - 0.30 in
Screwdriver	3,0 × 0,5 mm
Tightening torque	0.5 – 0.6 Nm / 4.42 – 5.30 lbf in
Certifications	CE UKCA cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
723701	CPSB1-480-24E	DC 24 V/20 A	1	1

Dimensions



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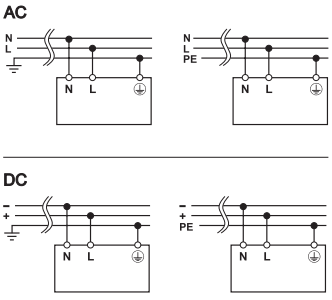


Further product information at
www.luetze.com

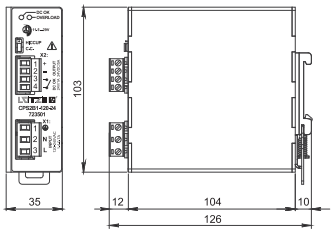
Power supply · Compact Ultra, 120 W

Primary switchmode power supply, PFC
Input: AC 90–264 V, DC 110–345 V
Output: DC 24 V, 5 A

Input	
Number of phases	1
Rated voltage U_N	AC 120/240 V (UL certified)
Operation voltage range	AC 90–264 V / DC 110–345 V
Frequency range	47 Hz – 63 Hz
Rated current I_N	1.4 A @ AC 120 V / 0.7 A @ AC 240 V
Internal fuse	T3, 15 A (non-replaceable)
External protection	Mini-circuit breaker: C 4 A / Fusible link: T 4 A
Power factor correction P.F.C.	>0,90, enabled
Inrush peak current	≤32 A / 0.49 A²s
Output	
Rated voltage U_N	DC 24 V
Rated current I_N	5 A
Max. output current	7.5 A, 5 s @ Hiccup Mode
Setting range $U_{out\ min.}$/$U_{out\ max.}$	DC 11.5–29 V
Load regulation	≤1 %
Ripple and noise	≤60 mV pp
Hold up time	≥20 ms @ AC 120 V / ≥30 ms @ AC 240 V
Status indication DC ON LED green	≥21.6 V
Status indication DC LOW LED red	≤21.6 V
Parallel / redundant mode	Yes/via external decoupling diode e.g. Part-No. 722999
Efficiency	>90 % @ AC 240 V
Power Dissipation	<13.5 W
Over voltage protection	≥DC 33 V (U_A=24 V)
Short circuit	Hiccup Mode / Current limit
Overload limit in constant current mode	7.5 A
Overtemperature protection	Yes
Monitoring	
DC ON Control (Rdy)	N/O contact
Switching voltage	AC/DC 300 V / DC 150 V
Switching current	AC/DC 1 A
Switching capacity	300 VA / 30 W
Isolation voltage	AC 500 V
General	
Insulation voltage input / output	DC 4.2 kV, 1 min.
Insulation voltage input / ground	DC 2.2 kV, 1 min.
Insulation voltage output / ground	DC 750 V, 1 min.
Operation temperature range	-35 °C … +70 °C
Derating	>60 °C: -1.2 W/°C
Storage temperature range	-40 °C … +80 °C
MTBF	MIL-HDBK-217F, >500000 h at 25 °C ambient full load
Relative air humidity	5 – 95 % RH, non-condensing
Dimensions (w × h × d)	35.0 mm × 103.0 mm × 126.0 mm
Cooling	Air convection, 50 mm distance top/ bottom, 20 mm side
Housing material	Aluminum
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Vertical
Degree of protection	IP20 (IEC 529 / EN 60529)
Protection class	I
Over voltage category	III (EN 50178)
Degree of pollution	2 (IEC 60664-1)
Connection type	Screw terminal
	0,20 mm² – 2,5 mm² / AWG 24–14
Strip length	6.0 - 7.5 mm / 0.24 - 0.30 in
Screwdriver	3,0 × 0,5 mm
Tightening torque	0.5 – 0.6 Nm / 4.42 – 5.30 lbf in
Certifications	CE UKCA cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
723501	CPS2B1-120-24	DC 24 V/5 A	0.45	1

Dimensions



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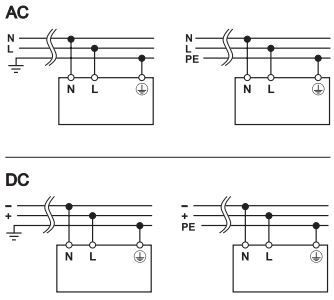


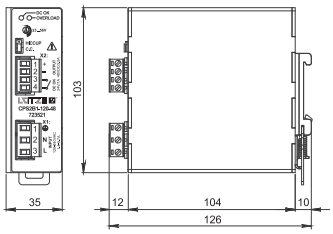
Power supply · Compact Ultra, 120 W

Primary switchmode power supply, PFC
Input: AC 90–264 V, DC 110–345 V
Output: DC 48 V, 2.5 A

Input	
Number of phases	1
Rated voltage U_N	AC 120/240 V (UL certified)
Operation voltage range	AC 90–264 V / DC 110–345 V
Frequency range	47 Hz – 63 Hz
Rated current I_N	1.4 A @ AC 120 V / 0.7 A @ AC 240 V
Internal fuse	T3, 15 A (non-replaceable)
External protection	Mini-circuit breaker: C 4 A / Fusible link: T 4 A
Power factor correction P.F.C.	>0,90, enabled
Inrush peak current	≤32 A / 0.49 A²s
Output	
Rated voltage U_N	DC 48 V
Rated current I_N	2.5 A
Max. output current	3.75 A, 5 s @ Hiccup Mode
Setting range $U_{out\ min.}$/$U_{out\ max.}$	DC 23–56 V
Load regulation	≤0.5 %
Ripple and noise	≤60 mV pp
Hold up time	≥20 ms @ AC 120 V / ≥30 ms @ AC 240 V
Status indication DC ON LED green	≥43.2 V
Status indication DC LOW LED red	≤43.2 V
Status indication DC ON LED red	Redundancy error
Parallel / redundant mode	Yes/via external decoupling diode e.g. Part-No. 722999
Efficiency	>90 % @ AC 240 V
Power Dissipation	<13.5 W
Over voltage protection	≥DC 68 V
Short circuit	Adjustable: Hiccup, C.C. Mode
Overload limit in constant current mode	3.75 A
Overtemperature protection	Yes
Monitoring	
DC ON Control (Rdy)	N/O contact
Switching voltage	AC/DC 300 V / DC 150 V
Switching current	AC/DC 1 A
Switching capacity	300 VA / 30 W
Isolation voltage	AC 500 V
General	
Insulation voltage input / output	DC 4.2 kV, 1 min.
Insulation voltage input / ground	DC 2.2 kV, 1 min.
Insulation voltage output / ground	DC 750 V, 1 min.
Operation temperature range	-35 °C … +70 °C
Derating	>60 °C: -1.2 W/°C
Storage temperature range	-40 °C … +80 °C
MTBF	MIL-HDBK-217F, >500000 h at 25 °C ambient full load
Relative air humidity	5 – 95 % RH, non-condensing
Dimensions (w × h × d)	35.0 mm × 103.0 mm × 126.0 mm
Cooling	Air convection, 50 mm distance top/ bottom, 20 mm side
Housing material	Aluminum
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Vertical
Degree of protection	IP20 (IEC 529 / EN 60529)
Protection class	I
Over voltage category	III (EN 50178)
Degree of pollution	2 (IEC 60664-1)
Connection type	Screw terminal
	0,20 mm² – 2,5 mm² / AWG 24–14
Strip length	6.0 - 7.5 mm / 0.24 - 0.30 in
Screwdriver	3,0 × 0,5 mm
Tightening torque	0.5 – 0.6 Nm / 4.42 – 5.30 lbf in
Certifications	CE UKCA cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
723521	CPS2B1-120-48	DC 48 V/2.5 A	0.45	1

Dimensions



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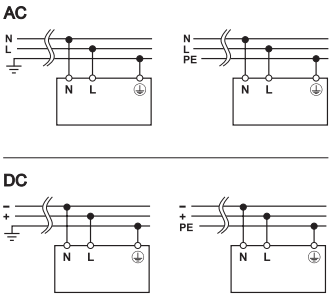


Further product information at
www.luetze.com

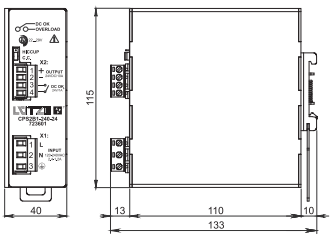
Power supply · Compact Ultra, 240 W

Primary switchmode power supply, PFC
Input: AC 90–264 V, DC 110–345 V
Output: DC 24 V, 10 A

Input	
Number of phases	1
Rated voltage U_N	AC 120/240 V (UL certified)
Operation voltage range	AC 90–264 V / DC 110–345 V
Frequency range	47 Hz – 63 Hz
Rated current I_N	2.4 A @ AC 120 V / 1.2 A @ AC 240 V
Internal fuse	T6, 3 A (non-replaceable)
External protection	Mini-circuit breaker: C 10 A / Safety fuse: T 10 A
Power factor correction P.F.C.	>0,90, enabled
Inrush peak current	≤34 A / 0.66 A²s
Output	
Rated voltage U_N	DC 24 V
Rated current I_N	10 A
Max. output current	15 A, 5 s @ Hiccup Mode
Setting range $U_{out\ min.}/U_{out\ max.}$	DC 22–29 V
Load regulation	≤1 %
Ripple and noise	≤260 mV pp
Hold up time	≥20 ms @ AC 240 V
Status indication DC ON LED green	≥21.6 V
Status indication DC LOW LED red	≤21.6 V
Parallel / redundant mode	Yes/via external decoupling diode e.g. Part-No. 722999
Efficiency	>93 % @ AC 240 V
Power Dissipation	<19 W
Over voltage protection	≥DC 33 V
Short circuit	Hiccup Mode, Constant current (C.C.)
Overload limit in constant current mode	11 A
Overtemperature protection	Yes
Monitoring	
DC ON Control (Rdy)	N/O contact
Switching voltage	AC/DC 300 V / DC 150 V
Switching current	AC/DC 1 A
Switching capacity	300 VA / 30 W
Isolation voltage	AC 500 V
General	
Insulation voltage input / output	DC 4.2 kV, 1 min.
Insulation voltage input / ground	DC 2.2 kV, 1 min.
Insulation voltage output / ground	DC 750 V, 1 min.
Operation temperature range	-40 °C … +70 °C
Derating	no derating
Storage temperature range	-40 °C … +80 °C
MTBF	MIL-HDBK-217F, >600000 h at 25 °C ambient full load
Relative air humidity	5 – 95 %, non-condensing
Dimensions (w × h × d)	40.0 mm × 115.0 mm × 133.0 mm
Cooling	Air convection, 100 mm distance top/bottom, 20 mm side
Housing material	Aluminum
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Vertical
Degree of protection	IP20 (IEC 529 / EN 60529)
Protection class	I
Over voltage category	III (EN 50178)
Degree of pollution	2 (IEC 60664-1)
Connection type	Screw terminal 0,20 mm² – 2,5 mm² / AWG 24–14
Strip length	6.0 - 7.5 mm / 0.24 - 0.30 in
Screwdriver	3,0 × 0,5 mm
Tightening torque	0.5 – 0.6 Nm / 4.42 – 5.30 lbf in
Certifications	CE UKCA cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
723601	CPS2B1-240-24	DC 24 V/10 A	0.75	1

Dimensions



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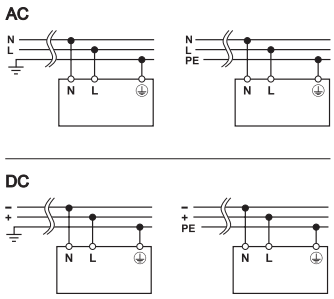


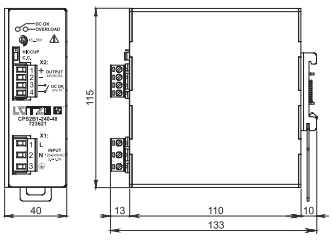
Power supply · Compact Ultra, 240 W

Primary switchmode power supply, PFC
Input: AC 90–264 V, DC 110–345 V
Output: DC 48 V, 5 A

Input	
Number of phases	1
Rated voltage U_N	AC 120/240 V (UL certified)
Operation voltage range	AC 90–264 V / DC 110–345 V
Frequency range	47 Hz – 63 Hz
Rated current I_N	2.4 A @ AC 120 V / 1.2 A @ AC 240 V
Internal fuse	T6, 3 A (non-replaceable)
External protection	10AT or MCB 10A C-curve
Power factor correction P.F.C.	>0,90, enabled
Inrush peak current	≤34 A / 0.66 A²s
Touch current (leakage current)	≤0.6 mA
Output	
Rated voltage U_N	DC 48 V
Rated current I_N	5 A
Max. output current	8.5 A, 5 s @ Hiccup Mode
Setting range $U_{out\ min.}$/$U_{out\ max.}$	DC 45–55 V
Load regulation	≤1 %
Ripple and noise	≤400 mV pp
Hold up time	≥20 ms @ AC 240 V
Status indication DC ON LED green	≥43.2 V
Status indication DC LOW LED red	≤43.2 V
Parallel / redundant mode	Yes/via external decoupling diode e.g. Part-No. 722999
Efficiency	>93.5 % @ AC 240 V
Power Dissipation	<17 W
Over voltage protection	≥DC 68 V
Short circuit	Adjustable: Hiccup, C.C. Mode
Overload limit in constant current mode	7 A
Overtemperature protection	Yes
Monitoring	
DC ON Control (Rdy)	N/O contact
Switching voltage	AC/DC 300 V / DC 150 V
Switching current	AC/DC 1 A
Switching capacity	300 VA / 30 W
Isolation voltage	AC 500 V
General	
Insulation voltage input / output	DC 4.2 kV, 1 min.
Insulation voltage input / ground	DC 2.2 kV, 1 min.
Insulation voltage output / ground	DC 750 V, 1 min.
Operation temperature range	-40 °C … +70 °C
Derating	no derating
Storage temperature range	-40 °C … +80 °C
MTBF	MIL-HDBK-217F, >600000 h at 25 °C ambient full load
Relative air humidity	5 – 95 %, non-condensing
Dimensions (w × h × d)	40.0 mm × 115.0 mm × 133.0 mm
Cooling	Air convection, 100 mm distance top/ bottom, 20 mm side
Housing material	Aluminum
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Vertical
Degree of protection	IP20 (IEC 529 / EN 60529)
Protection class	I
Over voltage category	III (EN 50178)
Degree of pollution	2 (IEC 60664-1)
Connection type	Screw terminal
	0,20 mm² – 2,5 mm² / AWG 24–14
Strip length	6.0 - 7.5 mm / 0.24 - 0.30 in
Screwdriver	3,0 × 0,5 mm
Tightening torque	0.5 – 0.6 Nm / 4.42 – 5.30 lbf in
Certifications	CE
	UKCA
	cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
723621	CPS2B1-240-48	DC 48 V/5 A	0.75	1

Dimensions



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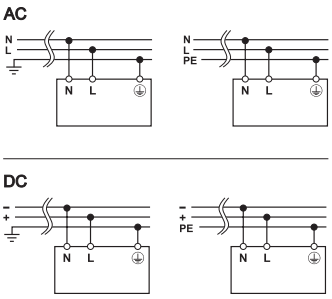


Further product information at
www.luetze.com

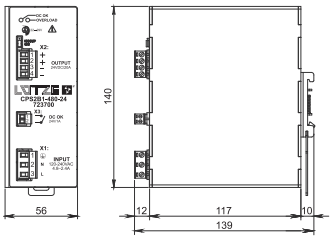
Power supply · Compact Ultra, 480 W

Primary switchmode power supply, PFC
Input: AC 90–264 V, DC 110–345 V
Output: DC 24 V, 20 A

Input	
Number of phases	1
Rated voltage U_N	AC 120/240 V (UL certified)
Operation voltage range	AC 90–264 V / DC 110–345 V
Frequency range	47 Hz – 63 Hz
Rated current I_N	4.8 A @ AC 120 V / 2.4 A @ AC 240 V
Internal fuse	8 AT (non-replaceable)
External protection	Mini-circuit breaker: C 10 A / Safety fuse: T 10 A
Power factor correction P.F.C.	>0,90, enabled
Inrush peak current	≤23 A / 0.56 A²s
Output	
Rated voltage U_N	DC 24 V
Rated current I_N	20 A
Max. output current	30 A, max. 5 s @ Hiccup Mode 21 A @ CC Mode
Setting range $U_{out\ min.}/U_{out\ max.}$	DC 22–29 V
Load regulation	<1.5 %
Ripple and noise	<150 mV pp
Hold up time	>25 ms @ AC 240 V
Status indication DC ON LED green	≥21.6 V
Status indication DC LOW LED red	≤21.6 V
Parallel / redundant mode	Yes/via external decoupling diode e.g. Part-No. 722999
Efficiency	>93 % @ AC 240 V
Power Dissipation	<36.5 W
Over voltage protection	≥DC 33 V
Short circuit	Adjustable: Hiccup, C.C. Mode
Overload limit in constant current mode	21 A
Overtemperature protection	Yes
Monitoring	
DC ON Control (Rdy)	N/O contact
Switching voltage	AC/DC 300 V / DC 150 V
Switching current	AC/DC 1 A
Switching capacity	300 VA / 30 W
Isolation voltage	AC 500 V
General	
Insulation voltage input / output	DC 4.2 kV, 1 min.
Insulation voltage input / ground	DC 2.2 kV, 1 min.
Insulation voltage output / ground	DC 750 V, 1 min.
Operation temperature range	-40 °C … +70 °C (UL approved up to +50 °C) @ AC 120 V or up to +60 °C @ AC 240 V
Derating	>50 °C: -7.6 W/°C @ AC 120 V >60 °C: -7.2 W/°C @ AC 240 V
Storage temperature range	-40 °C … +80 °C
MTBF	MIL-HDBK-217F, >600000 h at 25 °C ambient full load
Relative air humidity	5 – 95 %, non-condensing
Dimensions (w × h × d)	56.0 mm × 140.0 mm × 139.0 mm
Cooling	Air convection, 100 mm distance top/bottom, 20 mm side
Housing material	Aluminum
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Vertical
Degree of protection	IP20 (IEC 529 / EN 60529)
Protection class	I
Over voltage category	III (EN 50178)
Degree of pollution	2 (IEC 60664-1)
Connection type	Screw terminal 0,20 mm² – 2,5 mm² / AWG 24–14
Strip length	6.0 - 7.5 mm / 0.24 - 0.30 in
Screwdriver	3,0 × 0,5 mm
Tightening torque	0.5 – 0.6 Nm / 4.42 – 5.30 lbf in
Certifications	CE UKCA cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
723700	CPS2B1-480-24	DC 24 V/20 A	1.1	1

Dimensions



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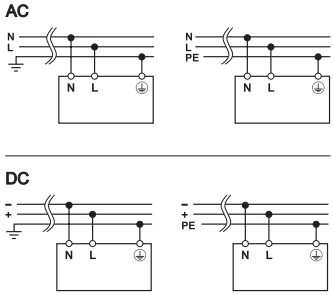


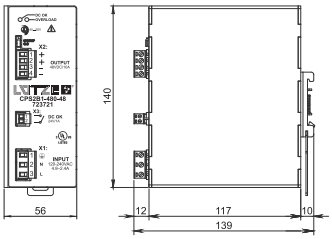
Power supply · Compact Ultra, 480 W

Primary switchmode power supply, PFC
Input: AC 90–264 V, DC 110–345 V
Output: DC 48 V, 10 A

Input	
Number of phases	1
Rated voltage U_N	AC 120/240 V (UL certified)
Operation voltage range	AC 90–264 V / DC 110–345 V
Frequency range	47 Hz – 63 Hz
Rated current I_N	4.8 A @ AC 120 V / 2.4 A @ AC 240 V
Internal fuse	8 AT (non-replaceable)
External protection	Mini-circuit breaker: C 10 A / Safety fuse: T 10 A
Power factor correction P.F.C.	>0,90, enabled
Inrush peak current	≤23 A / 0.56 A²s
Output	
Rated voltage U_N	DC 48 V
Rated current I_N	10 A
Max. output current	17 A, 5 s @ Hiccup Mode
Setting range $U_{out\ min.}$/$U_{out\ max.}$	DC 45–55 V
Load regulation	<0.5 %
Ripple and noise	<200 mV pp
Hold up time	>25 ms @ AC 240 V
Status indication DC ON LED green	≥43.2 V
Status indication DC LOW LED red	≤43.2 V
Parallel / redundant mode	Yes/via external decoupling diode e.g. Part-No. 722999
Efficiency	>94 % @ AC 240 V
Power Dissipation	<31 W
Over voltage protection	≥DC 68 V
Short circuit	Hiccup Mode, Constant current (C.C.)
Overload limit in constant current mode	12 A
Overtemperature protection	Yes
Monitoring	
DC ON Control (Rdy)	N/O contact
Switching voltage	AC/DC 300 V / DC 150 V
Switching current	AC/DC 1 A
Switching capacity	300 VA / 30 W
Isolation voltage	AC 500 V
General	
Insulation voltage input / output	DC 4.2 kV, 1 min.
Insulation voltage input / ground	DC 2.2 kV, 1 min.
Insulation voltage output / ground	DC 750 V, 1 min.
Operation temperature range	-40 °C … +70 °C
Derating	>50 °C: -7.6 W/°C @ AC 120 V >60 °C: -7.2 W/°C @ AC 240 V
Storage temperature range	-40 °C … +80 °C
MTBF	MIL-HDBK-217F, >600000 h at 25 °C ambient full load
Relative air humidity	5 – 95 %, non-condensing
Dimensions (w × h × d)	56.0 mm × 140.0 mm × 139.0 mm
Cooling	Air convection, 100 mm distance top/bottom, 20 mm side
Housing material	Aluminum
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Vertical
Degree of protection	IP20 (IEC 529 / EN 60529)
Protection class	I
Over voltage category	III (EN 50178)
Degree of pollution	2 (IEC 60664-1)
Connection type	Screw terminal 0,20 mm² – 2,5 mm² / AWG 24–14
Strip length	6.0 - 7.5 mm / 0.24 - 0.30 in
Screwdriver	3,0 × 0,5 mm
Tightening torque	0.5 – 0.6 Nm / 4.42 – 5.30 lbf in
Certifications	CE UKCA cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
723721	CPS2B1-480-48	DC 24 V/20 A	1.1	1

Dimensions



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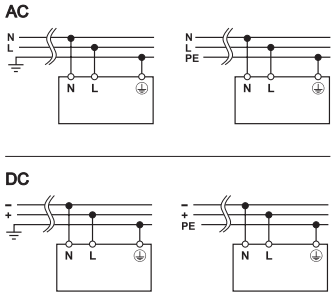


Further product information at www.luetze.com

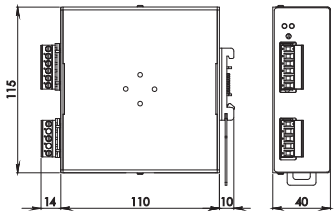
Power supply · Compact Universal, 120 W

Primary switched power supplies, PFC, 1/2-phase
Input: wide-range input AC 187–550 V, DC 270–725 V
Output: DC 24 V, 5 A

Input	
Number of phases	2
Rated voltage U_N	AC 200–500 V
Operation voltage range	AC 187–550 V / DC 270–725 V
Frequency range	47 Hz – 63 Hz
Rated current I_N	1.4 A @ AC 200 V / 0.7 A @ AC 500 V
Inrush current	<21 A
External protection	Mini-circuit breaker: D 6 A, C 6 A / safety fuse: T 4 A (required)
Power factor correction P.F.C.	>0.55
Output	
Rated voltage U_N	DC 24 V
Rated current I_N	5 A
Max. output current	7.5 A, 30 s
Short-circuit current	14 A
Setting range $U_{out\ min.}/U_{out\ max.}$	23-28 V
Load regulation	<1 %
Ripple and noise	<110 mV pp
Hold up time	>17 ms @ AC 120 V / >60 ms @ AC 230 V
Status indication DC ON LED green	≥21.6 V
Status indication DC LOW LED red	I_{out} >110 % I_N
Parallel / redundant mode	Yes/via external decoupling diode e.g. 722999
Efficiency	88 %
Power Dissipation	<17 W
Rated over load protection	Yes
Over voltage protection	>DC 33 V
Short circuit	Hiccup Mode
Monitoring	
DC ON Control (Rdy)	N/O contact
Switching voltage	AC/DC 300 V / DC 150 V
Switching current	AC/DC 1 A
Switching capacity	300 VA / 30 W
Isolation voltage	AC 500 V
General	
Insulation voltage input / output	DC 4.2 kV
Insulation voltage input / ground	DC 2.2 kV
Insulation voltage output / ground	DC 750 V
Operation temperature range	-20 °C … +70 °C (overtemperature protection)
Derating	>60 °C: -1.2 W/°C
Storage temperature range	-40 °C … +80 °C
MTBF	>500000 h: SN29500 / >500000 h: MIL HDBK 217F
Relative air humidity	5 – 95 % RH, non-condensing
Dimensions (w × h × d)	40.0 mm × 115.0 mm × 110.0 mm
Cooling	Air convection, 50 mm distance top/bottom, 20 mm side
Housing material	Aluminum
Shock resistance	30 g 6 ms, 20 g 11 ms, 3 shocks/direction, 18 shocks in total, IEC60068-2-27
Vibration resistance	5 – 17.8 Hz: ±1.6 mm, 17.8 – 500 Hz: 2 g 2 hours/axes X,Y,Z, IEC 60068-2-6
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Vertical
Degree of protection	IP20 (IEC 529 / EN 60529)
Protection class	I
Over voltage category	III
Degree of pollution	2
Connection type	Screw terminal 0.20 mm² – 2.5 mm² AWG 24 – AWG 12 plug-in
Certifications	CE UKCA cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
722995	CPSB2-120-24	DC 24 V/5 A	0.5	1

Dimensions



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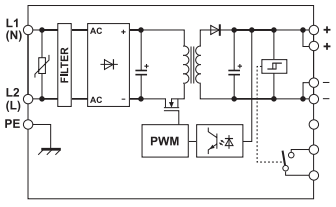


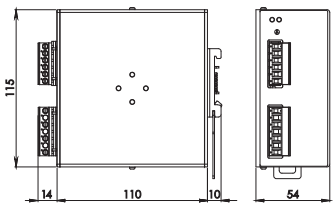
Power supply · Compact Universal, 240 W

Primary switched power supplies, PFC, 1/2/3-phase
Input: wide-range input AC 187–550 V, DC 250–725 V
Output: DC 24 V, 10 A

Input		Switching current	DC 1 A
Number of phases	3	Switching capacity	30 W
Rated voltage U_N	AC 200–500 V	Isolation voltage	AC 500 V
Operation voltage range	AC 187–550 V / DC 250–725 V (UL: DC 300–500 V)	**General**	
Frequency range	47 Hz – 63 Hz	Insulation voltage input / output	DC 4.2 kV
Rated current I_N	1-/2-phase: 2.2 A @ AC 220 V / 1.1 A @ AC 500 V, 3-phase: 1.5 A @ AC 220 V / 0.8 A @ AC 500 V	Insulation voltage input / ground	DC 2.2 kV
		Insulation voltage output / ground	DC 750 V
		Operation temperature range	-40 °C … +70 °C (UL approved up to +50 °C)
Inrush current	≤45 A / 1.31 A²s		
External protection	Mini-circuit breaker: D 4 A, C 6 A / safety fuse: T 6.3 A (required)	Derating	>50 °C: -4.2 W/°C
		Storage temperature range	-40 °C … +80 °C
Power factor correction P.F.C.	>0.6 @ 230 V, >0.5 @ 400 V	MTBF	>500000 h: SN29500 / >500000 h: MIL HDBK 217F
		Relative air humidity	5 – 95 % RH, non-condensing
Output		Dimensions (w × h × d)	54.0 mm × 115.0 mm × 110.0 mm
Rated voltage U_N	DC 24 V	Cooling	Air convection, 50 mm distance top/bottom, 20 mm side
Rated current I_N	10 A		
Max. output current	15 A, 6 A	Housing material	Aluminum
Short-circuit current	38 A	Shock resistance	30 g 6 ms, 20 g 11 ms, 3 shocks/direction, 18 shocks in total, IEC60068-2-27
Setting range $U_{out\ min.}$/$U_{out\ max.}$	23-28 V		
Load regulation	<1 %	Vibration resistance	5 – 17.8 Hz: ±1.6 mm, 17.8 – 500 Hz: 2 g 2 hours/axes X,Y,Z, IEC 60068-2-6
Ripple and noise	<100 mV pp		
Hold up time	>15 ms @ AC 230 V / >100 ms @ AC 500 V	Mounting	DIN rail mountable TS35 (EN 60715)
Status indication DC ON LED green	≥21.6 V		
Status indication DC LOW LED red	≤21.6 V	Installation position	Vertical
Parallel / redundant mode	Yes/via external decoupling diode e.g. 722999	Degree of protection	IP20 (IEC 529 / EN 60529)
		Protection class	I
Efficiency	>93 %	Over voltage category	III
Power Dissipation	<18 W	Degree of pollution	2
Rated over load protection	Yes	Connection type	Screw terminal
Over voltage protection	>DC 33 V		0.20 mm² – 2.5 mm² AWG 30 – AWG 12 plug-in
Short circuit	Hiccup Mode		
Monitoring		Certifications	CE
DC ON Control (Rdy)	N/O contact		UKCA
Switching voltage	DC 30 V		cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
722996	CPSB-123-240-24	DC 24 V/10 A	0.65	1

Dimensions



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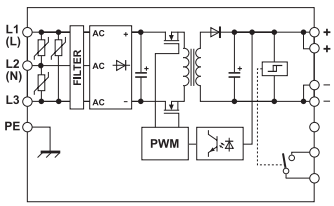


Further product information at www.luetze.com

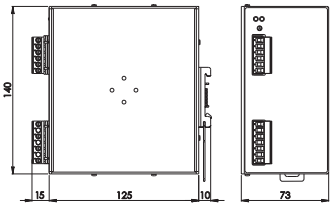
Power supply · Compact Universal, 480 W

Primary switched power supplies, PFC, 1/2/3-phase
Input: wide-range input AC 187–550 V, DC 250–725 V
Output: DC 24 V, 20 A

Input	
Number of phases	3
Rated voltage U_N	One-, two- and three-phase AC 200-500 V
Operation voltage range	AC 187–550 V / DC 250–725 V (UL: DC 300–500 V)
Frequency range	47 Hz – 63 Hz
Rated current I_N	1-/2-phase: 2.9 A @ AC 200 V / 1.3 A @ AC 500 V, 3-phase: 1.8 A @ AC 200 V / 0.8 A @ AC 500 V
Inrush current	≤55 A / 2.16 A²s
External protection	Mini-circuit breaker: C 6 A, or D 4 A (required)
Power factor correction P.F.C.	>0.9
Output	
Rated voltage U_N	DC 24 V
Rated current I_N	20 A
Max. output current	28 A, 5 s
Short-circuit current	50 A
Setting range $U_{out\ min.}$/$U_{out\ max.}$	23-28 V
Load regulation	<1 %
Ripple and noise	<50 mV pp
Hold up time	>50 ms
Status indication DC ON LED green	≥21.6 V
Status indication DC LOW LED red	I_{out} >1.1 I_N
Parallel / redundant mode	Yes/via external decoupling diode
Efficiency	>92 %
Power Dissipation	<42 W
Over voltage protection	≥DC 33 V
Short circuit	Hiccup Mode
Overtemperature protection	Yes
Monitoring	
DC ON Control (Rdy)	N/O contact
Switching voltage	AC/DC 30 V
Switching current	AC/DC 1 A
Switching capacity	30 VA / 30 W
Isolation voltage	AC 500 V
General	
Insulation voltage input / output	DC 4.2 kV
Insulation voltage input / ground	DC 2.2 kV
Insulation voltage output / ground	DC 750 V
Operation temperature range	-40 °C … +70 °C (UL approved up to +45 °C)
Derating	>45 °C: -10 W/°C
Storage temperature range	-40 °C … +80 °C
MTBF	>500000 h: SN29500 / >500000 h: MIL HDBK 217F
Relative air humidity	5 – 95 % RH, non-condensing
Dimensions (w × h × d)	73.0 mm × 140.0 mm × 125.0 mm
Cooling	Air convection, 50 mm distance top/bottom, 20 mm side
Housing material	Aluminum
Shock resistance	30 g 6 ms, 20 g 11 ms, 3 shocks/direction, 18 shocks in total, IEC60068-2-27
Vibration resistance	5 – 17.8 Hz: ±1.6 mm, 17.8 – 500 Hz: 2 g 2 hours/axes X,Y,Z, IEC 60068-2-6
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Vertical
Degree of protection	IP20 (IEC 529 / EN 60529)
Protection class	I
Over voltage category	III
Degree of pollution	2
Connection type	Screw terminal 0.20 mm² – 2.5 mm² AWG 24 – AWG 12 plug-in
Certifications	CE UKCA cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
722801	CPSB-123-480-24	DC 24 V/20 A	1	1

Dimensions



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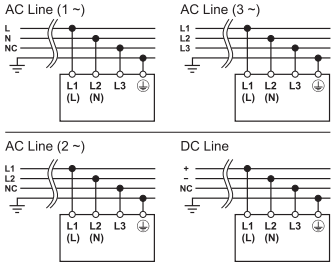


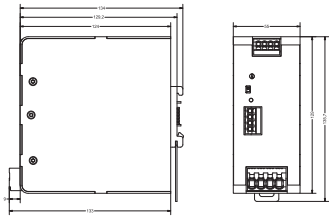
Power supply · Compact, 3-phase, 120 W

Power supply unit, primary switched 3-phase
Input: wide range input AC 350–575 V
Output: DC 24 V, 5 A

Input		**General**	
Number of phases	3	Insulation voltage input / output	AC 3.51 kV
Rated voltage U_N	3 × AC 400–500 V	Insulation voltage input / ground	AC 2.21 kV
Operation voltage range	max. 3 × AC 350–575 V	Insulation voltage output / ground	AC 1.39 kV
Frequency range	47 Hz – 63 Hz	Operation temperature range	-25 °C … +70 °C (Derating > 55 °C)
Rated current I_N	0.35 A @ AC 400 V / 0.3 A @ AC 500 V	Derating	0.8 W/°C
Inrush current	30 A @ AC 400 V / 39 A @ AC 500 V	Storage temperature range	-40 °C … +85 °C
External protection	3 × B 6 A	MTBF	min. 5.7 Mio. h, Service lifetime: >184 000 h @ AC 400 V / |>162 000 h @ AC 500 V
Power factor correction P.F.C.	> 0.5		
Output			
Rated voltage U_N	DC 24 V	Relative air humidity	5 – 95 % RH, non-condensing
Rated current I_N	5 A	Dimensions (w × h × d)	55.0 mm × 129.0 mm × 133.0 mm
Max. output current (limited current)	7,5 A	Cooling	Air convection, 15 mm distance right/ left, 40 mm top, 30 mm bottom
Setting range $U_{out\ min.}$/$U_{out\ max.}$	DC 22.5–29 V		
Load regulation	max. 0.4 % AC 350 … 550 V	Housing material	Aluminum
	max. 2.9 % AC 350 … 550 V, parallel mode	Shock resistance	30 g / 11 ms ± 5 ms, 3 bumps/direction, 9 bumps total non-operating, mounted on DIN-Rail (IEC 60068-2-27)
Ripple and noise	<30 mV pp		
Hold up time	>23 ms @ AC 400 V / >43 ms @ AC 500 V	Vibration resistance	2 g / 10 - 500 Hz, 1 hour/direction X,Y,Z non-operating, mounted on DIN-Rail (IEC 60068-2-6)
Parallel / redundant mode	Max. 3 devices / via external decoupling diodes e.g. 722999	Mounting	DIN rail mountable TS35 (EN 60715)
Efficiency	max. 91.3 % @ AC 400 V / max. 91.2 % @ AC 500 V	Installation position	Vertical
		Degree of protection	IP20 (IEC 529 / EN 60529)
Power Dissipation	<11.5 W, < 2.1 W stand-by	Protection class	I (IEC 61140)
Rated over load protection	> 80°C, autoreset	Over voltage category	III (IEC 61010-1)
Over voltage protection	<32 V	Degree of pollution	2 (IEC 60664-1, IEC 62477-1)
Short circuit	Current limit	Connection type	Push-In
	Hiccup		0.20 mm² – 6.0 mm²
			max. 0.62 Nm
Monitoring			Input: 0,2 – 10 mm²
Switching voltage	AC 300 V / DC 150 V		Output/Signalisation 0.2 – 2.5 mm²
Switching current	AC/DC 1 A		Wiring table
Switching capacity	300 VA / 30 W	Certifications	CE
Isolation voltage	AC 1.39 kV		UKCA
			cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg
722818	CPSB3-120-24	DC 24 V/5 A	0.66

Dimensions



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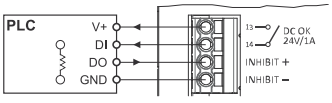


Further product information at www.luetze.com

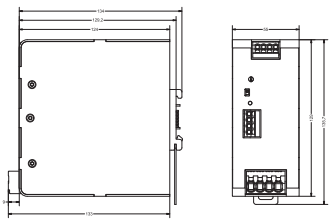
Power supply · Compact, 3-phase, 240 W

Power supply unit, primary switched 3-phase
Input: wide range input AC 350–575 V
Output: DC 24 V, 10 A

Input			
Number of phases	3		
Rated voltage U_N	3 × AC 400–500 V	**General**	
Operation voltage range	max. 3 × AC 350–575 V	Insulation voltage input / output	AC 3.51 kV
Frequency range	47 Hz – 63 Hz	Insulation voltage input / ground	AC 2.21 kV
Rated current I_N	0.59 A @ AC 400 V / 0.50 A @ AC 500 V	Insulation voltage output / ground	AC 1.39 kV
		Operation temperature range	-25 °C … +70 °C (Derating > 55 °C)
Inrush current	36 A @ AC 400 V / 40 A @ AC 500 V	Derating	2.4 W/°C
External protection	3 × B 6 A	Storage temperature range	-40 °C … +85 °C
Power factor correction P.F.C.	>0.6	MTBF	min. 5.7 Mio. h, Service lifetime: >184 000 h @ AC 400 V / |>162 000 h @ AC 500 V
Output			
Rated voltage U_N	DC 24 V	Relative air humidity	20 – 95 % RH, not condensing
Rated current I_N	10 A	Dimensions (w × h × d)	55.0 mm × 129.0 mm × 133.0 mm
Max. output current (limited current)	15 A	Cooling	Air convection, 15 mm distance right/ left, 40 mm top, 30 mm bottom
Setting range $U_{out\,min.}/U_{out\,max.}$	DC 22.5–29 V	Housing material	Aluminum
Load regulation	max. 0.6 % AC 350 … 550 V	Shock resistance	30 g / 11 ms ± 5 ms, 3 bumps/direction, 9 bumps total non-operating, mounted on DIN-Rail (IEC 60068-2-27)
	max. 3.1 % AC 350 … 550 V, parallel mode		
Ripple and noise	<40 mV pp		
Hold up time	>22 ms @ AC 400 V / 44 ms @ AC 500 V	Vibration resistance	2 g / 10 - 500 Hz, 1 hour/direction X,Y,Z non-operating, mounted on DIN-Rail (IEC 60068-2-6)
Parallel / redundant mode	Max. 3 devices / via external decoupling diodes e.g. 722999	Mounting	DIN rail mountable TS35 (EN 60715)
Efficiency	max. 93.1 % @ AC 400 V / max. 93.2 % @ AC 500 V	Installation position	Vertical
		Degree of protection	IP20 (IEC 529 / EN 60529)
Power Dissipation	<18 W, <2.0 W stand-by	Protection class	I (IEC 61140)
Rated over load protection	> 80°C, autoreset	Over voltage category	III (IEC 61010-1)
Over voltage protection	<32 V	Degree of pollution	2 (IEC 60664-1, IEC 62477-1)
Short circuit	Current limit Hiccup	Connection type	Push-In 0.20 mm² – 6.0 mm² max. 0.62 Nm Input: 0,2 – 10 mm² Output/Signalisation 0.2 – 2.5 mm²
Monitoring			
Switching voltage	AC 300 V / DC 150 V		
Switching current	AC/DC 1 A	Certifications	CE UKCA cULus (E249179)
Switching capacity	300 VA / 30 W		
Isolation voltage	AC 1.39 kV		

Part No.	Type	Output voltage/current	Weight/unit kg
722820	CPSB3-240-24	DC 24 V/10 A	0.78

Dimensions



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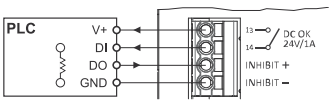


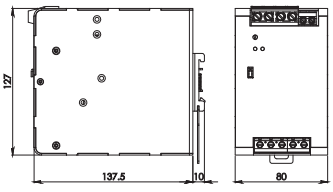
Power supply · Compact 3-phase, 960 W

Primary switchmode power supply, PFC, 3-phase
Input: Wide range input AC 340 - 550 V
Output: DC 24 V, 40 A

Input		Isolation voltage	AC 500 V
Number of phases	3		
Rated voltage U_N	AC 400–500 V	**General**	
Operation voltage range	AC 340–550 V / DC 520–725 V	Switching frequency	Approx. 70 - 110 kHz
Frequency range	47 Hz – 63 Hz	Insulation voltage input / output	DC 4.2 kV
Rated current I_N	2.4 A @ AC 400 V / 2.1 A @ AC 500 V	Insulation voltage input / ground	DC 2.2 kV
Inrush current	≤50 A / 1.86 A²s	Insulation voltage output / ground	DC 750 V
External protection	Mini-circuit breaker: 3 × C 10 A / safety fuse: 3 × T 10 A (required)	Operation temperature range	-40 °C … +70 °C (UL approved up to +45 °C)
Power factor correction P.F.C.	>0.7	Derating	>45 °C: -15 W/°C
		Storage temperature range	-40 °C … +80 °C
Output		MTBF	>500000 h: SN29500 / >500000 h: MIL HDBK 217F
Rated voltage U_N	DC 24 V		
Rated current I_N	40 A	Relative air humidity	5 – 95 % RH, non-condensing
Max. output current (limited current)	44 A	Dimensions (w × h × d)	80.0 mm × 127.0 mm × 137.5 mm
Max. output current (HICCUP, 5 sec)	60 A	Cooling	Air convection, forced cooling >50°C, 50 mm distance top/bottom
Setting range $U_{out\ min.}$/$U_{out\ max.}$	23-28 V	Housing material	Aluminum
Load regulation	<1 %	Shock resistance	30 g 6 ms, 20 g 11 ms, 3 shocks/direction, 18 shocks in total, IEC60068-2-27
Ripple and noise	<150 mV pp		
Hold up time	>15 ms	Vibration resistance	5 – 17.8 Hz: ±1.6 mm, 17.8 – 500 Hz: 2 g 2 hours/axes X,Y,Z, IEC 60068-2-6
Status indication DC ON LED green	≥21.6 V		
Status indication DC LOW LED red	≤21.6 V	Mounting	DIN rail mountable TS35 (EN 60715)
Parallel / redundant mode	Max. 2 devices / via external decoupling diodes e.g. 722999		
		Installation position	Vertical
Efficiency	>92.5 %	Degree of protection	IP20 (IEC 529 / EN 60529)
Power Dissipation	<78 W	Protection class	I
Rated over load protection	> 90°C, auto-reset	Over voltage category	III
Over voltage protection	≥DC 33 V	Degree of pollution	2
Short circuit	Adjustable: Hiccup, current limiting	Connection type	Screw terminal 0.20 mm² – 10.0 mm² max. 0.62 Nm
Monitoring			
DC ON Control (Rdy)	N/O contact	Certifications	CE UKCA cULus (E249179)
Switching voltage	AC 300 V / DC 150 V		
Switching current	AC/DC 1 A		
Switching capacity	300 VA / 30 W		

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
722811	CPSB3-960-24	DC 24 V/40 A	1.3	1

Dimensions



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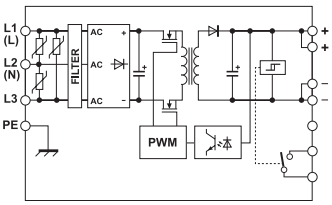


Further product information at
www.luetze.com

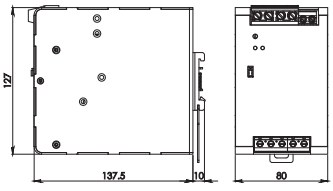
Power supply · Compact 3-phase, 960 W

Primary switchmode power supply, PFC, 3-phase
Input: Wide range input AC 340 - 550 V
Output: DC 48 V, 20 A

Input		Isolation voltage	AC 500 V
Number of phases	3		
Rated voltage U_N	3 × AC 400–500 V	**General**	
Operation voltage range	AC 340–550 V / DC 520–725 V	Switching frequency	Approx. 70 - 110 kHz
Frequency range	47 Hz – 63 Hz	Insulation voltage input / output	DC 4.2 kV
Rated current I_N	2.4 A @ AC 400 V / 2.1 A @ AC 500 V	Insulation voltage input / ground	DC 2.2 kV
Inrush current	≤50 A / 1.86 A²s	Insulation voltage output / ground	DC 750 V
External protection	Mini-circuit breaker: 3 × C 10 A / safety fuse: 3 × T 10 A (required)	Operation temperature range	-40 °C … +70 °C (UL approved up to +45 °C)
Power factor correction P.F.C.	>0.7	Derating	>45 °C: -15 W/°C
		Storage temperature range	-40 °C … +80 °C
Output		MTBF	>500000 h: SN29500 / >500000 h: MIL HDBK 217F
Rated voltage U_N	DC 48 V		
Rated current I_N	20 A	Relative air humidity	5 – 95 % RH, non-condensing
Max. output current (limited current)	22 A	Dimensions (w × h × d)	80.0 mm × 127.0 mm × 137.5 mm
Max. output current (HICCUP, 5 sec)	30 A	Cooling	Air convection, forced cooling >50°C, 50 mm distance top/bottom
Setting range $U_{out\ min.}$/$U_{out\ max.}$	45-55 V		
Load regulation	≤0.5 %	Housing material	Aluminum
Ripple and noise	<150 mV pp	Shock resistance	30 g 6 ms, 20 g 11 ms, 3 shocks/direction, 18 shocks in total, IEC60068-2-27
Hold up time	>15 ms		
Status indication DC ON LED green	≥43.2 V	Vibration resistance	5 – 17.8 Hz: ±1.6 mm, 17.8 – 500 Hz: 2 g 2 hours/axes X,Y,Z, IEC 60068-2-6
Status indication DC LOW LED red	≤43.2 V		
Parallel / redundant mode	Max. 2 devices / via external decoupling diodes e.g. 722999	Mounting	DIN rail mountable TS35 (EN 60715)
		Installation position	Vertical
Efficiency	>92.5 %	Degree of protection	IP20 (IEC 529 / EN 60529)
Power Dissipation	<78 W	Protection class	I
Rated over load protection	> 90°C, auto-reset	Over voltage category	III
Over voltage protection	≥DC 68 V	Degree of pollution	2
Short circuit	Adjustable: Hiccup, current limiting (C.C. Modus)	Connection type	Screw terminal 0.20 mm² – 6.0 mm² max. 0.62 Nm
Monitoring			
DC ON Control (Rdy)	N/O contact	Certifications	CE UKCA cULus (E249179)
Switching voltage	AC 300 V / DC 150 V		
Switching current	AC/DC 1 A		
Switching capacity	300 VA / 30 W		

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
722812	CPSB3-960-48	DC 48 V/20 A	1.3	1

Dimensions



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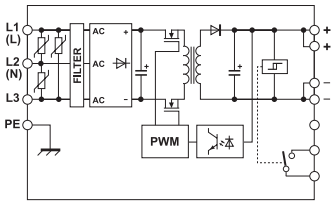


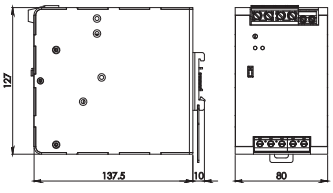
Power supply · Compact 3-phase, 960 W

Primary switchmode power supply, PFC, 3-phase
Input: Wide range input AC 340 - 550 V
Output: DC 72 V, 13.3 A

Input	
Number of phases	3
Rated voltage U_N	AC 400–500 V
Operation voltage range	AC 340–550 V / DC 520–725 V
Frequency range	47 Hz – 63 Hz
Rated current I_N	2.4 A @ AC 400 V / 2.1 A @ AC 500 V
Inrush current	≤50 A / 1.86 A²s
External protection	Mini-circuit breaker: 3 × C 10 A / safety fuse: 3 × T 10 A (required)
Power factor correction P.F.C.	>0.7
Output	
Rated voltage U_N	DC 72 V
Rated current I_N	13.3 A
Max. output current (limited current)	15 A
Max. output current (HICCUP, 5 sec)	20 A
Setting range $U_{out\ min.}$/$U_{out\ max.}$	72–85 V
Load regulation	≤0.5 %
Ripple and noise	<150 mV pp
Hold up time	>15 ms
Status indication DC ON LED green	≥64.8 V
Status indication DC LOW LED red	≤64.8 V
Parallel / redundant mode	Max. 2 devices / via external decoupling diodes e.g. 722999
Efficiency	>93 %
Power Dissipation	<73 W
Rated over load protection	> 90°C, auto-reset
Over voltage protection	<100 V
Short circuit	Adjustable: Hiccup, current limiting (C.C. Modus)
Monitoring	
DC ON Control (Rdy)	N/O contact
Switching voltage	AC 300 V / DC 150 V
Switching current	AC/DC 1 A
Switching capacity	300 VA / 30 W
Isolation voltage	AC 500 V
General	
Switching frequency	Approx. 70 - 110 kHz
Insulation voltage input / output	DC 4.2 kV
Insulation voltage input / ground	DC 2.2 kV
Insulation voltage output / ground	DC 750 V
Operation temperature range	-40 °C … +70 °C (UL approved up to +45 °C)
Derating	>45 °C: -15 W/°C
Storage temperature range	-40 °C … +80 °C
MTBF	>500000 h: SN29500 / >500000 h: MIL HDBK 217F
Relative air humidity	5 – 95 % RH, non-condensing
Dimensions (w × h × d)	80.0 mm × 127.0 mm × 137.5 mm
Cooling	Air convection, forced cooling >50°C, 50 mm distance top/bottom
Housing material	Aluminum
Shock resistance	30 g 6 ms, 20 g 11 ms, 3 shocks/direction, 18 shocks in total, IEC60068-2-27
Vibration resistance	5 – 17.8 Hz: ±1.6 mm, 17.8 – 500 Hz: 2 g 2 hours/axes X,Y,Z, IEC 60068-2-6
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Vertical
Degree of protection	IP20 (IEC 529 / EN 60529)
Protection class	I
Over voltage category	III
Degree of pollution	2
Connection type	Screw terminal 0.20 mm² – 6.0 mm² max. 0.62 Nm
Certifications	CE UKCA cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
722813	CPSB3-960-72	DC 72 V/13.3 A	1.3	1

Dimensions



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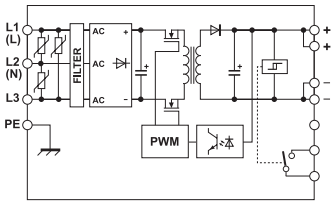


Further product information at
www.luetze.com

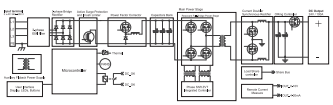
Power supply · Compact 3-phase, 2400 W

Primary switchmode power supply, PFC, 3-phase
Input: Wide range input AC 340 - 550 V
Output: DC 24 V, 100 A

Input		Isolation voltage	AC 500 V
Number of phases	3	Output current	galvanically isolated: 0–10 V and 4–20 mA
Rated voltage U_N	3 × AC 400–500 V		
Operation voltage range	AC 340–550 V / DC 520–750 V	**General**	
Frequency range	47 Hz – 63 Hz	Insulation voltage input / output	DC 4.2 kV
Rated current I_N	4.5 A @ AC 400 V / 3.5 A @ AC 500 V	Insulation voltage input / ground	DC 2.2 kV
Inrush current	< 12.5 A (active inrush current limitation)	Insulation voltage output / ground	DC 750 V
External protection	Mini-circuit breaker: 3 × C 10 A / safety fuse: 3 × T 10 A (required)	Operation temperature range	-40 °C … +70 °C (UL approved up to +50 °C)
Power factor correction P.F.C.	>0.92	Derating	>50 °C: -60 W/°C
Input protection	Surge protection according to VDE 0160, over/undervoltage (auto restart)		Automatic power derating (1200 W) for 2 phases operation
	Phase monitoring (reduced output power): PFC error	Storage temperature range	-40 °C … +80 °C
		MTBF	>500000 h: SN29500 / >700000 h: MIL HDBK 217F
Output		Relative air humidity	5 – 95 % RH, non-condensing
Rated voltage U_N	DC 24 V	Dimensions (w × h × d)	233.0 mm × 160.0 mm × 101.0 mm
Rated current I_N	100 A	Cooling	Air convection, forced cooling >45°C, 80 mm distance top/bottom, 10 mm side
Max. output current (limited current)	>100 A		
Max. output current (HICCUP, 5 sec)	150 A		
Setting range $U_{out\ min.}$/$U_{out\ max.}$	DC 11.9–29 V	Housing material	Aluminum
Load regulation	<1 %	Shock resistance	30 g 6 ms, 20 g 11 ms, 3 shocks/direction, 18 shocks in total, IEC60068-2-27
Rise time	< 4.5 s		
Ripple and noise	<200 mV pp	Vibration resistance	5 – 17.8 Hz: ±1.6 mm, 17.8 – 500 Hz: 2 g 2 hours/axes X,Y,Z, IEC 60068-2-6
Hold up time	>10 ms @ AC 400 V / >10 ms @ AC 500 V	Mounting	DIN rail mountable TS35 (EN 60715)
Status indication DC ON LED green	Alphanumeric display		
Status indication DC LOW LED red	Alphanumeric display	Installation position	Vertical
Parallel / redundant mode	Max. 4 devices	Degree of protection	IP20 (IEC 529 / EN 60529)
Efficiency	>92 %	Protection class	I
Power Dissipation	<200 W	Over voltage category	III
Over voltage protection	>DC 33 V	Degree of pollution	2
Short circuit	Adjustable: Hiccup, current limiting (C.C. Modus)	Connection type	Screw terminal Input 0.20 mm² – 4.0 mm² Output 0.20 mm² – 35.0 mm² Auxiliary 0.20 mm² – 1.5 mm²
Monitoring			
DC ON Control (Rdy)	Relay, N/O contact active, adjustable, DCok: 90–110 % Uset, ACok: acc. input voltage range, overload		
	Overtemperature range, charging complete	Certifications	CE UKCA
Switching capacity	AC/DC 30 V, 1 A, 30 W		cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
722814	CPSB3-2400-24	DC 24 V/100 A	2.8	1

PIN assignment



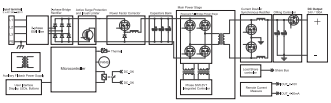
Power supply · Compact 3-phase, 2400 W

Primary switchmode power supply, PFC, 3-phase
Input: Wide range input AC 340 - 550 V
Output: DC 48 V, 50 A

Input	
Number of phases	3
Rated voltage U_N	3 × AC 400–500 V
Operation voltage range	AC 340–550 V / DC 520–750 V
Frequency range	47 Hz – 63 Hz
Rated current I_N	4.5 A @ AC 400 V / 3.5 A @ AC 500 V
Inrush current	< 10 A (active inrush current limitation)
External protection	Mini-circuit breaker: 3 × C 10 A / safety fuse: 3 × T 10 A (required)
Power factor correction P.F.C.	>0.92
Input protection	Surge protection according to VDE 0160, over/undervoltage (auto restart)
	Phase monitoring (reduced output power): PFC error
Output	
Rated voltage U_N	DC 48 V
Rated current I_N	50 A
Max. output current (limited current)	50 A
Max. output current (HICCUP, 5 sec)	75 A
Setting range $U_{out\ min.}$/$U_{out\ max.}$	DC 23–56 V
Load regulation	<1 %
Rise time	< 4.5 s
Ripple and noise	<200 mV pp
Hold up time	>10 ms @ AC 400 V / >10 ms @ AC 500 V
Status indication DC ON LED green	Alphanumeric display
Status indication DC LOW LED red	Alphanumeric display
Parallel / redundant mode	Max. 4 devices
Efficiency	>92 %
Power Dissipation	<200 W
Over voltage protection	≥DC 68 V
Short circuit	Adjustable: Hiccup, current limiting (C.C. Modus)
Monitoring	
DC ON Control (Rdy)	Relay, N/O contact active, adjustable, DCok: 90–110 % Uset, ACok: acc. input voltage range, overload
	Overtemperature range, charging complete
Switching capacity	AC/DC 30 V, 1 A, 30 W
Isolation voltage	AC 500 V
Output current	galvanically isolated: 0–10 V and 4–20 mA
General	
Insulation voltage input / output	DC 4.2 kV
Insulation voltage input / ground	DC 2.2 kV
Insulation voltage output / ground	DC 750 V
Operation temperature range	-40 °C … +70 °C (UL approved up to +50 °C)
Derating	>50 °C: -60 W/°C
	Automatic power derating (1200 W) for 2 phases operation
Storage temperature range	-40 °C … +80 °C
MTBF	>500000 h: SN29500 / >700000 h: MIL HDBK 217F
Relative air humidity	5 – 95 % RH, non-condensing
Dimensions (w × h × d)	233.0 mm × 160.0 mm × 101.0 mm
Cooling	Air convection, forced cooling >45°C, 80 mm distance top/bottom, 10 mm side
Housing material	Aluminum
Shock resistance	30 g 6 ms, 20 g 11 ms, 3 shocks/direction, 18 shocks in total, IEC60068-2-27
Vibration resistance	5 – 17.8 Hz: ±1.6 mm, 17.8 – 500 Hz: 2 g 2 hours/axes X,Y,Z, IEC 60068-2-6
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Vertical
Degree of protection	IP20 (IEC 529 / EN 60529)
Protection class	I
Over voltage category	III
Degree of pollution	2
Connection type	Screw terminal
	Input
	0.20 mm² – 4.0 mm²
	Output
	0.20 mm² – 35.0 mm²
	Auxiliary
	0.20 mm² – 1.5 mm²
Certifications	CE
	UKCA
	cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
722816	CPSB3-2400-48	DC 48 V/50 A	2.8	1

PIN assignment



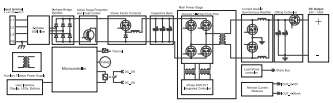
Power supply · Compact 3-phase, 2400 W

Primary switchmode power supply, PFC, 3-phase
Input: Wide range input AC 340 - 550 V
Output: DC 72 V, 33 A

Input	
Number of phases	3
Rated voltage U_N	3 × AC 400–500 V
Operation voltage range	AC 340–550 V / DC 520–750 V
Frequency range	47 Hz – 63 Hz
Rated current I_N	4.5 A @ AC 400 V / 3.5 A @ AC 500 V
Inrush current	< 10 A (active inrush current limitation)
External protection	Mini-circuit breaker: 3 × C 10 A / safety fuse: 3 × T 10 A (required)
Power factor correction P.F.C.	>0.92
Input protection	Surge protection according to VDE 0160, over/undervoltage (auto restart)
	Phase monitoring (reduced output power): PFC error
Output	
Rated voltage U_N	DC 72 V
Rated current I_N	33 A
Max. output current (limited current)	33 A
Max. output current (HICCUP, 5 sec)	50 A
Setting range $U_{out\ min.}$/$U_{out\ max.}$	DC 50–87 V
Load regulation	<1 %
Rise time	< 4.5 s
Ripple and noise	<200 mV pp
Hold up time	>10 ms @ AC 400 V / >10 ms @ AC 500 V
Status indication DC ON LED green	Alphanumeric display
Status indication DC LOW LED red	Alphanumeric display
Parallel / redundant mode	Max. 4 devices
Efficiency	>93 %
Power Dissipation	<180 W
Over voltage protection	>DC 100 V
Short circuit	Adjustable: Hiccup, current limiting (C.C. Modus)
Monitoring	
DC ON Control (Rdy)	Relay, N/O contact active, adjustable, DCok: 90–110 % Uset, ACok: acc. input voltage range, overload
	Overtemperature range, charging complete
Switching capacity	AC/DC 30 V, 1 A, 30 W
Isolation voltage	AC 500 V
Output current	galvanically isolated: 0–10 V and 4–20 mA
General	
Insulation voltage input / output	DC 4.2 kV
Insulation voltage input / ground	DC 2.2 kV
Insulation voltage output / ground	DC 750 V
Operation temperature range	-40 °C … +70 °C (UL approved up to +50 °C)
Derating	>50 °C: -60 W/°C
	Automatic power derating (1200 W) for 2 phases operation
Storage temperature range	-40 °C … +80 °C
MTBF	>500000 h: SN29500 / >150000 h: MIL HDBK 217F
Relative air humidity	5 – 95 % RH, non-condensing
Dimensions (w × h × d)	233.0 mm × 160.0 mm × 101.0 mm
Cooling	Air convection, forced cooling >45°C, 80 mm distance top/bottom, 10 mm side
Housing material	Aluminum
Shock resistance	30 g 6 ms, 20 g 11 ms, 3 shocks/direction, 18 shocks in total, IEC60068-2-27
Vibration resistance	5 – 17.8 Hz: ±1.6 mm, 17.8 – 500 Hz: 2 g 2 hours/axes X,Y,Z, IEC 60068-2-6
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Vertical
Degree of protection	IP20 (IEC 529 / EN 60529)
Protection class	I
Over voltage category	III
Degree of pollution	2
Connection type	Screw terminal
	Input
	0.20 mm² – 4.0 mm²
	Output
	0.20 mm² – 35.0 mm²
	Auxiliary
	0.20 mm² – 1.5 mm²
Certifications	CE
	UKCA
	cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
722817	CPSB3-2400-72	DC 72 V/30 A	2.8	1

PIN assignment



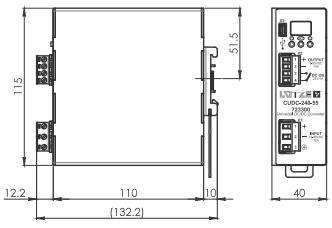
Power supply · Compact DC/DC–Converter, 240 W

Programmable DC/DC–Converter
Input: wide-range input DC 12–48 V
Output: DC 5–55 V

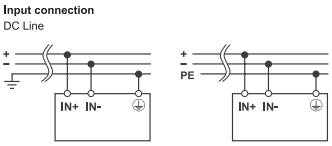
Input	
Rated voltage U_N	DC 12–48 V
Operation voltage range	DC 11–55 V
Rated current I_N	max. 12 A
Inrush current	<40 A
Internal fuse	20 A (not user replacable)
External protection	Mini-circuit breaker: C 20 A
Power factor correction P.F.C.	>0.6
Protection device Input	Overvoltage protection, > 60 V Cut-off
Reverse voltage protection	Yes
Output	
Rated voltage U_N	DC 5–55 V
Rated current I_N	10 A
Max. output current (limited current)	11 A (264 W)
Max. output current (HICCUP, 5 sec)	15 A (360 W)
Setting range $U_{out\ min.}$/$U_{out\ max.}$	DC 5–55 V
Load regulation	≤4 % @ DC 5 V ≤2 % @ DC 12 V ≤1.5 % @ ≥ DC 24 V
Ripple and noise	<200 mV
Hold up time	≥5 ms
Parallel / redundant mode	yes
Efficiency	77 % – 92 %, depending on the input/ output voltage
Power Dissipation	<28 W
Over voltage protection	120% of the output voltage
Short circuit	Current limit Hiccup Mode
Overtemperature protection	Yes
Monitoring	
DC ON Control (Rdy)	N/O contact
Switching voltage	AC/DC 24 V
Switching current	AC/DC 1 A
Switching capacity	24 W
Isolation voltage	AC 500 V
General	
Insulation voltage input / output	DC 4.2 kV
Insulation voltage input / ground	DC 2.2 kV
Insulation voltage output / ground	DC 750 V
Operation temperature range	-40 °C … +70 °C (UL approved up to +60 °C)
Derating	>60 °C: -2.4 W/°C
Storage temperature range	-40 °C … +80 °C
MTBF	>600000 h: MIL-HDBK-217F
Relative air humidity	5 – 95 % RH, non-condensing
Dimensions (w × h × d)	40.0 mm × 115.0 mm × 132.2 mm
Cooling	Air convection, 50 mm distance top/ bottom, 20 mm side
Housing material	Aluminum
Shock resistance	30 g 6 ms, 20 g 11 ms, 3 shocks/direction, 18 shocks in total, IEC60068-2-27
Vibration resistance	5 – 17.8 Hz: ±1.6 mm, 17.8 – 500 Hz: 2 g 2 hours/axes X,Y,Z, IEC 60068-2-6
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Vertical
Degree of protection	IP20 (EN 60529)
Protection class	I
Over voltage category	I (EN 70178)
Degree of pollution	2 (IEC 60664-1)
Connection type	Screw terminal 0.20 mm² – 2.5 mm² AWG 24 – AWG 12 plug-in
Certifications	CE UKCA cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
723300	CUDC-240-55	DC 5 – 55 V	0.4	1

Dimensions



PIN assignment



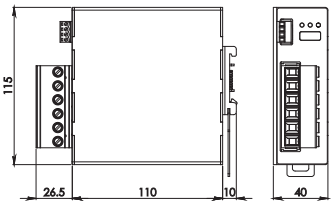
Further product information at www.luetze.com

Redundant module 12 to 85 V, 50 A
Potential-free signalling contact
Status LED per input

Input		Cooling	Air convection
No. of inputs	2	Housing material	Aluminum
Operation voltage range	DC 12–85 V	Shock resistance	30 g 6 ms, 20 g 11 ms, 3 shocks/direction, 18 shocks in total, IEC60068-2-27
Rated current I_N	max. 50 A per input	Vibration resistance	5 – 17.8 Hz: ±1.6 mm, 17.8 – 500 Hz: 2 g 2 hours/axes X,Y,Z, IEC 60068-2-6
Output		Mounting	DIN rail mountable TS35 (EN 60715)
Max. output current	300 A		
Status indication DC ON LED green	IN1, IN2 OK	Installation position	Vertical
Status indication DC ON LED red	Redundancy error	Degree of protection	IP20 (IEC 529 / EN 60529)
Power Dissipation	max. 10 W	Over voltage category	II
Over voltage protection	No	Degree of pollution	2
Voltage drop	<0.2 V	Connection type	Input
Overtemperature protection	No		Screw terminal
			plug-in
Monitoring			0.20 mm² – 16.0 mm²
DC ON Control (Rdy)	N/O contact		Output
Switching voltage	AC 300 V / DC 24 V		Screw terminal
Switching current	AC/DC 1 A		plug-in
Switching capacity	300 VA / 30 W		0.20 mm² – 16.0 mm²
Isolation voltage	DC 100 V		Relays
			Screw terminal
General			plug-in
Operation temperature range	-40 °C … +75 °C (UL approved up to +75 °C)		0.20 mm² – 1.5 mm²
Storage temperature range	-40 °C … +80 °C	Certifications	CE
Relative air humidity	5 – 95 % RH, non-condensing		UKCA
Dimensions (w × h × d)	40.0 mm × 115.0 mm × 110.0 mm		cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
722999	CPSRM50	DC 12 V–85 V/50 A	0.35	1

Dimensions



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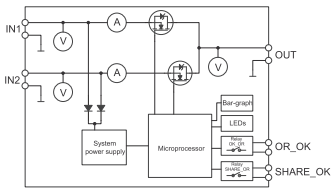


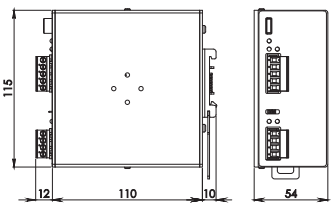
Power supply · Compact DC UPS, 240 W

Uninterrupted DC power supply
DC UPS for lead batteries
Input: DC 24 V, Output: max. DC 10 A

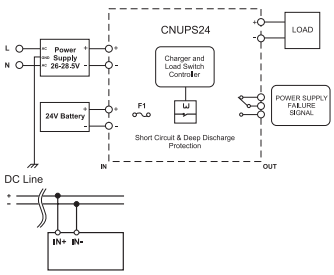
Note	
Comments	Suitable for power supply with applicable output voltage Load mode with simultaneous charging Integrated battery fuse Deep discharging protection Battery not included
Input	
Input voltage	DC 26 – 28.5 V
Input current	DC 3 – 10 A
Status display input	LED green: PS OK, LED red: Reverse polarity LED green: Battery OK, LED red: Battery low
Parameterisation	Charging current adjustable by jumper
Protection device Input	None
Energy storage	
Memory type	Chemical (lead based)
Nominal battery voltage	DC 24 V
Max. charging current	DC 2 A or DC 4 A
Max. battery capacity	75 % @ 26 V, 85 % @ 27 V, 100 % @ 28 V
Max. output current	10 A
Backup time	Depends on battery and charging current
Fuse for memory medium	Vehicle fuse 15 A / 32 V, Mini Type
Deep discharge protection	18.5 V ± 0.5 V
Output	
Rated voltage U_N	DC 24 V
Max. output current	DC 10 A
Output voltage	DC 20 - 28 V
Status indication	
Status display output	LED yellow: Load OK
Monitoring	
Switching voltage	DC 24 V
Switching current	DC 1 A
Isolation voltage	0.5 kV, 1 min.
Number of channels	1
Monitored functions	Battery mode
Contact type	Change over contact
General	
Operation temperature range	-40 °C … +70 °C (UL approved up to +60 °C)
Derating	>60 °C: -0.25 A/°C
Storage temperature range	-40 °C … +80 °C
Relative air humidity	5 – 95 % RH, non-condensing
Dimensions (w × h × d)	54.0 mm × 115.0 mm × 110.0 mm
Cooling	Free convection
Housing material	Aluminum
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Vertical, with 20 mm distance to other devices
Degree of protection	IP20 (EN 60529)
Over voltage category	II
Degree of pollution	2 (IEC 664-1)
Connection type	Connector with screws: 2.5 mm² (AWG 24–12)
Certifications	CE UKCA cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
723110	CNUPS24	max. DC 10 A	0.3	1

Dimensions



PIN assignment



Further product information at www.luetze.com

Power supply · Compact DC UPS, 480 W

Uninterrupted DC system voltage
DC UPS for lead batteries, NiMH (NiCd), Li-ION (LiFePO4)
Input: wide-range input DC 12 V, DC 24 V, output: max. DC 20 A

Note

Comments	Monitoring via LCD display Suitable for lead batteries, NI-MH, Li Digital control Battery charging current up to 5 A Output current up to 20 A Cold start automatic Configuration / monitoring also via soft-ware Remote On / Off Battery not included

Input

Input voltage	DC 12 V or 24 V
Input current	Max. DC 20 A
Status display input	See monitoring
Parameterisation	Button/LCD display Software Powermaster (free Download LUTZE web page)
Protection device Input	None
Power Dissipation	<3 W

Energy storage

Memory type	Chemical (lead based, Ni-MH / Ni-Cd, Li-ION / $LiFePo_4$)
Nominal battery voltage	DC 12 V or DC 24 V
Max. charging current	DC 5 A
Max. battery capacity	Max. 150 Ah
Max. output current	20 A, 35 A @ 5 s
Switching time on memory medium	<5 µs
Backup time	Can be configured max. up to deep discharging protection

Output

Rated voltage U_N	DC 24 V
Rated current I_N	20 A
Max. output current	DC 20 A, 35 A @ 5 s
Max. Power Dissipation (Nominal operations)	<13 W
Output voltage	DC 10 - 29 V

Status indication

Status display output	See monitoring

Monitoring

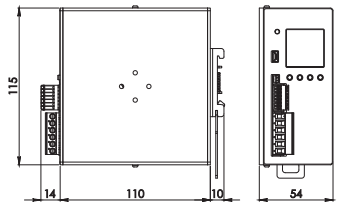
Switching voltage	30 V
Switching current	2 A
Number of channels	2
Monitored functions	Coulomb counter, battery temperature, battery operating hours, no. of charging cycles
Contact type	N/O contact

General

Insulation voltage input / ground	0.5 kV, 1 min.
Operation temperature range	-40 °C … +60 °C (UL approved up to +60 °C)
Storage temperature range	-40 °C … +80 °C
Relative air humidity	5 – 95 % RH, non-condensing
Dimensions (w × h × d)	54.0 mm × 115.0 mm × 110.0 mm
Cooling	Free convection
Housing material	Aluminum
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Vertical
Degree of protection	IP20 (EN 60529)
Over voltage category	I (EN 50178)
Degree of pollution	2 (IEC 60664-1)
Connection type	IN/Battery/Out : 6 pin connector 2.5 mm², Grid dimensions 5.08 Auxiliary: 7 pin connector 0.5 mm², Grid dimensions 2.54 Temperature sensor: 2 pin, friction lock, Grid dimensions 2 mm USB: Mini USB connector
Max. Power Dissipation (Nominal operations)	<13 W
Max. Power Dissipation (Battery mode)	<18 W
Charging efficiency	>90 %
Certifications	CE UKCA cULus (E249179)

Part No.	Type	Output voltage/current	Weight/unit kg	PU (units)
723100	CDCU20 12/24DC UPS	max. DC 20 A	0.5	1

Dimensions



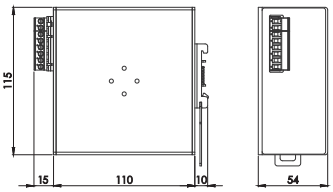
Power supply · Compact DC UPS, housing

Battery housing for two lead batteries 12 V / 1.2 Ah

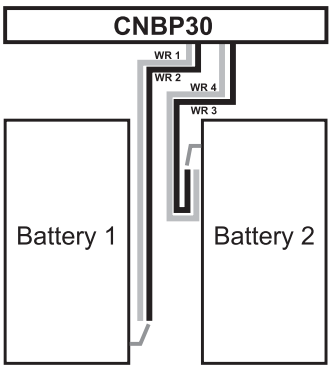
Note		Operation temperature range	-20 °C … +40 °C (or equivalent battery limit values)
Comments	Suitable for DC 12 V and DC 24 V applications, integrated self-healing fuse Batteries not included	Storage temperature range	-20 °C … +40 °C
		Relative air humidity	5 – 95 % RH, non-condensing
		Dimensions (w × h × d)	54.0 mm × 115.0 mm × 135.0 mm
Energy storage		Cooling	Free convection
Memory type	2× lead batteries DC 12 V / 1.2 Ah	Housing material	Aluminum
Max. charging current	600 mA @ DC 12 V, 300 mA @ DC 24 V	Mounting	DIN rail mountable TS35 (EN 60715)
Fuse for memory medium	15 A, automatic resetting	Installation position	Vertical, with 20 mm distance to other devices
Output		Degree of protection	IP20 (EN 60529)
Max. output current	5 A @ DC 2 V, 3 A @ DC 24 V	Over voltage category	II
		Degree of pollution	2 (IEC 664-1)
General		Connection type	Connector with screws: 2.5 mm² (AWG 24–12)
Insulation voltage input / ground	0.5 kV, 1 min.		

Part No.	Type	Configured weight max./unit kg	PU (units)
723115	CNBP30	1.2	1

Dimensions



PIN assignment



Further product information at www.luetze.com

Notes

Modular, flexible and safe: LOCC-Box / LOCC-Box-Net

The intelligent LÜTZE Overload Current Control System

Adjustable rated current
(1 A...10 A in 1 A Steps)

Adjustable characteristic
(fast- … slow acting)

“Power-ON”-effect
to switch on capacitive loads

Single or centralized fault indication

Last status memorization

Spring terminals

Single-channel version - width 8.1 mm / channel
Dual-channel version - width 4.05 mm / channel

Response time independent of temperature

Contact slots for each potential usable for jumper combs

Solid state relay with current control switching frequency up to 1 kHz

*Sky***BLUE**

Remote ON / OFF

Manual ON / OFF

Status indication “operation”, “fault”, “90% load”, “100% load” and for difference between the target and actual values at I, C"

Adjustment cover accommodates lock out tags

Flammability class
UL-94-V0; NFF I2,F2

Power distribution via direct supply or supply set

Optional remote Gateway interface

CE, UKCA conformity
cULus, URus and DNV certified

The picture shows 5 x LOCC-Box incl. supply set

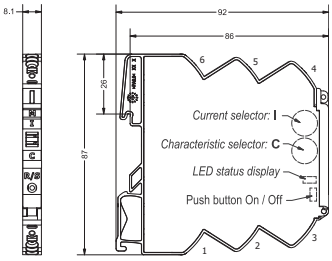
Load monitoring · LOCC-Box-M

Electronic load monitoring up to DC 8 A
Single-channel design, Adjustable current range: DC 1 A – 8 A
Adjustable characteristics, fast, medium, slow 1, -2, -3

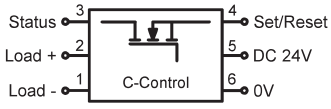
Input	
Type of function	1-channel 1 pin switching
Rated voltage U_N	DC 12/24 V
Operation voltage range	DC 10–30 V
Rated current I_N	DC 8 A
Reverse voltage protection	internal electronics
Control input (Set / Reset)	
Signal level	DC 12/24 V acc. to EN 61131
OFF	Pulse with falling edge >100 ms, <800 ms
ON	Pulse with falling edge > 1 s
Output	
Switching element	MOSFET
Output current	max. DC 8 A
Voltage drop	max. 180 mV (8 A)
Status display output	LED green: operating voltage present, no error LED red: error in load circuit
Switch-on capacity	10000 µF
Current range	1 A – 8 A (adjustable via switch)
Characteristic	fast (1), medium (2), slow 1 (3), slow 2 (4), slow 3 (5) see ‚characteristic curves‘
Signal output	
Signal level	DC 12/24 V: operating voltage on standby, no error, DC 0 V: error, output switched off or manual „OFF“
Switching element	Transistor, collector with pull-up resistance
General	
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 mm × 87.0 mm × 92.0 mm
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Color of the housing	basalt grey
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Any
MTBF	690000 h
Degree of protection	IP20
Vibration resistance	4 g acc. to EN 60068-2-6
Connection type	Push-In 0.25 mm² – 2.5 mm² AWG 24 – AWG 14
Relative air humidity	10 % – 95 %, without condensation
Shock resistance	15 g acc. EN 60068-2-27
Certifications	FCC Part 15 Class B cULus (E135145) URus (E490188)
Standards	EN 61000-6-2 EN 61000-6-4 UL 60947-5-1 UL 2367

Part No.	Type	Weight/unit kg	PU (units)
716480	LOCC-Box-M	0.06	1

Dimensions



PIN assignment



1: Load -
2: Load +
3: Status output
4: Set/Reset
5: DC +24V
6: 0V

Further product information at
www.luetze.com

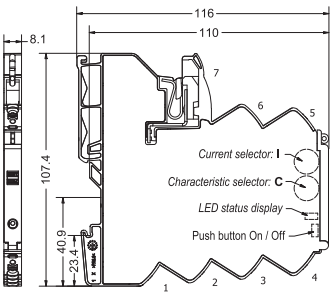
Load monitoring · LOCC-Box-FB

Electronic load monitoring up to DC 10 A
Single-channel design, Adjustable current range: DC 1 A – 10 A
Adjustable characteristics, fast, medium, slow 1, -2, -3

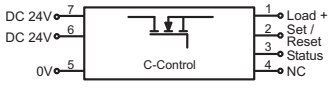
Input	
Type of function	1-channel 1 pin switching
Rated voltage U_N	DC 12/24 V
Operation voltage range	DC 10–30 V
Rated current I_N	DC 10 A
Supply current	DC 40 A over Cu-rails 10 × 3 mm
Reverse voltage protection	internal electronics
Connection type input	screwless contact slide
Control input (Set / Reset)	
Signal level	DC 12/24 V acc. to EN 61131
OFF	Pulse with falling edge >100 ms, <800 ms
ON	Pulse with falling edge > 1 s
Output	
Switching element	MOSFET
Output current	max. DC 10 A
Voltage drop	max. 215 mV (10 A)
Status display output	LED green: operating voltage present, no error LED red: error in load circuit
Switch-on capacity	10000 µF
Current range	1 A – 10 A (adjustable via switch in 1 A steps)
Characteristic	fast (1), medium (2), slow 1 (3), slow 2 (4), slow 3 (5) see ‚characteristic curves‘
Signal output	
Signal level	DC 12/24 V: operating voltage on standby, no error, DC 0 V: error, output switched off
Switching element	Transistor, collector with pull-up resistance
General	
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 mm × 107.4 mm × 116.0 mm
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Color of the housing	basalt grey
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Any
MTBF	690000 h
Degree of protection	IP20 (only as complete system with power terminal and end block)
Vibration resistance	4 g acc. to EN 60068-2-6
Connection type	Push-In 0.25 mm² – 2.5 mm² AWG 24 – AWG 14
Relative air humidity	10 % – 95 %, without condensation
Shock resistance	15 g acc. EN 60068-2-27
Certifications	cULus (E135145) URus (E490188)
Standards	EN 61000-6-2 EN 61000-6-3 UL 60947-5-1 UL 2367 DNVGL-CG-0339 Temperature Class D – not certified Humidity Class B – not certified Vibration Class B – not certified EMC Class A – not certified Enclosure Class A – not certified

Part No.	Type	Weight/unit kg	PU (units)
716400	LOCC-Box-FB 7-6400	0.07	1

Dimensions



PIN assignment



1: + Output
2: Control input (Set/Reset)
3: Status output
4: NC
5: 0V
6: + Supply (alternative)
7: + Supply

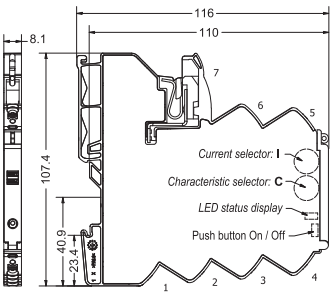
Load monitoring · LOCC-Box-FB

Electronic load monitoring up to DC 10 A
Single-channel design, Adjustable current range: DC 1 A – 10 A
Adjustable characteristics, fast, medium, slow 1, -2, -3

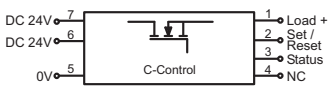
Input	
Type of function	1-channel 1 pin switching
Rated voltage U_N	DC 12/24 V
Operation voltage range	DC 10–30 V
Rated current I_N	DC 10 A
Supply current	DC 40 A over Cu-rails 10 × 3 mm
Reverse voltage protection	internal electronics
Connection type input	screwless contact slide
Control input (Set / Reset)	
Signal level	DC 12/24 V acc. to EN 61131
OFF	Pulse with falling edge >100 ms, <800 ms
ON	Pulse with falling edge > 1 s
Output	
Switching element	MOSFET
Output current	max. DC 10 A
Voltage drop	max. 215 mV (10 A)
Status display output	LED green: operating voltage present, no error LED red: error in load circuit
Switch-on capacity	10000 µF
Current range	1 A – 10 A (adjustable via switch in 1 A steps)
Characteristic	fast (1), medium (2), slow 1 (3), slow 2 (4), slow 3 (5) see ‚characteristic curves‘
Signal output	
Signal level	DC 12/24 V: operating voltage on standby, no error, DC 0 V: error, output switched off or manual „OFF“
Switching element	Transistor, collector with pull-up resistance
General	
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 mm × 107.4 mm × 116.0 mm
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Color of the housing	basalt grey
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Any
MTBF	690000 h
Degree of protection	IP20 (only as complete system with power terminal and end block)
Vibration resistance	4 g acc. to EN 60068-2-6
Connection type	Push-In 0.25 mm² – 2.5 mm² AWG 24 – AWG 14
Relative air humidity	10 % – 95 %, without condensation
Shock resistance	15 g acc. EN 60068-2-27
Certifications	cULus (E135145) URus (E490188)
Standards	EN 61000-6-2 EN 61000-6-3 UL 60947-5-1 UL 2367 DNVGL-CG-0339 Temperature Class D – not certified Humidity Class B – not certified Vibration Class B – not certified EMC Class A – not certified Enclosure Class A – not certified

Part No.	Type	Weight/unit kg	PU (units)
716401	LOCC-Box-FB 7-6401	0.07	1
716401.0050	LOCC-Box-FB 7-6401	0.07	50

Dimensions



PIN assignment



1: + Output
2: Control input (Set/Reset)
3: Status output
4: NC
5: 0V
6: + Supply (alternative)
7: + Supply

Further product information at www.luetze.com

Load monitoring · LOCC-Box-ED

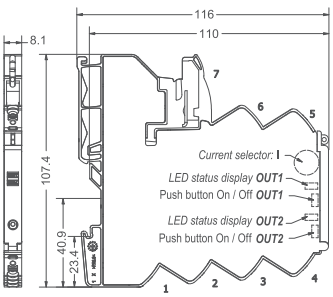
Electronic load monitoring up to DC 6 A
Two-channel version; adjustable current range: DC 1 A - 6 A
Fixed characteristic: slow-1

Input	
Type of function	2-channel 1 pin switching
Rated voltage U_N	DC 12/24 V
Operation voltage range	DC 10–30 V
Rated current I_N	DC 2 × 6 A
Supply current	**DC 40 A**
Reverse voltage protection	internal electronics
Connection type input	screwless contact slide
Output	
Amperage range	DC 2 × 6 A Total current
Switching element	MOSFET
Output current	max. DC 6 A per channel
Voltage drop	max. 115 mV (6 A, per channel)
Status display output	LED green: no error, LED green flashing: 90 % utilisation LED red flashing: triggered, LED red: unit off
Switch-on capacity	10000 µF
Current range	1 A – 6 A (adjustable via switch in 1 A steps)
Characteristic	slow 1 (3), fixed setting
Signal output	
Signal level	DC 12/24 V: operating voltage on standby, no error, DC 0 V: error, output switched off and manual „OFF“
Switching element	Transistor, collector with pull-up resistance

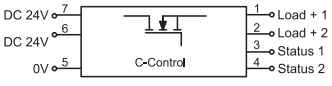
General	
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 mm × 107.4 mm × 116.0 mm
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Color of the housing	RAL 7012 basalt grey
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Any
MTBF	690000 h @ 40 °C, 100 operations button, 30 revolutions coding switch
Degree of protection	IP20 (only as complete system with power terminal and end block)
Vibration resistance	4 g acc. to EN 60068-2-6
Connection type	Push-In 0.25 mm² – 2.5 mm² AWG 24 – AWG 14
Relative air humidity	10 % – 95 %, without condensation
Shock resistance	15 g acc. EN 60068-2-27
Certifications	cULus (E135145) URus (E490188)
Standards	EN 61000-6-2 EN 61000-6-3 UL 60947-5-1 UL 2367 DNVGL-CG-0339 Humidity Class D – not certified Humidity Class B – not certified Vibration Class B – not certified EMC Class A – not certified Enclosure Class A – not certified

Part No.	Type	Weight/unit kg	PU (units)
716415.0300	LOCC-Box-ED I-C3	0.07	1

Dimensions



PIN assignment



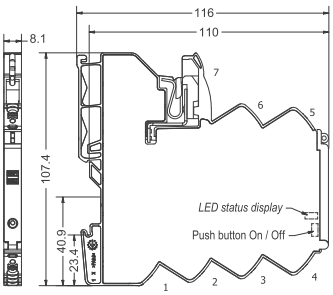
Load monitoring · LOCC-Box-EC

Electronic load monitoring up to DC 10 A
Single channel version, fixed current range: DC 1 A - 10 A (see order code)
Fixed characteristic: fast, medium, slow 1, -2, -3 (see order code)

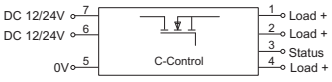
Input	
Rated voltage U_N	DC 12/24 V
Operation voltage range	DC 10–30 V
Rated current I_N	DC 10 A
Supply current	DC 40 A over Cu-rails 10 × 3 mm
Reverse voltage protection	internal electronics
Connection type input	screwless contact slide
Output	
Switching element	MOSFET
Output current	max. DC 10 A
Voltage drop	max. 215 mV (10 A)
Status display output	LED green: operating voltage present, no error LED red: error in load circuit
Switch-on capacity	10000 µF
Current range	1 A – 10 A (see order code)
Characteristic	fast (1), medium (2), slow 1 (3), slow 2 (4), slow 3 (5) (see order code), see ‚Characteristic curves'
Signal output	
Signal level	DC 12/24 V: operating voltage on standby, no error, DC 0 V: error, output switched off and manual „OFF"
Switching element	Transistor, collector with pull-up resistance
General	
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 mm × 107.4 mm × 116.0 mm
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Any
MTBF	690000 h
Degree of protection	IP20 (only as complete system with power terminal and end block)
Vibration resistance	4 g acc. to EN 60068-2-6
Connection type	Push-In 0.25 mm² – 2.5 mm² AWG 24 – AWG 14
Relative air humidity	10 % – 95 %, without condensation
Shock resistance	15 g acc. EN 60068-2-27
Certifications	cULus (E135145) URus (E490188)
Standards	EN 61000-2 EN 61000-3 UL 60947-5-1 UL 2367

Part No.	Type	Weight/unit kg	PU (units)
716407.xxxx	LOCC-Box-EC-I-C	0.07	1

Dimensions



PIN assignment



1: + Output
2: + Output
3: Status output
4: + Output
5: 0V
6: + Supply (alternative)
7: + Supply

Order code

716407. 2 3 50

Type

PU
00 1 pc.
50 50 pcs.

Current range
1 1A
2 2A
3 3A
⋮
0 10A

Characteristic
1 fast
2 medium
3 slow-1
4 slow-2
5 slow-3

Further product information at
www.luetze.com

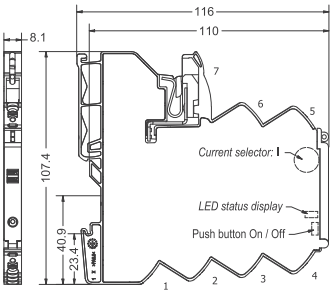
Load monitoring · LOCC-Box-EC

Electronic load monitoring up to DC 10 A
Single-channel design, Adjustable current range: DC 1 A – 10 A
Fixed characteristic: fast, medium, slow 1, -2, -3 (see order code)

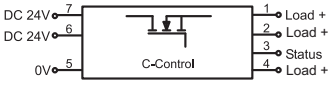
Input			
Rated voltage U_N	DC 12/24 V		
Operation voltage range	DC 10–30 V		
Rated current I_N	DC 10 A		
Supply current	DC 40 A over Cu-rails 10 × 3 mm		
Reverse voltage protection	internal electronics		
Connection type input	screwless contact slide		
Output			
Switching element	MOSFET		
Output current	max. DC 10 A		
Voltage drop	max. 215 mV (10 A)		
Status display output	LED green: operating voltage present, no error LED red: error in load circuit		
Switch-on capacity	10000 µF		
Current range	1 A – 10 A (adjustable via switch in 1 A steps)		
Characteristic	fast (1), medium (2), slow 1 (3), slow 2 (4), slow 3 (5) (see order code), see ‚Characteristic curves'		
Signal output			
Signal level	DC 12/24 V: operating voltage on standby, no error, DC 0 V: error, output switched off and manual „OFF"		
Switching element	Transistor, collector with pull-up resistance		
General			
Operation temperature range	-25 °C … +50 °C		
Storage temperature range	-40 °C … +85 °C		
Dimensions (w × h × d)	8.1 mm × 107.4 mm × 116.0 mm		
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)		
Mounting	DIN rail mountable TS35 (EN 60715)		
Installation position	Any		
MTBF	690000 h		
Degree of protection	IP20 (only as complete system with power terminal and end block)		
Connection type	Push-In 0.25 mm² – 2.5 mm² AWG 24 – AWG 14		
Certifications	cULus (E135145) URus (E490188)		
Standards	EN 61000-6-2 EN 61000-6-3 UL 60947-5-1 UL 2367		

Part No.	Type	Weight/unit kg	PU (units)
716412.xxxx	LOCC-Box-EC-I-C	0.07	1

Dimensions



PIN assignment



1: Load +
2: Load +
3: Status output
4: Load +
5: 0V
6: + Supply (alternative)
7: + Supply

Order code

716412. 03 50

Type

PU
- 00 1 pc.
- **50** 50 pcs.

Characteristic
- 01 fast
- 02 medium
- **03** slow-1
- 04 slow-2
- 05 slow-3

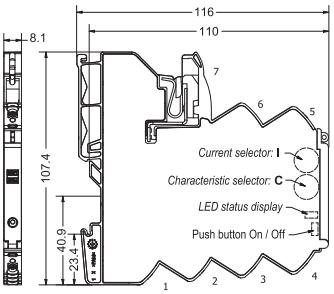
Load monitoring · LOCC-Box-C2

Electronic load monitoring up to DC 24 A - DC 4 A
Single channel version, adjustable current range, adjustable characteristic with current limitation acc. to NEC class 2

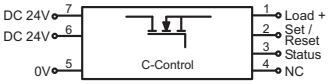
Input	
Type of function	1-channel 1 pin switching
Rated voltage U_N	DC 12/24 V
Operation voltage range	DC 11–30 V
Rated current I_N	DC 5 A
Supply current	DC 40 A over Cu-rails 10 × 3 mm
Reverse voltage protection	internal electronics
Connection type input	screwless contact slide
Control input (Set / Reset)	
Signal level	DC 12/24 V acc. to EN 61131
OFF	Pulse with falling edge >100 ms, <800 ms
ON	Pulse with falling edge > 1 s
Output	
Switching element	MOSFET
Output current	max. DC 4 A
Power output	limited to <100 W
Voltage drop	max. 275 mV (4 A)
Status display output	LED green: operating voltage present, no error LED red: error in load circuit
Switch-on capacity	4700 µF
Current range	0.5 A – 4 A (can be set via switch in 0.5 A steps)
Characteristic	fast (1), medium (2), slow 1 (3) see ‚Characteristic curves'
Current limitation	<5 A
Signal output	
Signal level	DC 24 V: operating voltage on standby, no error, DC 0 V: error, output switched off and manual „OFF"
Switching element	Transistor, collector with pull-up resistance
General	
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 mm × 107.4 mm × 116.0 mm
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Any
Degree of protection	IP20 (only as complete system with power terminal and end block)
Vibration resistance	4 g acc. to EN 60068-2-6
Connection type	Push-In 0.25 mm² – 2.5 mm² AWG 24 – AWG 14
Relative air humidity	10 – 95 % RH, brief condensation
Shock resistance	15 g acc. EN 60068-2-27
Certifications	cULus (E170585) URus (E490188)
Standards	EN 61000-6-2 EN 61000-6-3 EN 61131-2 UL 61010-1 UL 61010-2-201 UL 2367 DNVGL-CG-0339 Temperature Class C – not certified Humidity Class B – not certified Vibration Class B – not certified EMC Class A – not certified

Part No.	Type	Weight/unit kg	PU (units)
716413	LOCC-Box-C2 7-6413	0.07	1

Dimensions



PIN assignment



1: + Output
2: Control input (Set/Reset)
3: Status output
4: NC
5: 0V
6: + Supply (alternative)
7: + Supply

Further product information at www.luetze.com

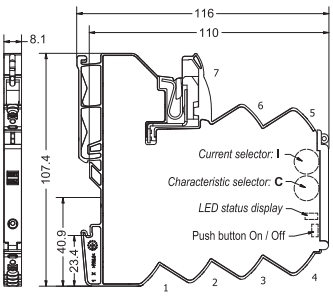
Load monitoring · LOCC-Box-FB2A

Electronic load monitoring up to DC 2 A
Single-channel design, Adjustable current range: DC 0.2 A – 2 A
Adjustable characteristics, fast, medium, slow

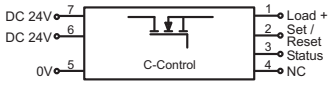
Input	
Type of function	1-channel 1 pin switching
Rated voltage U_N	DC 12/24 V
Operation voltage range	DC 10–32 V
Rated current I_N	DC 2 A
Supply current	DC 40 A over Cu-rails 10 × 3 mm
Reverse voltage protection	internal electronics
Connection type input	screwless contact slide
Control input (Set / Reset)	
Signal level	DC 12/24 V acc. to EN 61131
OFF	Pulse with falling edge >100 ms, <800 ms
ON	Pulse with falling edge > 1 s
Output	
Switching element	MOSFET
Output current	max. DC 2 A
Voltage drop	max. 145 mV (2 A)
Status display output	LED green: operating voltage present, no error LED red: error in load circuit
Switch-on capacity	10000 µF
Current range	0.2 A – 2 A (adjustable via switch in 0.2 A steps)
Characteristic	fast (1), medium (2), slow 1 (3) see ‚Characteristic curves‘
Current limitation	13.75 A
Signal output	
Signal level	DC 12/24 V: operating voltage on standby, no error, DC 0 V: error, output switched off and manual „OFF“
Switching element	Transistor, collector with pull-up resistance
General	
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 mm × 107.4 mm × 116.0 mm
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Color of the housing	basalt grey
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Any
MTBF	690000 h
Degree of protection	IP20 (only as complete system with power terminal and end block)
Vibration resistance	4 g acc. to EN 60068-2-6
Connection type	Push-In 0.25 mm² – 2.5 mm² AWG 24 – AWG 14
Relative air humidity	10 % – 95 %, without condensation
Shock resistance	15 g acc. EN 60068-2-27
Certifications	cULus (E135145)
Standards	EN 61000-6-2 EN 61000-6-3 UL 60947-5-1 DNVGL-CG-0339 Temperature Class D – not certified Humidity Class B – not certified Vibration Class B – not certified EMC Class A – not certified Enclosure Class A – not certified

Part No.	Type	Weight/unit kg	PU (units)
716409	LOCC-Box-FB2A 7-6409	0.07	1

Dimensions



PIN assignment



1: + Output
2: Control input (Set/Reset)
3: Status output
4: NC
5: 0V
6: + Supply (alternative)
7: + Supply

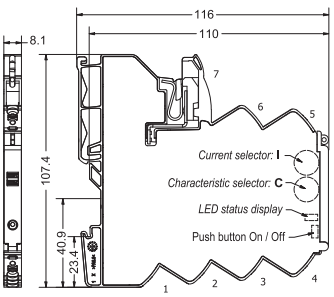
Load monitoring · LOCC-Box-FB48

Electronic load monitoring up DC 48 V to 6 A
Single-channel design, Adjustable current range: DC 1 A – 6 A
Adjustable characteristics, fast, medium, slow 1, -2, -3

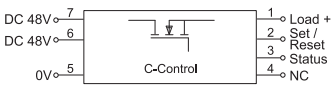
Input	
Type of function	1-channel 1 pin switching
Rated voltage U_N	DC 48 V
Operation voltage range	DC 39–58 V
Rated current I_N	DC 6 A
Supply current	DC 40 A over Cu-rails 10 × 3 mm
Reverse voltage protection	internal electronics
Connection type input	screwless contact slide
Control input (Set / Reset)	
Signal level	DC 48 V acc. to EN 61131
OFF	Pulse with falling edge >100 ms, <800 ms
ON	Pulse with falling edge > 1 s
Output	
Switching element	MOSFET
Output current	max. DC 6 A
Voltage drop	max. 310 mV (6 A)
Status display output	LED green: operating voltage present, no error LED red: error in load circuit
Switch-on capacity	1000 µF
Current range	1 A – 6 A (adjustable via switch in 1 A steps)
Characteristic	fast (1), medium (2), slow 1 (3), slow 2 (4), slow 3 (5) see ‚characteristic curves‘
Current limitation	13.75 A
Signal output	
Signal level	DC 48 V: operating voltage on standby, no error, DC 0 V: error, output switched off and manual „OFF“
Switching element	Transistor, collector with pull-up resistance
General	
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 mm × 107.4 mm × 116.0 mm
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Color of the housing	basalt grey
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Any
MTBF	690000 h
Degree of protection	IP20 (only as complete system with power terminal and end block)
Vibration resistance	4 g acc. to EN 60068-2-6
Connection type	Push-In 0.25 mm² – 2.5 mm² AWG 24 – AWG 14
Relative air humidity	10 % – 95 %, without condensation
Shock resistance	15 g acc. EN 60068-2-27
Certifications	cULus (E135145) URus (E490188)
Standards	EN 61000-6-2 EN 61000-6-3 UL 60947-5-1 UL 2367

Part No.	Type	Weight/unit kg	PU (units)
716406	LOCC-Box-FB48 7-6406	0.07	1

Dimensions



PIN assignment



1: + Output
2: Control input (Set/Reset)
3: Status output
4: not used
5: 0V
6: + Supply (alternative)
7: + Supply

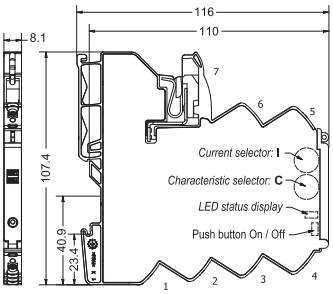
Load monitoring · LOCC-Box-Net

Electronic load monitoring up to DC 10 A, with communication, parameterized
Single-channel design, Adjustable current range: DC 1 A – 10 A
Adjustable characteristic: fast, medium, slow 1, -2, -3 (see Software)

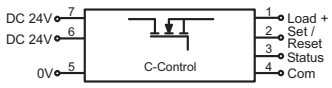
Input	
Type of function	1-channel 1 pin switching
Rated voltage U_N	DC 12/24 V
Operation voltage range	DC 10–30 V
Rated current I_N	DC 10 A
Supply current	DC 40 A over Cu-rails 10 × 3 mm
Reverse voltage protection	internal electronics
Connection type input	screwless contact slide
Control input (Set / Reset)	
Signal level	DC 12/24 V acc. to IEC 61131-2
OFF	Low level
ON	High level (automatic reset)
Output	
Switching element	MOSFET
Output current	max. DC 10 A
Voltage drop	max. 215 mV (10 A)
Status display output	LED green: operating voltage present, no error LED red: error in load circuit
Switch-on capacity	10000 µF
Current range	1 A – 10 A (adjustable via switch in 1 A steps)
Characteristic	fast (1), medium (2), slow 1 (3), slow 2 (4), slow 3 (5), can be configured (19) see ‚Characteristic curves'
Signal output	
Signal level	DC 12/24 V: operating voltage on standby, no error, DC 0 V: error, output switched off, and manual „OFF" (parameterized)
Switching element	Transistor, collector with pull-up resistance
General	
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 mm × 107.4 mm × 116.0 mm
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Color of the housing	basalt grey
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Any
MTBF	690000 h
Degree of protection	IP20 (only as complete system with power terminal and end block)
Vibration resistance	4 g acc. to EN 60068-2-6
Connection type	Push-In 0.25 mm² – 2.5 mm² AWG 24 – AWG 14
Relative air humidity	10 % – 95 %, without condensation
Shock resistance	15 g acc. EN 60068-2-27
Certifications	cULus (E135145)
Standards	EN 61000-6-2 EN 61000-6-3 UL 60947-5-1 DNVGL-CG-0339 Temperature Class D – not certified Humidity Class B – not certified Vibration Class B – not certified EMC Class A – not certified Enclosure Class A – not certified

Part No.	Type	Weight/unit kg	PU (units)
716403	LOCC-Box-Net 7-6403	0.07	1
716404	LOCC-Box-Net 7-6404	0.07	1

Dimensions



PIN assignment



1: + Output
2: Control input (Set/Reset)
3: Status output
4: 1 Wire bus (Communication)
5: 0V
6: + Supply (alternative)
7: + Supply

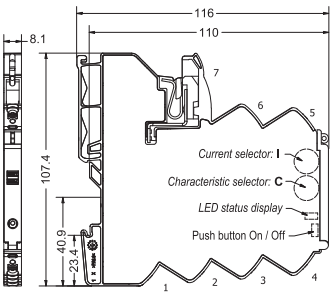
Load monitoring · LOCC-Box-Net

Electronic load monitoring up to DC 10 A, with communication
Single-channel design, programmable, Adjustable current range: DC 1 A – 10 A
Adjustable characteristics, fast, medium, slow 1, -2, -3

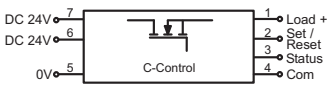
Input	
Type of function	1-channel 1 pin switching
Rated voltage U_N	DC 12/24 V
Operation voltage range	DC 10–30 V
Rated current I_N	DC 10 A
Supply current	DC 40 A over Cu-rails 10 × 3 mm
Reverse voltage protection	internal electronics
Connection type input	screwless contact slide
Control input (Set / Reset)	
Signal level	DC 12/24 V acc. to IEC 61131-2
OFF	Pulse with falling edge >100 ms, <800 ms
ON	Pulse with falling edge > 1 s
Output	
Switching element	MOSFET
Output current	max. DC 10 A
Voltage drop	max. 215 mV (10 A)
Status display output	LED green: operating voltage present, no error LED red: error in load circuit
Switch-on capacity	10000 µF
Current range	1 A – 10 A (adjustable via switch in 1 A steps)
Characteristic	fast (1), medium (2), slow 1 (3), slow 2 (4), slow 3 (5), can be configured (19) see ‚Characteristic curves‘
Signal output	
Signal level	DC 12/24 V: operating voltage on standby, no error, DC 0 V: error, output switched off or manual „OFF“
Switching element	Transistor, collector with pull-up resistance
General	
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 mm × 107.4 mm × 116.0 mm
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Color of the housing	basalt grey
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Any
MTBF	690000 h
Degree of protection	IP20 (only as complete system with power terminal and end block)
Vibration resistance	4 g acc. to EN 60068-2-6
Connection type	Push-In 0.25 mm² – 2.5 mm² AWG 24 – AWG 14
Relative air humidity	10 % – 95 %, without condensation
Shock resistance	15 g acc. EN 60068-2-27
Certifications	cULus (E135145) URus (E490188)
Standards	EN 61000-6-2 EN 61000-6-3 UL 60947-5-1 UL 2367 DNVGL-CG-0339 Temperature Class D – not certified Humidity Class B – not certified Vibration Class B – not certified EMC Class A – not certified Enclosure Class A – not certified

Part No.	Type	Weight/unit kg	PU (units)
716410	LOCC-Box-Net 7-6410	0.07	1
716410.0050	LOCC-Box-Net 7-6410	0.07	50

Dimensions



PIN assignment



1: + Output
2: Control input (Set/Reset)
3: Status output
4: 1 Wire bus (Communication)
5: 0V
6: + Supply (alternative)
7: + Supply

Further product information at www.luetze.com

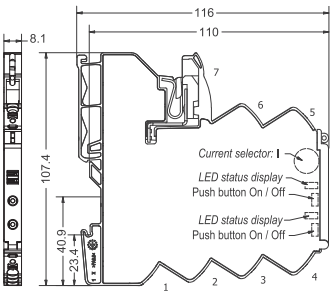
Load monitoring · LOCC-Box-EDNet

Electronic load monitoring up to DC 6 A, with communication
Two-channel version; adjustable current range: DC 1 A - 6 A
Fixed characteristic: slow-1 (C3)

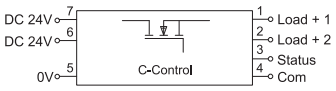
Input		Storage temperature range	-40 °C … +85 °C
Type of function	2-channel 1 pin switching	Dimensions (w × h × d)	8.1 mm × 107.4 mm × 116.0 mm
Rated voltage U_N	DC 12/24 V	Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Operation voltage range	DC 10–30 V	Color of the housing	RAL 7012 basalt grey
Rated current I_N	DC 2 × 6 A	Mounting	DIN rail mountable TS35 (EN 60715)
Supply current	**DC 40 A**	Installation position	Any
Reverse voltage protection	internal electronics	MTBF	690000 h @ 40 °C, 100 operations button, 30 revolutions coding switch
Connection type input	screwless contact slide	Degree of protection	IP20 (only as complete system with power terminal and end block)
Output		Vibration resistance	4 g acc. to EN 60068-2-6
Amperage range	DC 2 × 6 A Total current	Connection type	Push-In 0.25 mm² – 2.5 mm² AWG 24 – AWG 14
Switching element	MOSFET	Relative air humidity	10 % – 95 %, without condensation
Output current	max. DC 6 A per channel	Shock resistance	15 g 11 ms acc. to EN 60068-2- 27:2009
Voltage drop	max. 125 mV (6 A, per channel)	Certifications	cULus (E135145) URus (E490188)
Status display output	LED green: no error, LED green flas- hing: 90 % utilisation LED red flashing: triggered, LED red: unit off	Standards	EN 61000-6-2 EN 61000-6-3 UL 60947-5-1 UL 2367 DNVGL-CG-0339 Temperature Class D – not certified Humidity Class B – not certified Vibration Class B – not certified EMC Class A – not certified Enclosure Class A – not certified
Switch-on capacity	10000 µF		
Current range	1 A – 6 A (adjustable via switch in 1 A steps)		
Characteristic	slow 1 (3), fixed setting		
Signal output			
Signal level	High level: no error Low level: unit has triggered or is swit- ched off		
Switching element	Transistor, collector with pull-up resis- tance		
General			
Operation temperature range	-25 °C … +50 °C		

Part No.	Type	Weight/unit kg	PU (units)
716419.0300	LOCC-Box-EDNet I-C3	0.07	1

Dimensions



PIN assignment



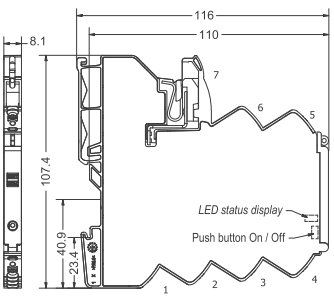
Load monitoring · LOCC-Box-Net

Electronic load monitoring up to DC 10 A, with communication, without rotary switch
Single-channel design, Adjustable current range: DC 1 A – 10 A
Adjustable characteristic: fast, medium, slow 1, -2, -3 (see Software)

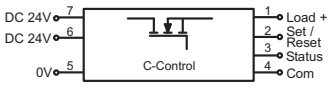
Input	
Type of function	1-channel 1 pin switching
Rated voltage U_N	DC 12/24 V
Operation voltage range	DC 10–32 V
Rated current I_N	DC 10 A
Supply current	DC 40 A over Cu-rails 10 × 3 mm
Reverse voltage protection	internal electronics
Connection type input	screwless contact slide
Control input (Set / Reset)	
Signal level	DC 12/24 V acc. to IEC 61131-2
OFF	Pulse with falling edge >100 ms, <800 ms
ON	Pulse with falling edge > 1 s
Output	
Switching element	MOSFET
Output current	max. DC 10 A
Voltage drop	max. 215 mV (10 A)
Status display output	LED green: operating voltage present, no error LED red: error in load circuit
Switch-on capacity	10000 µF
Current range	1 A – 10 A (adjustable via software, EtherCAT, Profibus, CANopen)
Characteristic	fast (1), medium (2), slow 1 (3), slow 2 (4), slow 3 (5), (adjustable via software, EtherCAT, Profibus, CANopen), see ‚characteristic curves'
Signal output	
Signal level	DC 12/24 V: operating voltage on standby, no error, DC 0 V: error, output switched off, and manual „OFF" (parameterized)
Switching element	Transistor, collector with pull-up resistance
General	
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 mm × 107.4 mm × 116.0 mm
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Color of the housing	basalt grey
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Any
MTBF	690000 h
Degree of protection	IP20 (only as complete system with power terminal and end block)
Vibration resistance	4 g acc. to EN 60068-2-6
Connection type	Push-In 0.25 mm² – 2.5 mm² AWG 24 – AWG 14
Relative air humidity	10 % – 95 %, without condensation
Shock resistance	15 g acc. EN 60068-2-27
Certifications	cULus (E135145)
Standards	EN 61000-6-2 EN 61000-6-3 UL 60947-5-1 DNVGL-CG-0339 Temperature Class D – not certified Humidity Class B – not certified Vibration Class B – not certified EMC Class A – not certified Enclosure Class A – not certified

Part No.	Type	Weight/unit kg	PU (units)
716411	LOCC-Box-Net 7-6411	0.07	1

Dimensions



PIN assignment



1: + Output
2: Control input (Set/Reset)
3: Status output
4: 1 Wire bus (Communication)
5: 0V
6: + Supply (alternative)
7: + Supply

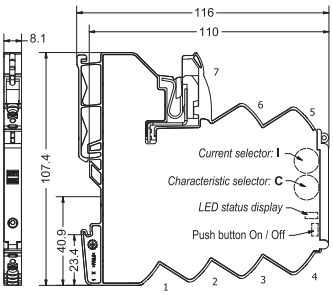
Load monitoring · LOCC-Box-C2 NET

Electronic load monitoring up to DC 24 A - DC 4 A, with communication
Single channel version, adjustable current range, adjustable characteristic with current limitation acc. to NEC class 2

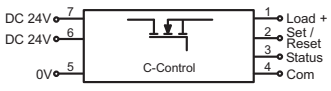
Input	
Type of function	1-channel 1 pin switching
Rated voltage U_N	DC 12/24 V
Operation voltage range	DC 11–30 V
Rated current I_N	DC 5 A
Supply current	DC 40 A over Cu-rails 10 × 3 mm
Reverse voltage protection	internal electronics
Connection type input	screwless contact slide
Control input (Set / Reset)	
Signal level	DC 12/24 V acc. to IEC 61131-2
OFF	Pulse with falling edge >100 ms, <800 ms
ON	Pulse with falling edge > 1 s
Output	
Switching element	MOSFET
Output current	max. DC 4 A
Power output	limited to <100 W
Voltage drop	max. 275 mV (4 A)
Status display output	LED green: operating voltage present, no error LED red: error in load circuit
Switch-on capacity	4700 µF
Current range	0.5 A – 4 A (can be set via switch in 0.5 A steps)
Characteristic	fast (1), medium (2), slow 1 (3) see ‚Characteristic curves'
Current limitation	<5 A
Signal output	
Signal level	DC 24 V: operating voltage on standby, no error, DC 0 V: error, output switched off and manual „OFF"
Switching element	Transistor, collector with pull-up resistance
General	
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 mm × 107.4 mm × 116.0 mm
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Color of the housing	basalt grey
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Any
MTBF	690000 h
Degree of protection	IP20 (only as complete system with power terminal and end block)
Vibration resistance	4 g acc. to EN 60068-2-6
Connection type	Push-In 0.25 mm² – 2.5 mm² AWG 24 – AWG 14
Relative air humidity	10 – 95 % RH, brief condensation
Shock resistance	15 g acc. EN 60068-2-27
Certifications	cULus (E170585) URus (E490188)
Standards	EN 61000-6-2 EN 61000-6-3 EN 61131-2 UL 61010-1 UL 61010-2-201 UL 2367 DNVGL-CG-0339 Humidity Class D – not certified Temperature Class C – not certified Vibration Class B – not certified EMC Class A – not certified

Part No.	Type	Weight/unit kg	PU (units)
716414	LOCC-Box-C2 NET 7-6414	0.07	1

Dimensions



PIN assignment



1: + Output
2: Control input (Set/Reset)
3: Status output
4: 1 Wire bus (Communication)
5: 0V
6: + Supply (alternative)
7: + Supply

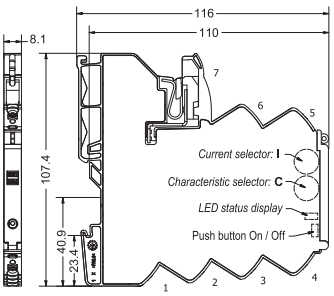
Load monitoring · LOCC-Box-NET-SC

Electronic load monitoring up to DC 5 A, with communication
Single-channel design, Adjustable current range: DC 1 A – 5 A
Adjustable characteristics, fast, medium-speed, slow 1

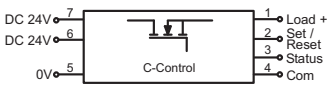
Input	
Type of function	1-channel 1 pin switching
Rated voltage U_N	DC 12/24 V
Operation voltage range	DC 10–30 V
Rated current I_N	DC 5 A
Supply current	DC 40 A over Cu-rails 10 × 3 mm
Reverse voltage protection	internal electronics
Connection type input	screwless contact slide
Control input (Set / Reset)	
Signal level	DC 12/24 V acc. to EN 61131
OFF	Pulse with falling edge >100 ms, <800 ms
ON	Pulse with falling edge > 1 s
Output	
Switching element	MOSFET
Output current	max. DC 5 A
Voltage drop	max. 90 mV (5 A)
Status display output	LED green: operating voltage present, no error LED red: error in load circuit
Switch-on capacity	Optional
Current range	1 A – 5 A (adjustable via switch in 1 A steps)
Characteristic	fast (1), medium (2), slow 1 (3) see ‚Characteristic curves‘
Signal output	
Signal level	DC 12/24 V: operating voltage on standby, no error, DC 0 V: error, output switched off, and manual „OFF“ (parameterized)
Switching element	Transistor, collector with pull-up resistance
General	
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 mm × 107.4 mm × 116.0 mm
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Color of the housing	basalt grey
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	Any
MTBF	690000 h
Degree of protection	IP20 (only as complete system with power terminal and end block)
Vibration resistance	4 g acc. to EN 60068-2-6
Connection type	Push-In 0.25 mm² – 2.5 mm² AWG 24 – AWG 14
Relative air humidity	10 % – 95 %, without condensation
Shock resistance	15 g acc. EN 60068-2-27
Certifications	cULus (E135145) URus (E490188)
Standards	EN 61000-6-2 EN 61000-6-3 UL 60947-5-1 UL 2367 DNVGL-CG-0339 Temperature Class D – not certified Humidity Class B – not certified Vibration Class B – not certified EMC Class A – not certified Enclosure Class A – not certified

Part No.	Type	Weight/unit kg	PU (units)
716418	LOCC-Box-Net-SC 7-6418	0.07	1

Dimensions



PIN assignment



1: + Output
2: Control input (Set/Reset)
3: Status output
4: 1 Wire bus (Communication)
5: 0V
6: + Supply (alternative)
7: + Supply

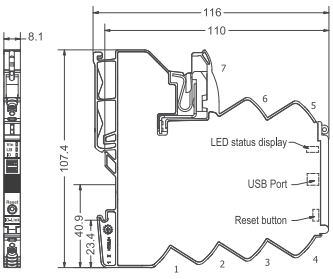
IO-Link Gateway for LOCC-Box-Net · LOCC-Box-GWIO 7-6455

Gateway for LOCC-Box-Net versions
Input: LOCCbus (LIN)
Output: IO-Link

Input		Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Bus system	LOCCbus, base LIN	Mounting	DIN rail mountable TS35 (EN 60715)
Access method	Single-Master – Multiple Slave max. 15 functional assemblies	Installation position	Any
Bus technology	Line	Degree of protection	IP20 (only as complete system with power terminal and end block)
Physical level	1-wire		
Data rate	8 Bit + fixed parity (Bit 9)	Vibration resistance	1 g acc. to EN 60068-2-6
Transfer protocol	Modified multi-drop	Connection type	Push-In spring connection
Reverse voltage protection	Yes		0.25 mm² – 2.5 mm² AWG 24 – AWG 14
Output		Relative air humidity	max. 90 % not condensing
Bus system	IO-Link	Shock resistance	15 g acc. EN 60068-2-27
Transfer rate	38.4 kBaud	Certifications	cULus (E170585)
Interface	IO-Link Device	Standards	EN 61000-6-2
			EN 61000-6-4
General			EN 61010-1
Rated voltage U_N	DC 12/24 V		EN IEC 61010-2-201
Rated current	80 mA @ 24 V		UL 61010-1
Operation temperature range	-25 °C … +50 °C		UL 61010-2-201
Storage temperature range	-40 °C … +85 °C		CFR 47 Part 15 Subpart B
Dimensions (w × h × d)	8.1 mm × 114.5 mm × 116.0 mm	Comments	

Part No.	Type	Weight/unit kg	PU (units)
716455	LOCC-Box-GWIO 7-6455	0.105	1

Dimensions



PIN assignment

PIN	Signal
1	IO Link (L-)
2	IO Link (C/Q)
3	IO Link (L+)
4	Communication (LIN)
5	0V GND
6	DC + 24V
7	DC + 24V

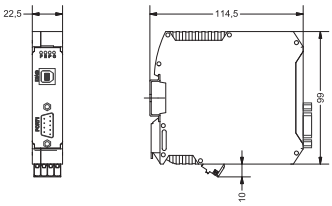
Load monitoring · LOCC-Box-GWPB

Gateway for LOCC-Box-Net versions
Input: LOCCbus (LIN)
Output: USB, PROFIBUS-DP

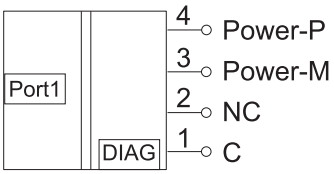
Input			via PROFIBUS-DP
Bus system	LOCCbus, base LIN		LED E, red - different flash codes for diagnosis of PROFIBUS-DP faults
Access method	Single-Master - Multiple Slave		LED P, green - on: operating voltage is supplied (POWER)
Bus technology	Line		LED C, green - flashing: data traffic with LOCC-Box-Net modules (LOCCbus)
Physical level	1-wire		
Transfer rate	9600 Baud		
Data rate	8 Bit + fixed parity (Bit 9)		
Transfer protocol	Modified multi-drop	Operation temperature range	-25 °C … +50 °C
Operation voltage range	10-32 V	Storage temperature range	-40 °C … +85 °C
Reverse voltage protection	Yes	Dimensions (w × h × d)	22.5 mm × 99.0 mm × 114.5 mm
		Housing material	PA 6.6 (UL 94 V-0)
Output		Mounting	DIN rail mountable TS35 (EN 60715)
Bus system	USB 2.0 Full-Speed, PROFIBUS-DP		
Transfer rate	USB: 12 Mbit/s PROFIBUS-DP: max. 12 Mbit/s	Installation position	Any
		Degree of protection	IP20
Interface	USB: USB connector, Type B PROFIBUS-DP: Port_1, SUB-D 9-pin with galvanic isolation	Connection type	Spring terminal 0.14 mm² – 2.5 mm² (with ferrule 1.5 mm²)
		Relative air humidity	max. 90 % not condensing
General		Shock resistance	15 g acc. EN 60068-2-27
Rated voltage U_N	DC 12/24 V	Standards	EN 61000-6-2 EN 61000-6-4
Rated current	120 mA @ 24 V		
Status indication	LED D, green - shines: data exchange	Comments	Screw terminal on request

Part No.	Type	Weight/unit kg	PU (units)
716458	LOCC-Box-GWPB 0-6458	0.13	1

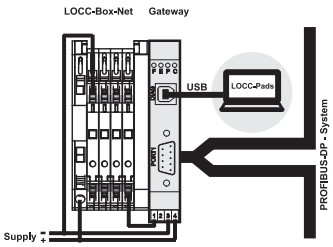
Dimensions



PIN assignment



Use



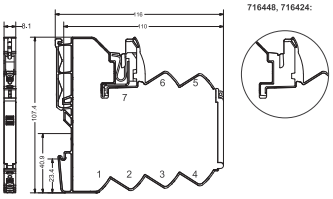
Further product information at
www.luetze.com

24 V - Distribution terminal
Single-channel design
maximum total current 10 A

Input			(EN 60715)
Rated voltage U_N	DC 12/24/48 V	Degree of protection	IP20 (only as complete system with power terminal and end block)
Rated current I_N	max. DC 10 A		
Reverse voltage protection	No	Installation position	Any
Connection type input	Push-In	Operation temperature range	-25 °C … +50 °C
	0.25 mm² – 2.5 mm²	Storage temperature range	-40 °C … +85 °C
	AWG 23 – AWG 14	Dimensions (w × h × d)	8.1 mm × 107.4 mm × 116.0 mm
Connection	1 – 4	Certifications	cULus (E135145)
Conductor connection cross section		Standards	EN 60947-1
			EN 60947-5-1
General			UL 60947-5-1
Connection type	Push-In		DNVGL-CG-0339
	0.25 mm² – 2.5 mm²		Temperature Class D – not certified
	AWG 24 – AWG 14		Humidity Class B – not certified
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)		Vibration Class B – not certified
Mounting	DIN rail mountable TS35		Enclosure Class A – not certified

Part No.	Type	Weight/unit kg	PU (units)
716448	LOCC-Box-VKL 7-6448	0.102	2

Dimensions



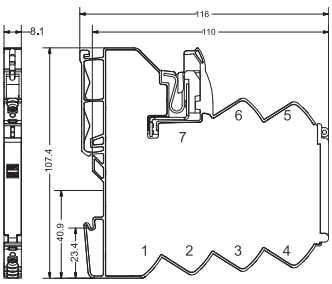
PIN assignment

LOCC-Box 0V Collective Terminal
Single-channel design
maximum total current 40 A

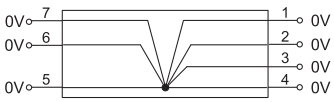
Input			(EN 60715)
Rated voltage U_N	DC 12/24 V	Degree of protection	IP20 (only as complete system with power terminal and end block)
Rated current I_N	6 × max. DC 10 A		
Reverse voltage protection	No	Installation position	Any
Connection type input	screwless contact slide	Operation temperature range	-25 °C … +50 °C
Conductor connection cross section		Storage temperature range	-40 °C … +85 °C
		Dimensions (w × h × d)	8.1 mm × 107.4 mm × 116.0 mm
Output		Certifications	cULus (E135145)
Output current	max. DC 40 A	Standards	EN 60947-1
Connection type output			EN 60947-5-1
			UL 60947-5-1
General			DNVGL-CG-0339
Connection type	Push-In		Temperature Class D – not certified
	0.25 mm² – 2.5 mm²		Humidity Class B – not certified
	AWG 24 – AWG 14		Vibration Class B – not certified
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)		Enclosure Class A – not certified
Mounting	DIN rail mountable TS35		

Part No.	Type	Weight/unit kg	PU (units)
716420	LOCC-Box-SK 7-6420	0.102	2

Dimensions



PIN assignment

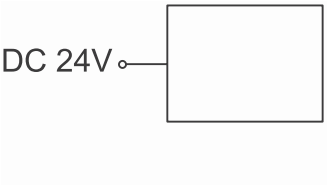


LOCC-Box supply set
consisting of supply terminal and end block
maximum total current 40 A (UL: 35 A)

Input			AWG 22 – AWG 7
Rated voltage U_N	DC 12/24/48 V		fine stranded wire with ferrule
Rated current I_N	max. DC 40 A		finely stranded, ferrule with plastic collar
Reverse voltage protection	No		0.5 mm² – 6 mm²
Connection type input	Push-In		AWG 22 – AWG 9
	0.5 mm² – 10 mm²		UL Values
	UL Values/stranded		AWG 14 – AWG 8
	AWG 14 – AWG 8	Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Conductor connection cross section	single-wire: max. 10 mm²	Mounting	DIN rail mountable TS35
	finely stranded: max 10 mm²	Degree of protection	IP20 (only as complete system with power terminal and end block)
	finely stranded with AEH: max 6 mm²		
Strip length	**13 mm**	Installation position	Any
		Operation temperature range	-25 °C … +50 °C
Output		Storage temperature range	-40 °C … +85 °C
Rated voltage U_N	DC 12/24/48 V	Dimensions (w × h × d)	10.0 mm × 110.0 mm × 62.0 mm
Output current	max. DC 40 A	Certifications	cULus (E135145)
Connection type output	screwless contact slide	Standards	UL 60947-5-1
Copper bus bar	3 × 10mm		DNVGL-CG-0339
			Temperature Class D – not certified
General			Humidity Class B – not certified
Connection type	Push-In		Vibration Class B – not certified
	single wire/fine wire		Enclosure Class A – not certified
	0.50 mm² – 10.0 mm²		

Part No.	Type	Weight/unit kg	PU (units)
716425	LOCC-Box-ES 7-6425	0.07	1

PIN assignment

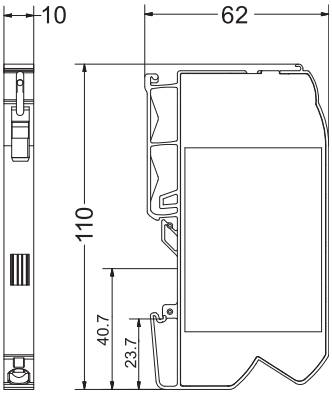


LOCC-Box supply terminal
maximum total current 40 A (UL: 35 A)

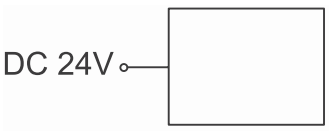
Input	
Rated voltage U_N	DC 12/24/48 V
Rated current I_N	max. DC 40 A
Reverse voltage protection	No
Connection type input	Push-In
	0.5 mm² – 10 mm²
	UL Values/stranded
	AWG 14 – AWG 8
Conductor connection cross section	single-wire: max. 10 mm²
	finely stranded: max 10 mm²
	finely stranded with AEH: max 6 mm²
Strip length	**13 mm**
Output	
Rated voltage U_N	DC 12/24/48 V
Output current	max. DC 40 A
Connection type output	screwless contact slide
Copper bus bar	3 × 10mm
General	
Connection type	Push-In
	single wire/fine wire
	0.50 mm² – 10.0 mm²
	AWG 22 – AWG 7
	fine stranded wire with ferrule
	finely stranded, ferrule with plastic collar
	0.5 mm² – 6 mm²
	AWG 22 – AWG 9
	UL Values
	AWG 14 – AWG 8
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	DIN rail mountable TS35 (EN 60715)
Degree of protection	IP20 (only as complete system with power terminal and end block)
Installation position	Any
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	10.0 mm × 110.0 mm × 62.0 mm
Certifications	cULus (E135145)
Standards	UL 60947-5-1
	DNVGL-CG-0339
	Temperature Class D – not certified
	Humidity Class B – not certified
	Vibration Class B – not certified
	Enclosure Class A – not certified

Part No.	Type	Weight/unit kg	PU (units)
716435	LOCC-Box-EKL 7-6435	0.035	2

Dimensions



PIN assignment

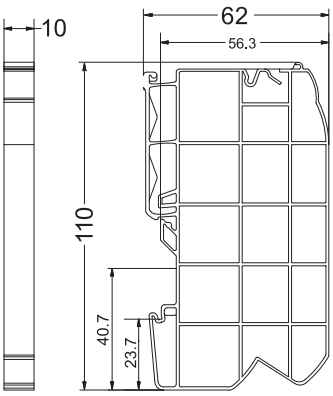


LOCC-Box end block

General			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)	Dimensions (w × h × d)	10.0 mm × 110.0 mm × 62.0 mm
Mounting	DIN rail mountable TS35 (EN 60715)	Certifications	cULus (E135145)
		Standards	UL 60947-5-1
			DNVGL-CG-0339
Degree of protection	IP20 (only as complete system with power terminal and end block)		Temperature Class D – not certified Humidity Class B – not certified
Installation position	Any		Vibration Class B – not certified
Operation temperature range	-25 °C … +50 °C		Enclosure Class A – not certified
Storage temperature range	-40 °C … +85 °C		

Part No.	Type	Weight/unit kg	PU (units)
716436	LOCC-Box-EB 7-6436	0.01	2

Dimensions

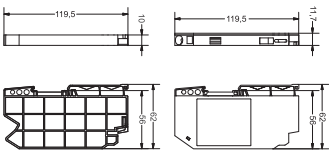


LOCC-Box supply set 16 mm²
consisting of supply terminal and end block
maximum total current 40 A (UL: 35 A)

Input	
Rated voltage U_N	DC 12/24/48 V
Rated current I_N	max. DC 40 A
Reverse voltage protection	No
Connection type input	Spring terminal
Conductor connection cross section	0.33 mm² – 16 mm² AWG 22 – AWG 6 single-wire: max. 16 mm² finely stranded: max 10 mm² finely stranded with AEH: max 10 mm²
Strip length	18 mm
Output	
Rated voltage U_N	DC 12/24/48 V
Output current	max. DC 40 A
Connection type output	screwless contact slide
Copper bus bar	3 × 10mm
General	
Connection type	Spring terminal single wire/fine wire 1.50 mm² – 16 mm² AWG 16 – AWG 5 fine stranded wire with ferrule finely stranded, ferrule with plastic collar 1.5 mm² – 10 mm² AWG 16 – AWG 7
	UL Values AWG 14 – AWG 6
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	DIN rail mountable TS35 (EN 60715)
Degree of protection	IP20 (only as complete system with power terminal and end block)
Installation position	Any
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	11.7 mm × 119.5 mm × 62.0 mm 10.0 × 119.5 × 62.0 mm
Certifications	cULus (E135145)
Standards	UL 60947-5-1 DNVGL-CG-0339 Temperature Class D – not certified Humidity Class B – not certified Vibration Class B – not certified Enclosure Class A – not certified

Part No.	Type	Weight/unit kg	PU (units)
716447	LOCC-Box-ES16 7-6447	0.045	1

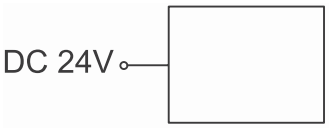
Dimensions



DE Endblock
EN *End block*
FR *Bloc d'extrémité*

DE Einspeiseklemme
EN *Supply terminal*
FR *Borne d'alimentation*

PIN assignment

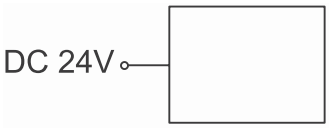


LOCC-Box supply terminal and
LOCC-Box supply terminal for power distribution
maximum total current 40 A (set) (UL: 35 A)

Input			fine stranded wire with ferrule
Rated voltage U_N	DC 12/24/48 V		finely stranded, ferrule with plastic collar
Rated current I_N	max. DC 40 A		0.5 mm² – 6 mm²
Reverse voltage protection	No		AWG 22 – AWG 9
Connection type input	Push-In		UL Values
	0.5 mm² – 10 mm²		AWG 14 – AWG 8
	UL Values/stranded	Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
	AWG 14 – AWG 8	Mounting	DIN rail mountable TS35 (EN 60715)
Conductor connection cross section	single-wire: max. 10 mm²		
	finely stranded: max 10 mm²	Degree of protection	IP20 (only as complete system with power terminal and end block)
	finely stranded with AEH: max 6 mm²		
Strip length	**13 mm**	Installation position	Any
		Operation temperature range	-25 °C … +50 °C
Output		Storage temperature range	-40 °C … +85 °C
Rated voltage U_N	DC 12/24/48 V	Dimensions (w × h × d)	10.0 mm × 110.0 mm × 62.0 mm
Output current	max. DC 40 A	Certifications	cULus (E135145)
Connection type output	screwless contact slide	Standards	UL 60947-5-1
Copper bus bar	3 × 10mm		DNVGL-CG-0339
			Temperature Class D – not certified
General			Humidity Class B – not certified
Connection type	Push-In		Vibration Class B – not certified
	single wire/fine wire		Enclosure Class A – not certified
	0.50 mm² – 10.0 mm²		
	AWG 22 – AWG 7		

Part No.	Type	Weight/unit kg	PU (units)
716437	LOCC-Box-ES 7-6437	0.07	1

PIN assignment

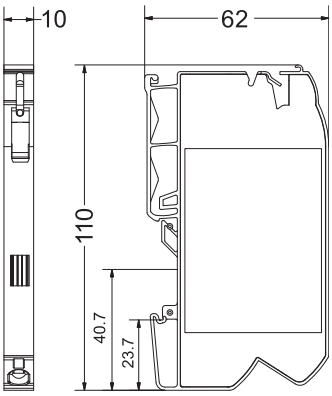


LOCC-Box supply terminal
Additional supply terminal for increased current
maximum total current 40 A (UL: 35 A)

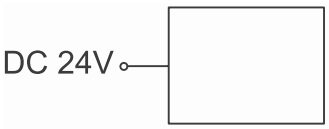
Input			fine stranded wire with ferrule
Rated current I_N	max. DC 40 A		finely stranded, ferrule with plastic collar
Reverse voltage protection	No		0.5 mm² – 6 mm²
Connection type input	Push-In		AWG 22 – AWG 9
	0.5 mm² – 10 mm²		UL Values
	UL Values/stranded		AWG 14 – AWG 8
	AWG 14 – AWG 8	Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Conductor connection cross section	single-wire: max. 10 mm²	Mounting	DIN rail mountable TS35 (EN 60715)
	finely stranded: max 10 mm²		
	finely stranded with AEH: max 6 mm²		
Strip length	**13 mm**	Degree of protection	IP20 (only as complete system with power terminal and end block)
Output		Installation position	Any
Rated voltage U_N	DC 12/24 V	Operation temperature range	-25 °C … +50 °C
Output current	max. DC 40 A	Storage temperature range	-40 °C … +85 °C
Connection type output	screwless contact slide	Dimensions (w × h × d)	10.0 mm × 110.0 mm × 62.0 mm
Copper bus bar	3 × 10mm	Certifications	cULus (E135145)
		Standards	UL 60947-5-1
General			DNVGL-CG-0339
Connection type	Push-In		Temperature Class D – not certified
	single wire/fine wire		Humidity Class B – not certified
	0.50 mm² – 10.0 mm²		Vibration Class B – not certified
	AWG 22 – AWG 7		Enclosure Class A – not certified

Part No.	Type	Weight/unit kg	PU (units)
716421	LOCC-Box-EKL 7-6421	0.035	2

Dimensions



PIN assignment

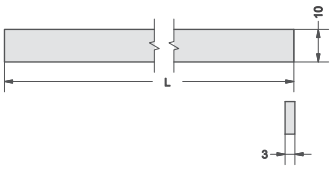


Copper bus bar, tin-plated
Various lengths
Height × Depth: 10 × 3 mm

General		
Material	Cu, tin-plated surface	Temperature Class D – not certified
Operation temperature range	-25 °C … +50 °C	Humidity Class B – not certified
Storage temperature range	-40 °C … +80 °C	Vibration Class B – not certified
Standards	DNVGL-CG-0339	Enclosure Class A – not certified

Part No.	Type	Design	Dimensions (L×H×T)	Weight/unit kg	PU (units)
716426	LOCC-Box-CU 7-6426	Rod 1000 mm	1000.0 × 10.0 × 3.0 mm	0.265	1
716426.004.2	LOCC-Box-CU 7-6426.004.2	Rod 50.4 mm	50.4 × 10.0 × 3.0 mm	0.013	10
716426.008.2	LOCC-Box-CU 7-6426.008.2	Rod 82.8 mm	82.8 × 10.0 × 3.0 mm	0.022	10
716426.016.2	LOCC-Box-CU 7-6426.016.2	Rod 147.6 mm	147.6 × 10.0 × 3.0 mm	0.039	10
716426.032.1	LOCC-Box-CU 7-6426.004.2	Rod 277.2 mm	277.2 × 10.0 × 3.0 mm	0.074	1
716426.064.1	LOCC-Box-CU 7-6426.064.1	Rod 536.4 mm	536.4 × 10.0 × 3.0 mm	0.142	1

Dimensions



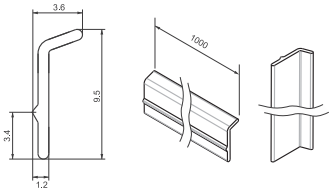
	L [mm]	Modules	VE / PU
716426.004.2	50.4	4	10
716426.008.2	82.8	8	10
716426.016.2	147.6	16	10
716426.032.1	277.2	32	1
716426.064.1	536.4	64	1
716426	1000.0	-	1

Cover, copper rail, Length 1 m

General			
Design	Rod 1000 mm	Operation temperature range	-25 °C … +50 °C
Material	ABS halogen-free	Storage temperature range	-40 °C … +80 °C
Color	grey	Dimensions (L×H×T)	1000.0 × 10.0 × 3.0 mm

Part No.	Type	Weight/unit kg	PU (units)
716427	LOCC-Box-AD 7-6427	0.1	1

Dimensions



Insulated jumper combs, 8-pin

Insulated jumper combs, 8-pin

General

Connection type	plug-in
Contact design	Flat contact 0.5 mm
Pin spacing	8.2 mm
Contact material	FeZn
Material	PVC hard
Flamability according to UL 94	V0
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	63.0 mm × 3.3 mm × 12.0 mm
Standards	DNVGL-CG-0339 Temperature Class D – not certified Humidity Class B – not certified Vibration Class A – not certified Enclosure Class A – not certified

Part No.	Type	Color	Weight/unit kg	PU (units)
716428	LOCC-Box-BKW 7-6428	white	0.003	5
716429	LOCC-Box-BKR 7-6429	red	0.003	5
716430	LOCC-Box-BKB 7-6430	blue	0.003	5

Insulated jumper combs, 16-pin

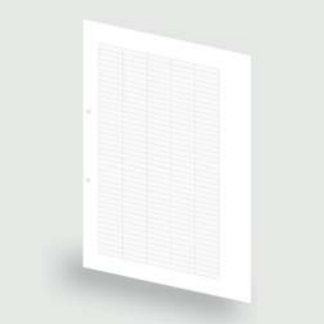
General

Connection type	plug-in
Contact design	Flat contact 0.5 mm
Pin spacing	8.3 mm
Contact material	FeZn
Material	PVC hard
Flamability according to UL 94	V0
Operation temperature range	-40 °C … +80 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	128.0 mm × 3.3 mm × 12.0 mm
Standards	DNVGL-CG-0339 Temperature Class D – not certified Humidity Class B – not certified Vibration Class A – not certified Enclosure Class A – not certified

Part No.	Type	Color	Weight/unit kg	PU (units)
716438	LOCC-Box-BKW 7-6438	white	0.006	5
716439	LOCC-Box-BKR 7-6439	red	0.006	5
716440	LOCC-Box-BKB 7-6440	blue	0.006	5

Labelling system, labelling sheets, 240 labels

Labelling system, labelling sheets, 240 labels



General

Material	Paper
Installation position	
Flamability according to UL 94	HB
Operation temperature range	-25 °C … +70 °C
Storage temperature range	-40 °C … +80 °C
Dimensions	
Dimensions (L×H×T)	30,0 × 6,0 × 0,3 mm
MTBF	690000 h
Standards	EN 60947-1

Part No.	Type	Color	Design	Weight/unit kg	PU (units)
716445	LOCC-Box-LEB 7-6445	white	DIN A 4 sheets with 240 single labels	0.0105	10

Labelling system, labelling plates 12 × 6 mm, 12 strips à 10 signs

General

Pin spacing	6 mm
Material	PA 6.6 (UL 94 V2)
Installation position	Vertical
Flamability according to UL 94	V2
Operation temperature range	-40 °C … +100 °C
Storage temperature range	-40 °C … +100 °C
Dimensions	6 × 12 mm
MTBF	690000 h
Certifications	UL 94
Standards	EN 60947-1

Part No.	Type	Color	Design	Weight/unit kg	PU (units)
716441	LOCC-Box-BZW 7-6441	white	Frame with 12 strips à 10 tabs	0.1	1

Labelling system, Tag holder 39.3×5 mm, Single signs

General

Pin spacing	7 mm
Material	PA 6.6 (UL 94 V2)
Flamability according to UL 94	V2
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions	38.2 × 8.0 × 14.7 mm
MTBF	690000 h
Standards	EN 60947-1

Part No.	Type	Color	Design	Weight/unit kg	PU (units)
716443	LOCC-Box-BZT 7-6443	white	Tag holder	0.00045	20
716444	LOCC-Box-BAD 7-6444	transparent	Cover for tag holder	0.00015	20

Notes

Intelligent current monitoring and energy management system: LCOS-CC

Flammability class
UL 94-V0

Bus coupler for all conventional systems

Adjustable characteristics

Adjustable rated current

Manual On /Off

2-channel design

2-pole disconnection

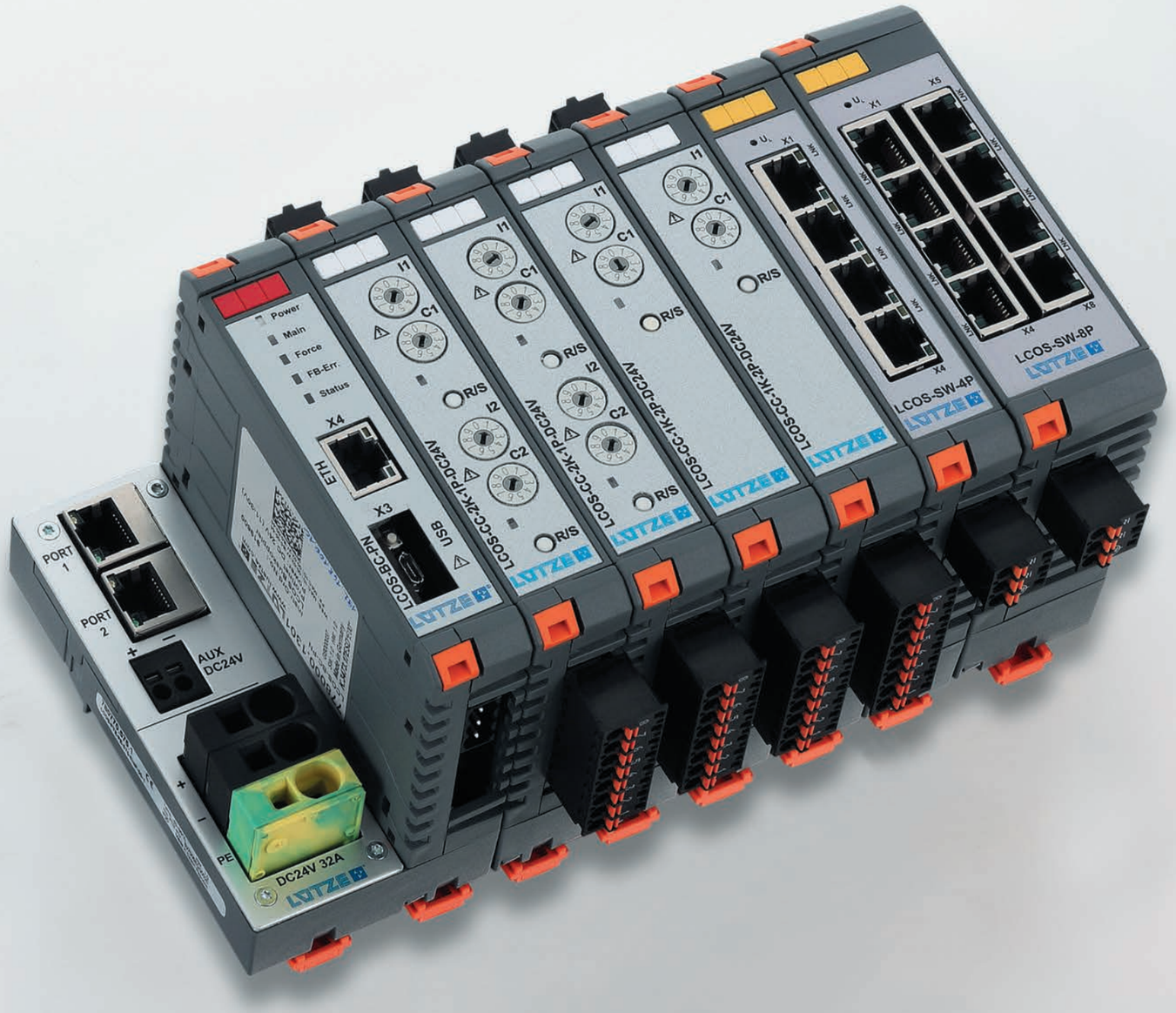
"Power ON" effect

Saving of the last status

Temperature-independent response time

Supply - also with galvanic insulation

Clear labelling



*Sky***BLUE**

Intermediate in-feed option

Status output operation
failure, manual switch-off, 90 % capacity

Remote On/Off

Modular expandable data bus

Modular expandable power bus

Integrated protection against alignment

UL508, DNV approvals

Plug-in functional assemblies

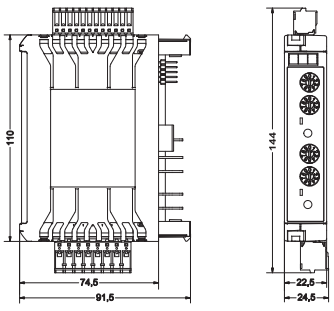
Load monitoring · LCOS CC

Electronic load monitoring up to DC 10 A
2-channel version, single pole switching, DC 1 A – DC 10 A, adjustable characteristic
Fault messages: single/collective/90% message, Remote Control input

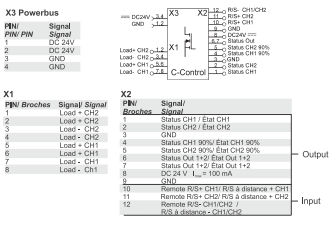
Notes and Comments	
Included in the delivery	Plug-in terminals : CS 5.08 and CS 3.50
Not included in the delivery	Function carrier and other accessories
Input	
Type of function	2-channel 1 pin switching
Rated voltage U_N	DC 24 V
Operation voltage range	DC 20.4–28.8 V
Rated current I_N	DC 10 A
Supply current	DC 16 A via LCOS Powerbus
Reverse voltage protection	internal electronics
Control input (Set / Reset)	
Signal level	DC 24 V acc. to EN 61131
OFF	Pulse with falling edge >100 ms, <800 ms
ON	Pulse with falling edge > 1 s
Connection type control side	X2: 12-pin multi-point plug, RM 3.5, Push-In
Isolation voltage	1.5 kV
Output	
Switching element	MOSFET
Output current	max. DC 10 A
Voltage drop	<170 mV (10 A)
Status display output	LED green: operating voltage ON, no fault, green flashing: 90 % I_B. LED red: OFF. Red flashing: triggered.
Switch-on capacity	>10000 µF
Current range	1 A – 10 A (adjustable via switch in 1 A steps)
Characteristic	fast (1), medium (2), slow 1 (3), slow 2 (4), slow 3 (5), adjustable via switch, see ‚characteristic curves'
Signal output	
Switching element	Transistor, open collector with pull-up resistor
Single channel message	Acc. to IEC 61131-2: High level: no errors, low level: there are errors
90 % of the rated current I_B	Acc. to IEC 61131-2: High level <90 %, low level >90 %
centralised fault signalling	Acc. to IEC 61131-2: High level: no errors, low level: there are errors
General	
Operation temperature range	0 °C … +55 °C
Storage temperature range	-40 °C … +70 °C
Dimensions (w × h × d)	22.5 mm × 110.0 mm × 102.0 mm (including function carrier, without plug-in terminals on the side)
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	plug-in on LCOS function carrier 22.5 mm (Accessories) DIN rail mounting (EN 60715)
Installation position	Any
Degree of protection	IP20 (EN 60529)
Vibration resistance	0.7 g acc. to EN 60068-2-6
Climatic conditions	Acc. to EN 60721 Stationary use at weather protected locations
Over voltage category	II
Degree of pollution	2
Connection type load side	X1: 8-pin multi-point plug, RM 5.08, RM 5,08, Push-In
Connection type control side	X2: 12-pin multi-point plug, RM 3.5, Push-In
Connection type	single wire
	0.08 mm² – 1.5 mm² / AWG 28–16
Strip length	RM 3.5: 9 mm, RM 5.08: 10 mm
Relative air humidity	10 % – 95 %, without condensation
Shock resistance	15 g acc. EN 60068-2-27
Certifications	cULus (E170585) DNV (TAA00002SY)
Standards	EN 61000-6-2 EN 61000-6-4 UL 61010-1 UL 61010-2-201 DNVGL-CG-0339

Part No.	Type	Weight/unit kg	PU (units)
779100.2111	LCOS-CC-2K-1P DC 24V	0.2	1

Dimensions



PIN assignment



Further product information at www.luetze.com

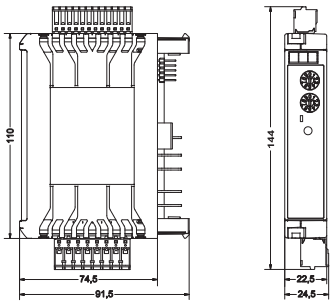
Load monitoring · LCOS CC

Electronic load monitoring up to DC 10 A
1-channel version, two-pole switching, DC 1 A – DC 10 A, adjustable characteristic
Fault messages: single/90% message, Remote Control input

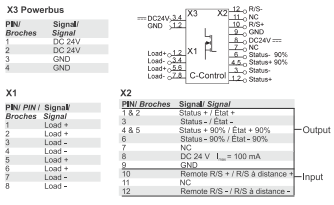
Notes and Comments		Single channel message	Contact closed: error, Contact open: no error
Included in the delivery	Plug-in terminals : CS 5.08 and CS 3.50	90 % of the rated current I_B	Contact closed: >90 %, Contact open: <90 %
Not included in the delivery	Function carrier and other accessories		
Input		**General**	
Type of function	1-channel 2 pin switching	Operation temperature range	0 °C … +55 °C
Rated voltage U_N	DC 24 V	Storage temperature range	-40 °C … +70 °C
Operation voltage range	DC 20.4–28.8 V	Dimensions (w × h × d)	22.5 mm × 110.0 mm × 102.0 mm (including function carrier, without plug-in terminals on the side)
Rated current I_N	DC 10 A		
Supply current	DC 16 A via LCOS Powerbus		
Reverse voltage protection	internal electronics	Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
		Mounting	plug-in on LCOS function carrier 22.5 mm (Accessories) DIN rail mounting (EN 60715)
Control input (Set / Reset)			
Signal level	DC 24 V acc. to EN 61131		
OFF	Pulse with falling edge >100 ms, <800 ms		
ON	Pulse with falling edge > 1 s	Installation position	Any
Connection type control side	X2: 12-pin multi-point plug, RM 3.5, Push-In	Degree of protection	IP20 (EN 60529)
		Vibration resistance	0.7 g acc. to EN 60068-2-6
Isolation voltage	1.5 kV	Climatic conditions	Acc. to EN 60721 Stationary use at weather protected locations
Output		Over voltage category	II
Switching element	MOSFET and relay (galvanic separation: 500 V)	Degree of pollution	2
		Connection type load side	X1: 8-pin multi-point plug, RM 5.08, RM 5,08, Push-In
Output current	max. DC 10 A		
Voltage drop	<170 mV (10 A)	Connection type control side	X2: 12-pin multi-point plug, RM 3.5, Push-In
Status display output	LED green: operating voltage ON, no fault, green flashing: 90 % I_B. LED red: OFF. Red flashing: triggered.	Connection type	single wire 0.08 mm² – 1.5 mm² / AWG 28–16
Switch-on capacity	>10000 µF	Strip length	RM 3.5: 9 mm, RM 5.08: 10 mm
Current range	1 A – 10 A (adjustable via switch in 1 A steps)	Relative air humidity	10 % – 95 %, without condensation
		Shock resistance	15 g acc. EN 60068-2-27
Characteristic	fast (1), medium (2), slow 1 (3), slow 2 (4), slow 3 (5), adjustable via switch, see ‚characteristic curves'	Certifications	cULus (E170585) DNV (TAA00002SY)
		Standards	EN 61000-6-2 EN 61000-6-4 UL 61010-1 UL 61010-2-201
Signal output			
Switching element	Relay, N/O contact, AC/DC 250 V, 1 A		

Part No.	Type	Weight/unit kg	PU (units)
779100.1211	LCOS-CC-1K-2P DC 24V	0.2	1

Dimensions



PIN assignment



Load monitoring · LCOS CCI

Electronic load monitoring up to DC 10 A, with communication via field bus
2-channel version, one-pole switching, DC 1 A – DC 10 A, adjustable characteristic
Fault messages: single/collective/90% message, Remote Control input

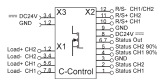
Notes and Comments			errors, low level: there are errors
Included in the delivery	Plug-in terminals : CS 5.08 and CS 3.50	90 % of the rated current I_B	Acc. to IEC 61131-2: High level <90 %, low level >90 %
Not included in the delivery	Function carrier and other accessories	centralised fault signalling	Acc. to IEC 61131-2: High level: no errors, low level: there are errors
Input			
Transfer rate	1 MBaud	**General**	
Type of function	2-channel 1 pin switching	Operation temperature range	0 °C … +55 °C
Rated voltage U_N	DC 24 V	Storage temperature range	-40 °C … +70 °C
Operation voltage range	DC 20.4–28.8 V	Dimensions (w × h × d)	22.5 mm × 110.0 mm × 102.0 mm (including function carrier, without plug-in terminals on the side)
Rated current I_N	DC 10 A		
Supply current	DC 16 A via LCOS Powerbus		
Reverse voltage protection	internal electronics	Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
		Mounting	plug-in on LCOS function carrier
Control input (Set / Reset)			22.5 mm (Accessories) DIN rail mounting (EN 60715)
Signal level	DC 24 V acc. to EN 61131		
OFF	Pulse with falling edge >100 ms, <800 ms	Installation position	Any
ON	Pulse with falling edge > 1 s	Degree of protection	IP20 (EN 60529)
Connection type control side	X2: 12-pin multi-point plug, RM 3.5, Push-In	Vibration resistance	0.7 g acc. to EN 60068-2-6
Isolation voltage	1.5 kV	Climatic conditions	Acc. to EN 60721 Stationary use at weather protected locations
Output		Over voltage category	II
Switching element	MOSFET	Degree of pollution	2
Output current	max. DC 10 A	Connection type load side	X1: 8-pin multi-point plug, RM 5.08, RM 5,08, Push-In
Voltage drop	<170 mV (10 A)		
Status display output	LED green: operating voltage ON, no fault, green flashing: 90 % I_B. LED red: OFF. Red flashing: triggered.	Connection type control side	X2: 12-pin multi-point plug, RM 3.5, Push-In
		Connection type	single wire
Switch-on capacity	>10000 µF		0.08 mm² – 1.5 mm² / AWG 28–16
Current range	1 A – 10 A (adjustable via switch in 1 A steps)	Strip length	RM 3.5: 9 mm, RM 5.08: 10 mm
		Relative air humidity	10 % – 95 %, without condensation
Characteristic	fast (1), medium (2), slow 1 (3), slow 2 (4), slow 3 (5), adjustable via switch, see ‚characteristic curves'	Shock resistance	15 g acc. EN 60068-2-27
		Certifications	cULus (E170585) DNV (TAA00002SY)
		Standards	EN 61000-6-2 EN 61000-6-4 UL 61010-1 UL 61010-2-201 DNVGL-CG-0339
Signal output			
Switching element	Transistor, open collector with pull-up resistor		
Single channel message	Acc. to IEC 61131-2: High level: no		

Part No.	Type	Weight/unit kg	PU (units)
773100.2111	LCOS-CC-I-2K-1P-DC24V	0.2	1

PIN assignment

X3 Powerbus

PIN/ PIN/ PIN	Signal Signal
1	DC 24V
2	DC 24V
3	GND
4	GND



X1

PIN/ Broches	Signal/ Signal
1	Load + CH2
2	Load + CH2
3	Load - CH2
4	Load - CH2
5	Load + CH1
6	Load + CH1
7	Load - CH1
8	Load - CH1

X2

PIN/ Broches	Signal/ Signal	
1	Status CH1 / Etat CH1	
2	Status CH2 / Etat CH2	
3	GND	
4	Status CH1 90%/ Etat CH1 90%	
5	Status CH2 90%/ Etat CH2 90%	Output
6	Status Out 1+2/ Etat Out 1+2	
7	Status Out 1+2/ Etat Out 1+2	
8	DC 24 V I_{max} = 100 mA	
9	GND	
10	Remote R/S+ CH1/ R/S à distance + CH1	
11	Remote R/S+ CH2/ R/S à distance + CH2	Input
12	Remote R/S- CH1/CH2 / R/S à distance - CH1/CH2	

Further product information at www.luetze.com

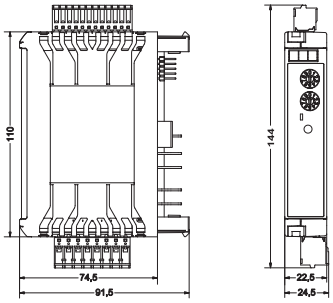
Load monitoring · LCOS CCI

Electronic load monitoring up to DC 10 A, with communication via field bus
1-channel version, two-pole switching, DC 1 A – DC 10 A, adjustable characteristic
Fault messages: single/90% message, Remote Control input

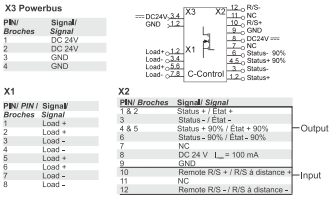
Notes and Comments		Single channel message	Contact closed: error, Contact open: no error
Included in the delivery	Plug-in terminals : CS 5.08 and CS 3.50	90 % of the rated current I_B	Contact closed: >90 %, Contact open: <90 %
Not included in the delivery	Function carrier and other accessories		
Input		**General**	
Type of function	1-channel 2 pin switching	Operation temperature range	0 °C … +55 °C
Rated voltage U_N	DC 24 V	Storage temperature range	-40 °C … +70 °C
Operation voltage range	DC 20.4–28.8 V	Dimensions (w × h × d)	22.5 mm × 110.0 mm × 102.0 mm (including function carrier, without plug-in terminals on the side)
Rated current I_N	DC 10 A		
Supply current	DC 16 A via LCOS Powerbus		
Reverse voltage protection	internal electronics	Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
		Mounting	plug-in on LCOS function carrier 22.5 mm (Accessories) DIN rail mounting (EN 60715)
Control input (Set / Reset)			
Signal level	DC 24 V acc. to EN 61131		
OFF	Pulse with falling edge >100 ms, <800 ms		
ON	Pulse with falling edge > 1 s	Installation position	Any
Connection type control side	X2: 12-pin multi-point plug, RM 3.5	Degree of protection	IP20 (EN 60529)
Isolation voltage	1.5 kV	Vibration resistance	0.7 g acc. to EN 60068-2-6
		Climatic conditions	Acc. to EN 60721 Stationary use at weather protected locations
Output			
Switching element	MOSFET and relay (galvanic separation: 500 V)	Over voltage category	II
		Degree of pollution	2
Output current	max. DC 10 A	Connection type load side	X1: 8-pin multi-point plug, RM 5.08, RM 5,08, Push-In
Voltage drop	<170 mV (10 A)		
Status display output	LED green: operating voltage ON, no fault, green flashing: 90 % I_B. LED red: OFF. Red flashing: triggered.	Connection type control side	X2: 12-pin multi-point plug, RM 3.5
		Connection type	single wire 0.08 mm² – 1.5 mm² / AWG 28–16
Switch-on capacity	>10000 µF	Strip length	RM 3.5: 9 mm, RM 5.08: 10 mm
Current range	1 A – 10 A (adjustable via switch in 1 A steps)	Relative air humidity	10 % – 95 %, without condensation
		Shock resistance	15 g acc. EN 60068-2-27
Characteristic	fast (1), medium (2), slow 1 (3), slow 2 (4), slow 3 (5), adjustable via switch, see ‚characteristic curves'	Certifications	cULus (E170585) DNV (TAA00002SY)
		Standards	EN 61000-6-2 EN 61000-6-4 UL 61010-1 UL 61010-2-201
Signal output			
Switching element	Relay, N/O contact, AC/DC 250 V, 1 A		

Part No.	Type	Weight/unit kg	PU (units)
773100.1211	LCOS-CC-I-1K-2P-DC24V	0.2	1

Dimensions



PIN assignment



PROFINET Bus coupler for LCOS CCI and LOCC-Box Net

Field bus connection

Fieldbus/Network systems	PROFINET RT acc. to IEC 61158-5-10
BUS physics	Ethernet
Interface mechanical	2 × Square connector 10-pin
Transfer rate	100 Mbit/s
Transmission standard	IEEE 802.3, 100 Base-Tx

Communication assemblies

BUS physics	CANopen acc. to ISO 11898-1
Bus termination	120 Ω internal
BUS participants	max. 64 functional assemblies
BUS topology	Line

Communication external LOCC-boxes

BUS physics	LIN
Bus termination	1 K internal
BUS participants	max. 64 functional assemblies
BUS topology	Line
Interface mechanical	Plug-in spring terminal 3-pin, 0.2 – 2.5 mm² (AWG 24 – AWG 12)
Interface electrical	galvanically separated

Communication web server

BUS physics	Ethernet acc. to IEEE 802.3 100 Base-Tx
Transfer rate	100 Mbit/s
Interface mechanical	RJ45 bush with galvanic isolation 1.5 kV

communication LOCC-PADS

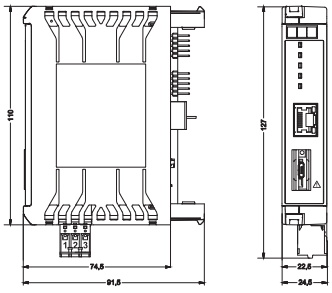
BUS physics	USB specification 2.0
Transfer rate	480 Mbit/s (USB High Speed)
Interface mechanical	Micro USB

General

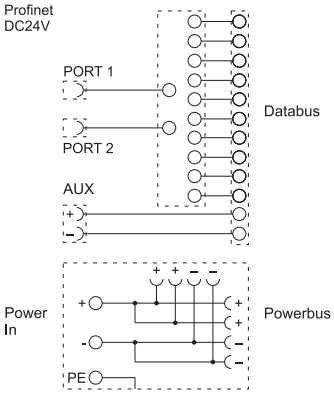
Rated voltage	24 V
Nominal voltage range	DC 18 V – 31.2 V
Rated current	max. 240 mA via function carrier with feed (FTE)
Power consumption	< 5 W
Protection device	Reverse diode
Vibration resistance	0.7 g acc. to EN 60068-2-6
Shock resistance	15 g acc. EN 60068-2-27
Insulation voltage input / output	AC 1.5 kV_{eff}
Installation position	Any
Operation temperature range	-25 °C … +55 °C
Storage temperature range	-25 °C … +85 °C
MTBF	on request
Relative air humidity	5 – 95 %, no defrosting
Cooling	Air convection
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Color of the housing	RAL 7012 basalt grey
Mounting	plug-in on function carrier with feed (FTE) 780714.575.1 57.5 mm (Accessories)
LOCC-Bus (transfer rate)	9600 kbit/s
LCOS-Bus (transfer rate)	1 Mbit/s
Max. altitude operation	2000 m
Degree of protection	IP20 (EN 60529)
Dimensions (w × h × d)	22.5 mm × 102.0 mm × 120.0 mm
Certifications	cULus (E170585) DNV (TAA00002SY)
Standards	EN 61000-6-2 EN 61000-6-4 UL 61010-1 UL 61010-2-201 DNVGL-CG-0339

Part No.	Type	Weight/unit kg	PU (units)
778000.1301	LCOS-BC-PN	0.25	1

Dimensions



PIN assignment



EtherCAT Bus coupler

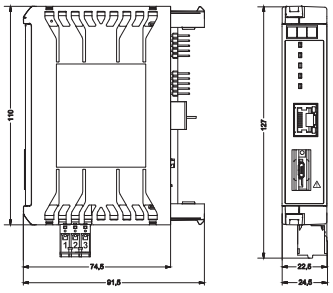
EtherCAT Bus coupler for LCOS CCI and LOCC-Box Net

Field bus connection	
Fieldbus/Network systems	EtherCAT Slave acc. to ETG.1300
BUS physics	Ethernet
Interface mechanical	2 × Square connector 10-pin
Transfer rate	100 Mbit/s
Transmission standard	IEEE 802.3, 100 Base-Tx
Communication assemblies	
BUS physics	CANopen acc. to ISO 11898-1
Bus termination	120 Ω internal
BUS participants	max. 64 functional assemblies
BUS topology	Line
Communication external LOCC-boxes	
BUS physics	LIN
Bus termination	1 K internal
BUS participants	max. 64 functional assemblies
BUS topology	Line
Interface mechanical	Plug-in spring terminal 3-pin, 0.2 – 2.5 mm² (AWG 24 – AWG 12)
Interface electrical	galvanically separated
Communication web server	
BUS physics	Ethernet acc. to IEEE 802.3 100 Base-Tx
Transfer rate	100 Mbit/s
Interface mechanical	RJ45 bush with galvanic isolation 1.5 kV
communication LOCC-PADS	
BUS physics	USB specification 2.0
Transfer rate	480 Mbit/s (USB High Speed)
Interface mechanical	Micro USB

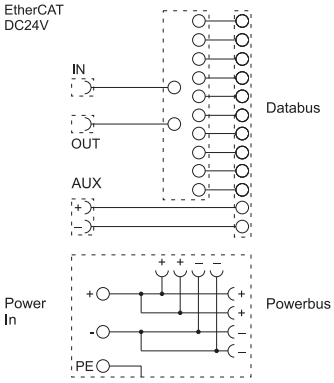
General	
Rated voltage	24 V
Nominal voltage range	DC 18 V – 31.2 V
Rated current	max. 240 mA via function carrier with feed (FTE)
Power consumption	< 5 W
Protection device	Reverse diode
Vibration resistance	0.7 g acc. to EN 60068-2-6
Shock resistance	15 g acc. EN 60068-2-27
Insulation voltage input / output	AC 1.5 kV_{eff}
Installation position	Any
Operation temperature range	-25 °C … +55 °C
Storage temperature range	-25 °C … +85 °C
MTBF	on request
Relative air humidity	5 – 95 %, no defrosting
Cooling	Air convection
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Color of the housing	RAL 7012
	basalt grey
Mounting	plug-in
	on function carrier with feed (FTE)
	780714.575.1
	57.5 mm (Accessories)
LOCC-Bus (transfer rate)	9600 kbit/s
LCOS-Bus (transfer rate)	1 Mbit/s
Max. altitude operation	2000 m
Degree of protection	IP20 (EN 60529)
Dimensions (w × h × d)	22.5 mm × 102.0 mm × 120.0 mm
Certifications	cULus (E170585)
	DNV (TAA00002SY)
Standards	EN 61000-6-2
	EN 61000-6-4
	UL 61010-1
	UL 61010-2-201
	DNVGL-CG-0339

Part No.	Type	Weight/unit kg	PU (units)
778000.1401	LCOS-BC-EC	0.25	1

Dimensions



PIN assignment



EtherNet / IP Bus coupler

EtherNet/IP Bus coupler for LCOS CCI and LOCC-Box Net

Field bus connection

Fieldbus/Network systems	Ethernet Industrial Protocol (EtherNet/IP) acc. to IEC 61158
BUS physics	Ethernet
Interface mechanical	2 × Square connector 10-pin
Transfer rate	100 Mbit/s
Transmission standard	IEEE 802.3, 100 Base-Tx

Communication assemblies

BUS physics	CANopen acc. to ISO 11898-1
Bus termination	120 Ω internal
BUS participants	max. 120 channels or 64 functional assemblies
BUS topology	Line

Communication external LOCC-boxes

BUS physics	LIN
Bus termination	1 K internal
BUS participants	max. 64 functional assemblies
BUS topology	Line
Interface mechanical	Plug-in spring terminal 3-pin, 0.2 – 2.5 mm² (AWG 24 – AWG 12)
Interface electrical	galvanically separated

Communication web server

BUS physics	Ethernet acc. to IEEE 802.3 100 Base-Tx
Transfer rate	100 Mbit/s
Interface mechanical	RJ45 bush with galvanic isolation 1.5 kV

communication LOCC-PADS

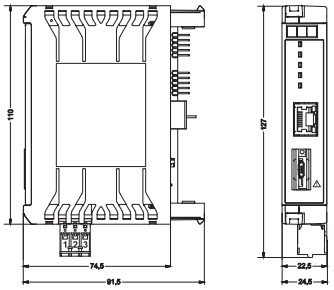
BUS physics	USB specification 2.0
Transfer rate	480 Mbit/s (USB High Speed)
Interface mechanical	Micro USB

General

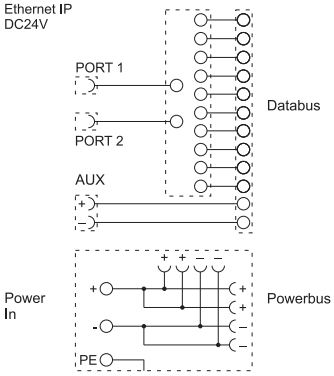
Rated voltage	24 V
Nominal voltage range	DC 18 V – 31.2 V
Rated current	max. 240 mA via function carrier with feed (FTE)
Power consumption	< 5 W
Protection device	Reverse diode
Vibration resistance	0.7 g acc. to EN 60068-2-6
Shock resistance	15 g acc. EN 60068-2-27
Insulation voltage input / output	AC 1.5 kV_{eff}
Installation position	Any
Operation temperature range	-25 °C … +55 °C
Storage temperature range	-25 °C … +85 °C
MTBF	on request
Relative air humidity	5 – 95 %, no defrosting
Cooling	Air convection
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Color of the housing	RAL 7012 basalt grey
Mounting	plug-in on function carrier with feed (FTE) 780714.575.1 57.5 mm (Accessories)
LOCC-Bus (transfer rate)	9600 kbit/s
LCOS-Bus (transfer rate)	1 Mbit/s
Max. altitude operation	2000 m
Degree of protection	IP20 (EN 60529)
Dimensions (w × h × d)	22.5 mm × 102.0 mm × 120.0 mm
Certifications	cULus (E170585) ODVA Certification DNV (TAA00002SY)
Standards	EN 61000-6-2 EN 61000-6-4 UL 61010-1 UL 61010-2-201 DNVGL-CG-0339

Part No.	Type	Weight/unit kg	PU (units)
778000.1701	LCOS-BC-ETIP	0.25	1

Dimensions



PIN assignment



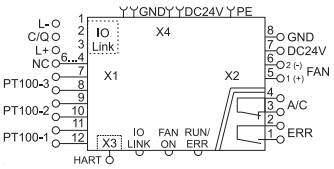
Further product information at www.luetze.com

Control unit for *Air*BLOWER

Attention	
Description	To control the *Air*BLOWER.
Control unit to be used together with function carrier base.	
Configuration interface	
HART interface	µ-USB Type B 5-pin
Supply module electronic	
Rated voltage U_N	DC 24 V SELV
Connection	8-pole Push-In terminal X2: Pin 8–7 or via Powerbus (LCOS system) use copper conductors only
Rated current	DC 2 A
Operation voltage range	DC 20.4–28.8 V
Protective measure	Reverse diode galvanic isolation between module electronic and diagnosis outputs Overvoltage protection
Diagnosis outputs	
Connection	8-pole Push-In terminal X2: Pin 1-2 (Relay fault), Pin 3-4 (Relay air conditioning unit)
Isolating voltage	AC 2500 V
Parameterisation	HART interface / IO-Link interface
Control output	
Connection	8-pole Push-In terminal X2: Pin 5–6
Style	Semi-conductor switch
Switching capacity	DC 24 V, 2 A
Temperature inputs	
Input signal	3 × PT100
Temperature range	-50 °C … +100 °C
Accuracy	+/- 3 K
Connection	12-pole Push-In terminal X1: Pin 7-12
Linearization method	linear interpolation
Actuator sensor interface	
Style	IO-Link Device/Slave
Connection	12-pole Push-In terminal X1: Pin 1–3
Data rate	38.4 kBaud
General	
Dimensions (w × h × d)	22.5 mm × 142.0 mm × 91.5 mm
Dimensions	with function carrier: 22.5 × 142.0 × 102.0 mm
Relative air humidity	100 %, no condensation allowed
Max. altitude operation	2000 m max.
Mounting	DIN rail mounting
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Operation temperature range	-25 °C … +60 °C
Storage temperature range	-40 °C … +70 °C
Installation position	Vertical
Typical power supply	Mains adapter DC 24 V regulated/unregulated, SELV
Degree of protection	IP20
Equipment/Spare parts Accessories	**PT 100 Elements (3 units)**: Part.-No. 773900.0001 | PU: 1 unit **Function carrier 22.5 mm, cannot be expanded with modules (standalone version):** Part.-No. 780201.225.1 | LCOS-FT-PE-225-00-00-1 | PU: 1 unit **Function carrier 22.5 mm, can be expanded with modules: (in LCOS system with Powerbus):** Part.-No. 780402.225.1 | LCOS-FT-PE-225-0P-02-1 | PU: 1 unit See also the appropriate chapter in operating instructions.

Part No.	Type	Weight/unit kg	PU (units)
777100.0011	LCOS-AB-I	0.12	1

PIN assignment

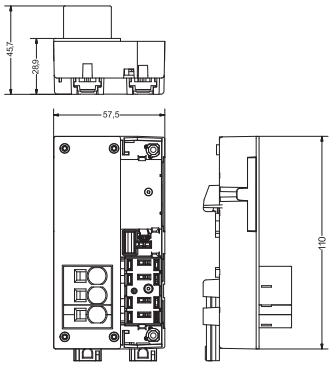


Function carrier with feed DC 24 V, integrated PE contact
Powerbus DC 24 V, 2 × 16 A

Electrical data Power Bus		MTBF	on request
Operating voltage	max. DC 30 V	Protection class	I
Operating current	max. DC 32 A	Over voltage category	II
Voltage drop	Powerbus at I_{max} <80 mV	Degree of pollution	2
Connection type	Spring terminal 3×16 mm², 3×10 mm² with AE	Dimensions (w × h × d)	57.5 mm × 28.0 mm × 110.0 mm
		Certifications	DNV GL
Connection type	Spring terminal 3×AWG 6, 3×AWG 8 with AE	Standards	EN 60934 EN 60664-1 EN 60947-1 EN 50178 EN 50124-1 EN 61140
Slots			
Slots	1 × LCOS function housing 22.5 mm		
General			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)	**General ambient conditions**	
Color of the housing	pebble grey	Operation temperature range	-25 °C … +70 °C
Mounting	DIN rail mountable TS35 (EN 60715)	Storage temperature range	-40 °C … +85 °C
		Relative air humidity	10 % – 95 %, without condensation
Max. altitude operation	2000 m max.	Degree of protection	IP20 (EN 60529)
Installation position	Vertical	Shock resistance	5 g acc. EN 60068-2-27
Marking	2 × Labelling plates 5×5 mm	Vibration resistance	4 g acc. to EN 60068-2-8

Part No.	Type	Weight/unit kg	PU (units)
780700.575.1	LCOS-FTE-PE-575-NC-00-1	0.2	1

Dimensions



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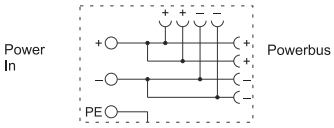
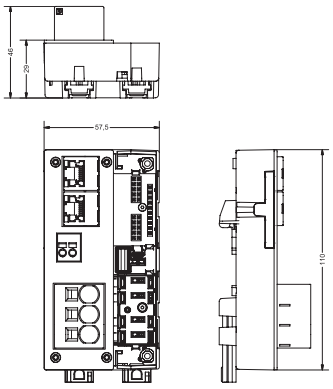


LCOS function carrier AC/DC universal (for Profinet, Ethercat and Ethernet-IP) with power supply DC 48 V / 32 A, integrated PE contact, Data bus, Powerbus, control voltage connection DC 24 V

Electrical data Power Bus			
Operating voltage	max. DC 48 V	**General**	
Operating current	max. DC 32 A	Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Voltage drop	<80 mV	Color of the housing	pebble grey
Connection type	Spring terminal 3×16 mm², 3×10 mm² with AE	Mounting	DIN rail mountable TS35
		Max. altitude operation	2000 m max.
Connection type	Spring terminal 3×AWG 6, 3×AWG 8 with AE	Installation position	Vertical
		MTBF	on request
		Protection class	I
Electrical data supplementary supply		Over voltage category	II
Operating voltage	DC 18 V – DC 31.2 V	Degree of pollution	2
Rated voltage	DC 24 V	Dimensions (w × h × d)	57.5 mm × 28.0 mm × 110.0 mm
Operating current	max. DC 2 A	Certifications	DNV (TAA00002SY)
Protection device	Polarity reversal protection	Standards	EN 61000-6-2
Connection type input	Spring terminal		EN 61000-6-4
	2 × 2.5 mm² (AWG 26 – AWG 14)		DNV-CG-0339
Field bus connection		**General ambient conditions**	
Interface mechanical	2xRJ45 bush with galvanic isolation 1.5 kV	Operation temperature range	-25 °C … +55 °C
		Storage temperature range	-40 °C … +85 °C
Status indication	Link, activity	Relative air humidity	10 % – 95 %, without condensation
		Degree of protection	IP20 (EN 60529)
Slots		Shock resistance	15 g 11 ms acc. to IEC 60068-2-27
Slots	1 × LCOS function housing 22.5 mm	Vibration resistance	0.7 g acc. to EN 60068-2-6

Part No.	Type	Weight/unit kg	PU (units)
780713.575.1	LCOS-FTE-PE-575-UN-03-1-L	0.25	1

Dimensions



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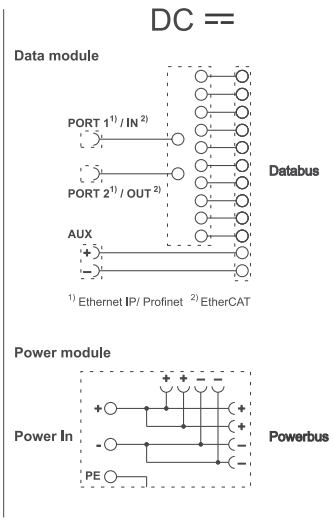
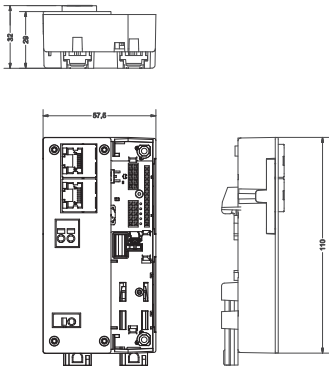


LCOS function carrier
Supply module for bus coupler Profinet, EtherCAT and Ethernet IP
Control voltage connection DC 24 V

Electrical data supplementary supply		Mounting	DIN rail mountable TS35 (EN 60715)
Operating voltage	DC 18 V – DC 31.2 V	Max. altitude operation	2000 m max.
Rated voltage	DC 24 V	Installation position	Vertical
Operating current	max. DC 2 A	MTBF	on request
Protection device	Polarity reversal protection	Over voltage category	II
Connection type input	Spring terminal 2 × 2.5 mm² (AWG 26 – AWG 14)	Degree of pollution	2
		Dimensions (w × h × d)	57.5 mm × 28.0 mm × 110.0 mm
		Certifications	DNV (TAA00002SY)
Field bus connection		Standards	EN 61000-6-2 EN 61000-6-4 DNV-CG-0339
Interface mechanical	2xRJ45 bush with galvanic isolation 1.5 kV		
Status indication	Link, activity	**General ambient conditions**	
		Operation temperature range	-25 °C … +55 °C
Slots		Storage temperature range	-40 °C … +85 °C
Slots	1 × LCOS function housing 22.5 mm	Relative air humidity	10 % – 95 %, without condensation
		Degree of protection	IP20 (EN 60529)
General		Shock resistance	15 g 11 ms acc. to IEC 60068-2-27
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)	Vibration resistance	0.7 g acc. to EN 60068-2-6
Color of the housing	pebble grey		

Part No.	Type	Weight/unit kg	PU (units)
780714.575.1	LCOS-FTE-PE-575-UN-04-1-L	0.25	1

Dimensions



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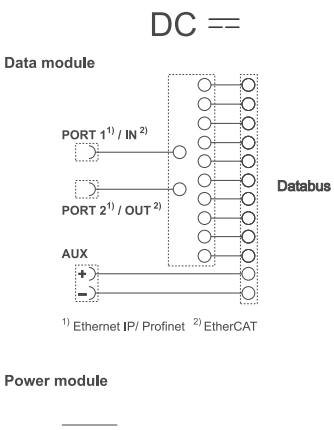
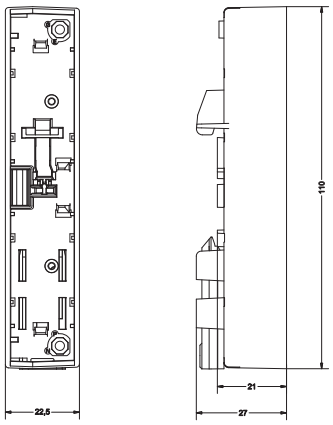


LCOS function carrier 22.5 mm
Closed design
Integrated PE contact

Slots		Standards	UL 61010-1 UL 61010-2-201 DNV-CG-0339
Slots	1 × 22.5mm		
General			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)	**General ambient conditions**	
Color of the housing	pebble grey	Operation temperature range	-40 °C … +85 °C
Mounting	DIN rail mountable TS35 (EN 60715)	Storage temperature range	-40 °C … +85 °C
		Relative air humidity	5 – 95 %, no defrosting
Installation position	Vertical	Degree of protection	IP20 (EN 60529)
Marking	2 × Labelling plates 5×5 mm	Power Dissipation	9 W @ 20°C, 4 W @ 60°C, 3 W @ 75°C
MTBF	on request		
Dimensions (w × h × d)	22.5 mm × 28.0 mm × 110.0 mm	Shock resistance	15 g 11 ms acc. to IEC 60068-2-27
Certifications	cULus (E170585) DNV (TAA00002SY)	Vibration resistance	4 g acc. to EN 60068-2-8

Part No.	Type	Weight/unit kg	PU (units)
780201.225.1	LCOS-FT-PE-225-00-00-1	0.04	1
780201.225.2	LCOS-FT-PE-225-00-00-1	0.06	10

Dimensions



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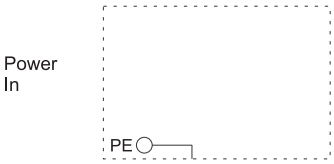
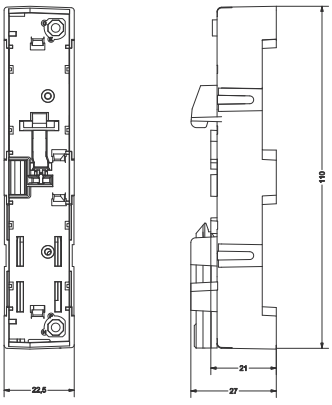


LCOS function carrier 22.5 mm
Modular design
Integrated PE contact

Slots		Standards	UL 61010-1 UL 61010-2-201 DNV-CG-0339
Slots	1 × 22.5mm		
General			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)	**General ambient conditions**	
Color of the housing	pebble grey	Operation temperature range	-40 °C … +85 °C
Mounting	DIN rail mountable TS35 (EN 60715)	Storage temperature range	-40 °C … +85 °C
		Relative air humidity	5 – 95 %, no defrosting
Installation position	Vertical	Degree of protection	IP20 (EN 60529)
Marking	2 × Labelling plates 5×5 mm	Power Dissipation	9 W @ 20°C, 4 W @ 60°C, 3 W @ 75°C
MTBF	on request		
Dimensions (w × h × d)	22.5 mm × 28.0 mm × 110.0 mm	Shock resistance	15 g 11 ms acc. to IEC 60068-2-27
Certifications	cULus (E170585) DNV (TAA00002SY)	Vibration resistance	4 g acc. to EN 60068-2-8

Part No.	Type	Weight/unit kg	PU (units)
780331.225.1	LCOS-FT-PE-225-00-03-1	0.04	1
780331.225.2	LCOS-FT-PE-225-00-03-1	0.06	10

Dimensions



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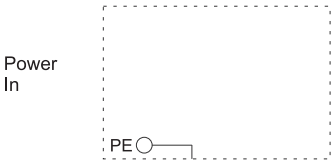


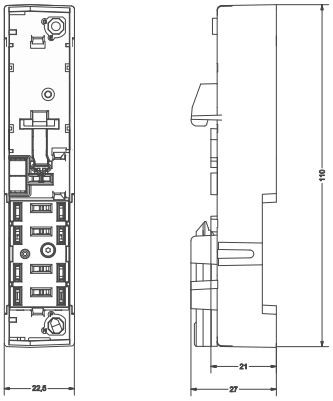
Further product information at
www.luetze.com

LCOS function carrier 22.5 mm
with integrated power bus
Modular expandable, integrated PE contact

Electrical data Power Bus		Dimensions (w × h × d)	22.5 mm × 28.0 mm × 110.0 mm
Operating voltage	max. AC/DC 500 V	Certifications	cULus (E170585) DNV (TAA00002SY)
Operating current	max. AC/DC 16 A/channel		
Voltage drop	Powerbus at I_{max} <80 mV	Standards	UL 61010-1 UL 61010-2-201 DNV-CG-0339
Slots			
Slots	1 × 22.5mm	**General ambient conditions**	
General		Operation temperature range	-40 °C … +85 °C
Connection type	Bridge 1-pole, connectable	Storage temperature range	-40 °C … +85 °C
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)	Relative air humidity	5 – 95 %, no defrosting
Color of the housing	pebble grey	Degree of protection	IP20 (EN 60529)
Mounting	DIN rail mountable TS35 (EN 60715)	Power Dissipation	9 W @ 20°C, 4 W @ 60°C, 3 W @ 75°C
Installation position	Vertical	Shock resistance	15 g 11 ms acc. to IEC 60068-2-27
Marking	2 × Labelling plates 5×5 mm	Vibration resistance	4 g acc. to EN 60068-2-8
MTBF	on request		

Part No.	Type	Weight/unit kg	PU (units)
780402.225.1	LCOS-FT-PE-225-0P-02-1	0.04	1
780402.225.2	LCOS-FT-PE-225-0P-02-1	0.06	10

Dimensions



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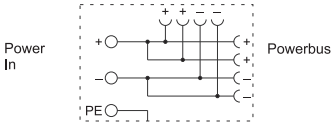
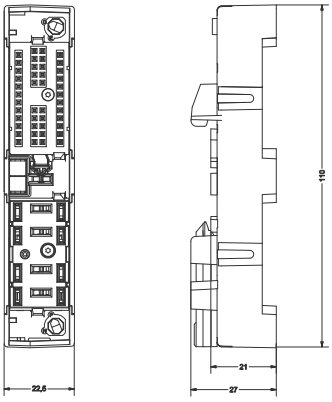


LCOS function carrier 22.5 mm
with integrated power bus and data module
Modular expandable, integrated PE contact

Electrical data Power Bus			(EN 60715)
Operating voltage	max. AC/DC 500 V	Installation position	Vertical
Operating current	max. AC/DC 16 A/channel	Marking	2 × Labelling plates 5×5 mm
Voltage drop	<80 mV	MTBF	on request
		Over voltage category	II
Data module		Degree of pollution	2
Material PCB	FR4	Dimensions (w × h × d)	22.5 mm × 28.0 mm × 110.0 mm
Material connector	PE-HT	Certifications	cULus (E170585)
Operating voltage	max. DC 30 V		DNV (TAA00002SY)
Operating current	max. DC 2 A/contact	Standards	DNV-CG-0339
System current	max. DC 8 A		
Pole number	Input/output: 10-pin, outlet: 2×10-pin	**General ambient conditions**	
Contact material	CuZn	Operation temperature range	-40 °C … +85 °C
		Storage temperature range	-40 °C … +85 °C
Slots		Relative air humidity	10 % – 95 %, without condensation
Slots	1 × 22.5mm	Degree of protection	IP20 (EN 60529)
		Power Dissipation	9 W @ 20°C, 4 W @ 60°C, 3 W @ 75°C
General			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)	Shock resistance	15 g 11 ms acc. to IEC 60068-2-27
Color of the housing	pebble grey	Vibration resistance	0.7 g acc. to EN 60068-2-6
Mounting	DIN rail mountable TS35		

Part No.	Type	Weight/unit kg	PU (units)
780403.225.1	LCOS-FT-PE-225-DP-03-1	0.04	1
780403.225.2	LCOS-FT-PE-225-DP-03-1	0.06	10

Dimensions



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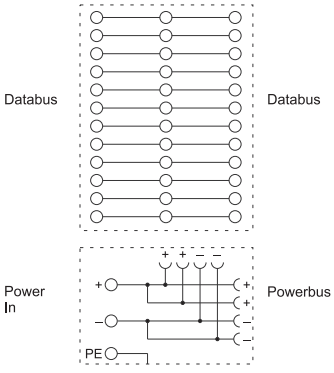
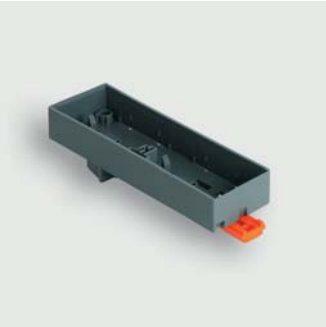


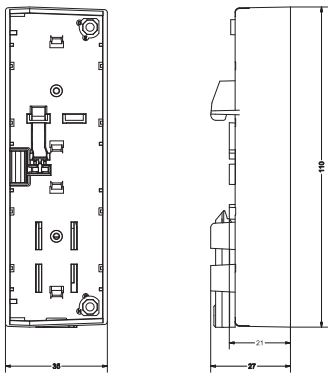
LCOS function carrier 35 mm
Closed design
Integrated PE contact



Slots		Standards	UL 61010-1 UL 61010-2-201 DNV-CG-0339
Slots	1 × 35mm		
General			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)	**General ambient conditions**	
Color of the housing	pebble grey	Operation temperature range	-40 °C … +85 °C
Mounting	DIN rail mountable TS35 (EN 60715)	Storage temperature range	-40 °C … +85 °C
		Relative air humidity	5 – 95 %, no defrosting
Installation position	Vertical	Degree of protection	IP20 (EN 60529)
Marking	2 × Labelling plates 5×5 mm	Power Dissipation	9 W @ 20°C, 4 W @ 60°C, 3 W @ 75°C
MTBF	on request		
Dimensions (w × h × d)	35.0 mm × 28.0 mm × 110.0 mm	Shock resistance	15 g 11 ms acc. to IEC 60068-2-27
Certifications	cULus (E170585) DNV (TAA00002SY)	Vibration resistance	4 g acc. to EN 60068-2-8

Part No.	Type	Weight/unit kg	PU (units)
780201.350.1	LCOS-FT-PE-350-00-00-1	0.04	1
780201.350.2	LCOS-FT-PE-350-00-00-1	0.06	10

Dimensions



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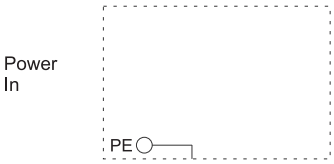
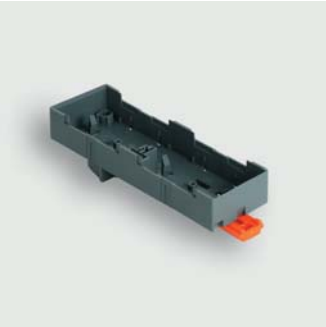


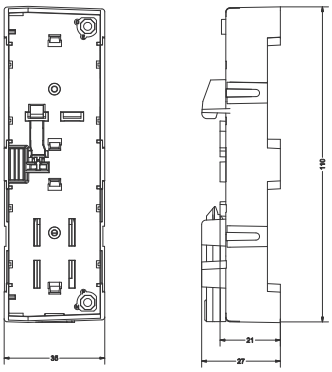
LCOS function carrier 35 mm
Modular design
Integrated PE contact



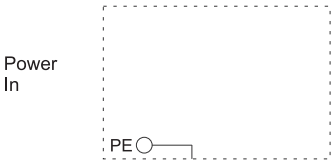
Slots		Standards	UL 61010-1 UL 61010-2-201 DNV-CG-0339
Slots	1 × 35mm		
General			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)	**General ambient conditions**	
Color of the housing	pebble grey	Operation temperature range	-40 °C … +85 °C
Mounting	DIN rail mountable TS35 (EN 60715)	Storage temperature range	-40 °C … +85 °C
		Relative air humidity	5 – 95 %, no defrosting
Installation position	Vertical	Degree of protection	IP20 (EN 60529)
Marking	2 × Labelling plates 5×5 mm	Power Dissipation	9 W @ 20°C, 4 W @ 60°C, 3 W @ 75°C
MTBF	on request		
Dimensions (w × h × d)	35.0 mm × 28.0 mm × 110.0 mm	Shock resistance	15 g 11 ms acc. to IEC 60068-2-27
Certifications	cULus (E170585) DNV (TAA00002SY)	Vibration resistance	4 g acc. to EN 60068-2-8

Part No.	Type	Weight/unit kg	PU (units)
780331.350.1	LCOS-FT-PE-350-00-03-1	0.04	1
780331.350.2	LCOS-FT-PE-350-00-03-1	0.06	10

Dimensions



PIN assignment

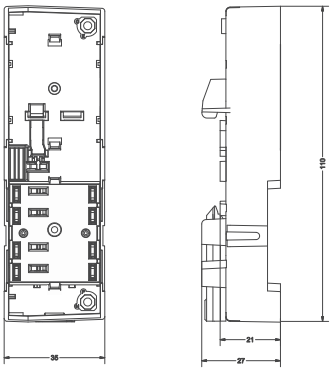


LCOS function carrier 35 mm
with integrated power bus
Modular expandable, integrated PE contact

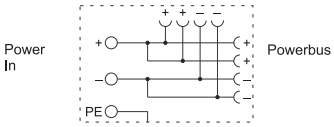
Electrical data Power Bus		Dimensions (w × h × d)	35.0 mm × 28.0 mm × 110.0 mm
Operating voltage	max. AC/DC 500 V	Certifications	cULus (E170585) DNV (TAA00002SY)
Operating current	max. AC/DC 16 A/channel		
Voltage drop	<80 mV	Standards	UL 61010-1 UL 61010-2-201 DNV-CG-0339
Slots			
Slots	1 × 35mm		
		General ambient conditions	
General		Operation temperature range	-40 °C … +85 °C
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)	Storage temperature range	-40 °C … +85 °C
Color of the housing	pebble grey	Relative air humidity	5 – 95 %, no defrosting
Mounting	DIN rail mountable TS35 (EN 60715)	Degree of protection	IP20 (EN 60529)
		Power Dissipation	9 W @ 20°C, 4 W @ 60°C, 3 W @ 75°C
Installation position	Vertical		
Marking	2 × Labelling plates 5×5 mm	Shock resistance	15 g 11 ms acc. to IEC 60068-2-27
MTBF	on request	Vibration resistance	4 g acc. to EN 60068-2-8

Part No.	Type	Weight/unit kg	PU (units)
780402.350.1	LCOS-FT-PE-350-0P-02-1	0.04	1
780402.350.2	LCOS-FT-PE-350-0P-02-1	0.06	10

Dimensions



PIN assignment

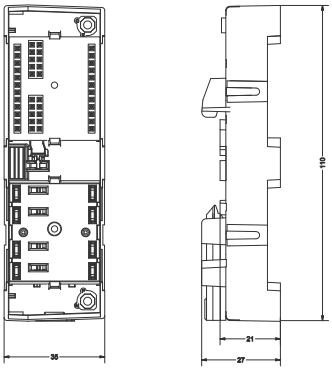


LCOS function carrier 35 mm
with integrated power bus and data module
Modular expandable, integrated PE contact

Electrical data Power Bus			(EN 60715)
Operating voltage	max. AC/DC 500 V	Installation position	Vertical
Operating current	max. AC/DC 16 A/channel	Marking	2 × Labelling plates 5×5 mm
Voltage drop	<80 mV	MTBF	on request
		Over voltage category	II
Data module		Degree of pollution	2
Material PCB	FR4	Dimensions (w × h × d)	35.0 mm × 28.0 mm × 110.0 mm
Material connector	PE-HT	Certifications	cULus (E170585)
Operating voltage	max. DC 30 V		DNV (TAA00002SY)
Operating current	max. DC 2 A/contact	Standards	DNV-CG-0339
System current	max. DC 8 A		
Pole number	Input/output: 10-pin, outlet: 2×10-pin	**General ambient conditions**	
Contact material	CuZn	Operation temperature range	-40 °C … +85 °C
		Storage temperature range	-40 °C … +85 °C
Slots		Relative air humidity	10 % – 95 %, without condensation
Slots	1 × 35mm	Degree of protection	IP20 (EN 60529)
		Power Dissipation	9 W @ 20°C, 4 W @ 60°C, 3 W @ 75°C
General			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)	Shock resistance	15 g 11 ms acc. to IEC 60068-2-27
Color of the housing	pebble grey	Vibration resistance	0.7 g acc. to EN 60068-2-6
Mounting	DIN rail mountable TS35		

Part No.	Type	Weight/unit kg	PU (units)
780403.350.1	LCOS-FT-PE-350-DP-03-1	0.04	1
780403.350.2	LCOS-FT-PE-350-DP-03-1	0.06	10

Dimensions



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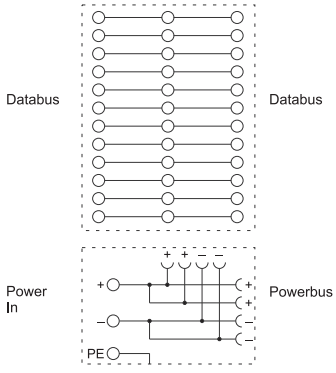


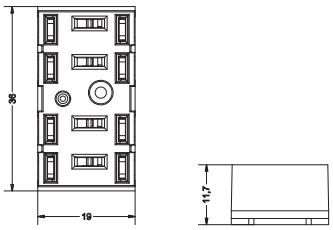
Further product information at
www.luetze.com

Power module
AC/DC 500 V/16 A per phase
4-pin, 22.5 mm

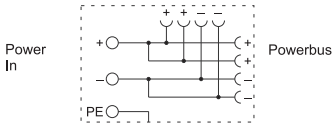
General		Standards	IEC 60068-2-42, 43, 8, 27
Connection type	Power bridge 1-pole		EN 60064-1
Material	PA 6.6 (UL 94 V0, NNF I2, F2)		EN 50175
Operating voltage	max. AC/DC 500 V		EN 50124-1
Operating current	max. AC/DC 16 A/phase		
System current max.	AC/DC 64 A	**General ambient conditions**	
Mounting	latches into position	Operation temperature range	-40 °C … +85 °C
	on LCOS function carrier	Storage temperature range	-40 °C … +85 °C
	22.5 mm	Relative air humidity	5 – 95 %, no defrosting
Contact material	CuCrSiTi	Degree of protection	IP20 (EN 60529)
Pole number	4	Shock resistance	15 g 11 ms acc. to IEC 60068-2-27
Dimensions (w × h × d)	36.0 mm × 11.7 mm × 19.0 mm	Vibration resistance	4 g acc. to EN 60068-2-8
Certifications	UR		

Part No.	Type	Weight/unit kg	PU (units)
780910.225.2	LCOS-ZB-PM-225-00-1	0.02	10
780910.225.3	LCOS-ZB-PM-225-00-1	0.02	50

Dimensions



PIN assignment

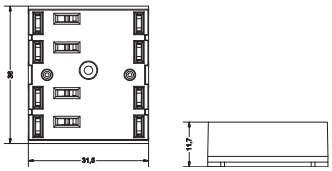


Power module
AC/DC 500 V/16 A per phase
4-pin, 35 mm

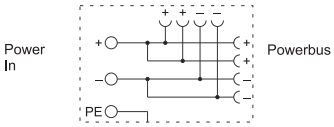
General		Standards	IEC 60068-2-42, 43, 8, 27
Connection type	Power bridge 1-pole		EN 60064-1
Material	PA 6.6 (UL 94 V0, NNF I2, F2)		EN 50175
Operating voltage	max. AC/DC 500 V		EN 50124-1
Operating current	max. AC/DC 16 A/phase		
System current max.	AC/DC 64 A	**General ambient conditions**	
Mounting	latches into position on LCOS function carrier 35 mm	Operation temperature range	-40 °C … +85 °C
		Storage temperature range	-40 °C … +85 °C
		Relative air humidity	5 – 95 %, no defrosting
Contact material	CuCrSiTi	Degree of protection	IP20 (EN 60529)
Pole number	4	Shock resistance	15 g 11 ms acc. to IEC 60068-2-27
Dimensions (w × h × d)	36.0 mm × 10.0 mm × 31.5 mm	Vibration resistance	4 g acc. to EN 60068-2-8
Certifications	UR		

Part No.	Type	Weight/unit kg	PU (units)
780910.350.2	LCOS-ZB-PM-350-00-1	0.02	10
780910.350.3	LCOS-ZB-PM-350-00-1	0.02	50

Dimensions



PIN assignment

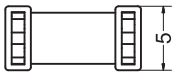


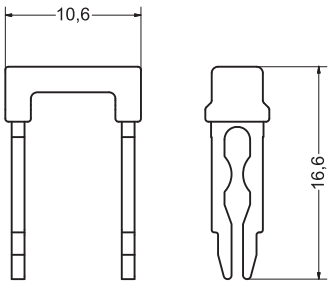
Insulated power bridge
AC/DC 500 V/16 A per phase
1-pin

General			EN 60064-1
Material	PA6.6 (UL 94 V0, NNF I2, F2)		EN 50175
Operating voltage	max. AC/DC 500 V		EN 50124-1
Operating current	max. AC/DC 16 A/phase		
System current max.	AC/DC 64 A	**General ambient conditions**	
Mounting	latches into position	Operation temperature range	-40 °C … +85 °C
	on LCOS function carrier	Storage temperature range	-40 °C … +85 °C
	22.5 mm or 35 mm	Relative air humidity	5 – 95 %, no defrosting
Contact material	CuCrSiTi	Degree of protection	IP20 (EN 60529)
Pole number	1	Shock resistance	15 g 11 ms acc. to IEC 60068-2-27
Certifications	UR	Vibration resistance	4 g acc. to EN 60068-2-8
Standards	IEC 60068-2-42, 43, 8, 27		

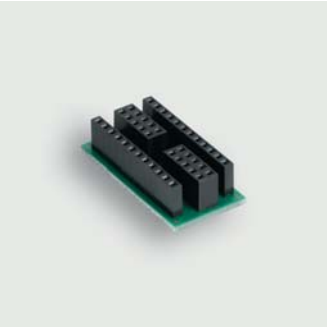
Part No.	Type	Weight/unit kg	PU (units)
780961.001.2	LCOS-ZB-PB-01-00	0.02	10
780961.001.3	LCOS-ZB-PB-01-00	0.02	50

Dimensions





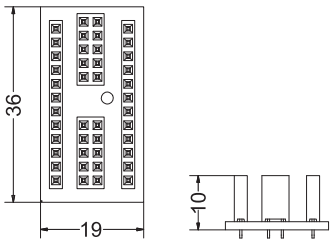
LCOS data module
12-pin
22.5 mm



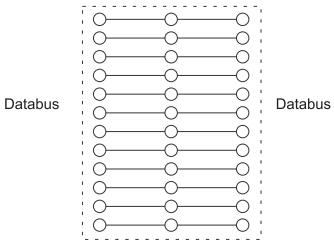
Data module		Dimensions (w × h × d)	36.0 mm × 10.0 mm × 19.0 mm
Material PCB	FR4	Certifications	UR
Material connector	PE-HT	Standards	IEC 60068-2-42, 43, 8, 27
Operating voltage	max. DC 30 V		EN 60064-1
Operating current	max. DC 2 A/contact		EN 50175
System current	max. DC 8 A		EN 50124-1
Pole number	Input/output: 12-ping, outlet: 2×10-pin		
		General ambient conditions	
General		Operation temperature range	-40 °C … +85 °C
Connection type	Data bridge 12-pole	Storage temperature range	-40 °C … +85 °C
Mounting	latches into position on LCOS function carrier 22.5 mm	Relative air humidity	5 – 95 %, no defrosting
		Degree of protection	IP20 (EN 60529)
		Shock resistance	15 g 11 ms acc. to IEC 60068-2-27
Contact material	CuZn	Vibration resistance	4 g acc. to EN 60068-2-8

Part No.	Type	Weight/unit kg	PU (units)
780900.225.2	LCOS-ZB-DM-225-12-00-1	0.004	10
780900.225.3	LCOS-ZB-DM-225-12-00-1	0.004	50

Dimensions



PIN assignment



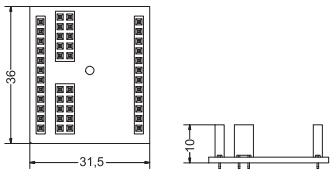
Further product information at
www.luetze.com

LCOS data module
12-pin
35 mm

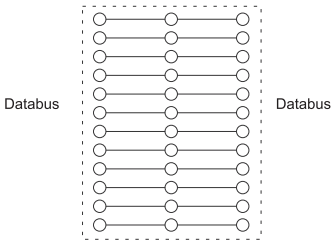
Data module		Dimensions (w × h × d)	36.0 mm × 10.0 mm × 19.0 mm
Material PCB	FR4	Standards	IEC 60068-2-42, 43, 8, 27
Material connector	PE-HT		EN 60064-1
Operating voltage	max. DC 30 V		EN 50175
Operating current	max. DC 2 A/contact		EN 50124-1
System current	max. DC 8 A		
Pole number	Input/output: 12-ping, outlet: 2×10-pin	**General ambient conditions**	
		Operation temperature range	-40 °C … +85 °C
General		Storage temperature range	-40 °C … +85 °C
Connection type	Data bridge 12-pole	Relative air humidity	5 – 95 %, no defrosting
Mounting	latches into position on LCOS function carrier 35 mm	Degree of protection	IP20 (EN 60529)
		Shock resistance	15 g 11 ms acc. to IEC 60068-2-27
		Vibration resistance	4 g acc. to EN 60068-2-8
Contact material	CuZn		

Part No.	Type	Weight/unit kg	PU (units)
780900.350.2	LCOS-ZB-DM-350-12-00-1	0.004	10
780900.350.3	LCOS-ZB-DM-350-12-00-1	0.004	50

Dimensions



PIN assignment

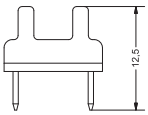


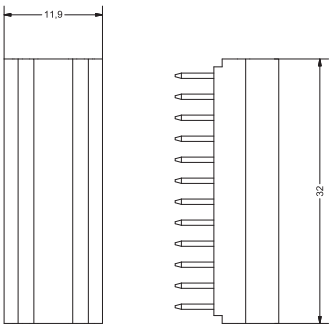
Data bridge
12-pole
insulated

General		
Mounting	DIN rail mountable TS35 with interlock	(EN 60715)

Part No.	Type	PU (units)
780960.012.2	LCOS-ZB-DB-12-00	10
780960.012.3	LCOS-ZB-DB-12-00	50

Dimensions



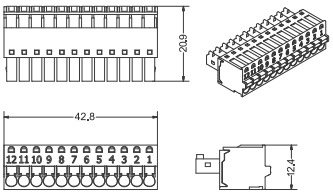


LCOS plug-in terminal
Push-In, 12-pin, pin spacing 3.50
printed 12 – 1

General			
Design	Push-In terminal block, pluggable RM 3.50	Over voltage category Degree of pollution Pole number	III 3 12
Connection type	Push-In	Dimensions (w × h × d)	42.8 mm × 12.4 mm × 20.9 mm
Connection cross-section	AWG 28 – AWG 16	Certifications	cURus V / A / AMG: 150 / 8 / 28-16 Appr. UL File-No. E121004 SEV 1.5 mm²: 130 V / 2.5 kV / 8 A
Connection cross-section	0.08 – 1.5 mm²		
Housing material	PA 6.6 (UL 94 V-0)		
Color of the housing	black		
Operating voltage	max. AC/DC 160 V	**General ambient conditions**	
Operating current	max. 8 A	Operation temperature range	-40 °C … +85 °C
Mounting	Pluggable, on LCOS function housing	Storage temperature range	-40 °C … +85 °C
Installation position	Any	Degree of protection	IP20 (EN 60529)
Contact material	CuSn		

Part No.	Type	Weight/unit kg	PU (units)
780921.000.2	LCOS-ZB-KL-FS-350-15-12	0.11	10

Dimensions

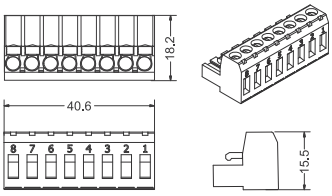


LCOS plug-in terminal
Screw terminal, 8-pin, pin spacing 5.08
printed 8 – 1

General			
Design	Screw terminal, pluggable RM 5.08	Contact material	CuSn
		Over voltage category	III
		Degree of pollution	3
Connection type	Screw terminal	Pole number	8
Connection cross-section	AWG 28 – AWG 12	Dimensions (w × h × d)	40.6 mm × 15.5 mm × 18.2 mm
Connection cross-section	0.08 – 2.5 mm²	Certifications	cURus
Housing material	PA 6.6 (UL 94 V-0)		Appr. UL File-No. E121004
Color of the housing	black		
Operating voltage	max. AC/DC 300 V	**General ambient conditions**	
Operating current	max. 12 A	Operation temperature range	-40 °C … +85 °C
Mounting	Pluggable, on LCOS function housing	Storage temperature range	-40 °C … +85 °C
Installation position	Any	Degree of protection	IP20 (EN 60529)

Part No.	Type	Weight/unit kg	PU (units)
780922.002.2	LCOS-ZB-KL-SS-508-25-8	0.1	10

Dimensions

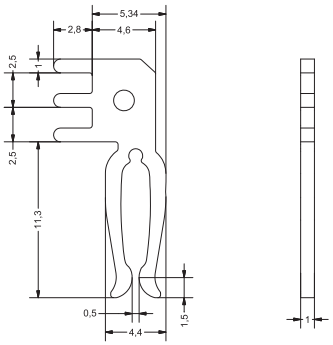


LCOS PCB contact
matches LCOS power module
1-pin

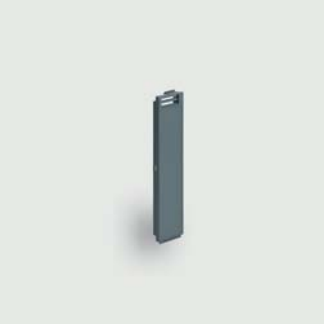
General		Standards	IEC 60068-2-42, 43, 8, 27
Design	PCB contact		EN 60064-1
Operating voltage	max. AC/DC 500 V		EN 50175
Operating current	max. AC/DC 10 A		EN 50124-1
Mounting	DIN rail mountable TS35 with interlock (EN 60715)	**General ambient conditions**	
		Operation temperature range	-40 °C … +85 °C
Contact material	CuCrSiTi	Storage temperature range	-40 °C … +85 °C
Pole number	1		

Part No.	Type	Weight/unit kg	PU (units)
780962.000.4	LCOS-ZB-LPK-00	0.001	100

Dimensions



Replace front plate



General
Mounting

DIN rail mountable TS35
with interlock
(EN 60715)

Part No.	Type	Application	PU (units)
780600.225.3	LCOS-ZB-FPL-225-00-1	Function housing 22.5 mm	50
780600.225.4	LCOS-ZB-FPL-225-00-1	Function housing 22.5 mm	100
780600.350.3	LCOS-ZB-FPL-350-00-1	Function housing 35 mm	50
780600.350.4	LCOS-ZB-FPL-350-00-1	Function housing 35 mm	100

Attachment screws data/power module

General
Mounting

DIN rail mountable TS35
with interlock
(EN 60715)

Part No.	Type	PU (units)
780991.000.4	LCOS-ZB-Schraube-00	100

Coding pins

General
Mounting

DIN rail mountable TS35
with interlock
(EN 60715)

Part No.	Type	PU (units)
780990.000.3	LCOS-ZB-Codier	50

Laboratory printed circuit board

General

Mounting	DIN rail mountable TS35 with interlock (EN 60715)

Part No.	Type	PU (units)
780963.000.2	LCOS-ZB-EB-01	10

Cover plate

Part No.	Type	PU (units)
780600.000.4	LCOS-ZB-AD-00-1	100

Labeling system

General

Material	PA 6.6 (UL 94 V2)
Housing material	PA 6.6
Mounting	any plug-in
Installation position	Vertical
MTBF	690000 h
Certifications	UL 94

General ambient conditions

Operation temperature range	-40 °C … +100 °C
Storage temperature range	-40 °C … +100 °C

Part No.	Type	Design	Dimensions	Color	PU (units)
780981.000.2	LCOS-ZB-BZS-white-00	200 tabs	5 × 5 mm	white	10
780982.000.2	LCOS-ZB-BZS-red-00	200 tabs	5 × 5 mm	red	10
780983.000.2	LCOS-ZB-BZS-blue-00	200 tabs	5 × 5 mm	blue	10
780985.000.2	LCOS-ZB-BZS-white-12/6	120 tabs	12 × 6mm	white	10

LCOS-CC Installation instructions

As an intelligent solution, the LCOS system allows the simple and fast assembly of the components to create a uniform and modular system. The selected solution can be installed on the DIN rail ready for use in a few simple steps.

The following description of an installation process includes a block module with various LCOS products in a random design. Regardless of how many or which LCOS products your system has, the installation process is always the same.

Step 1:
• Click the selected function carriers into the DIN rail
• Connect the feed module and the function carrier to the orange straps on the lower side of the module

Step 2:
Close the last function carrier of the modular model with a cover plate.

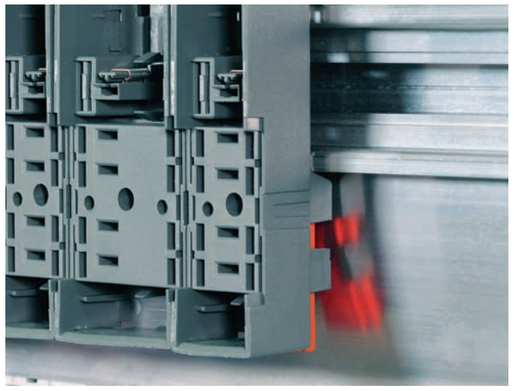


Figure **without** cover plate

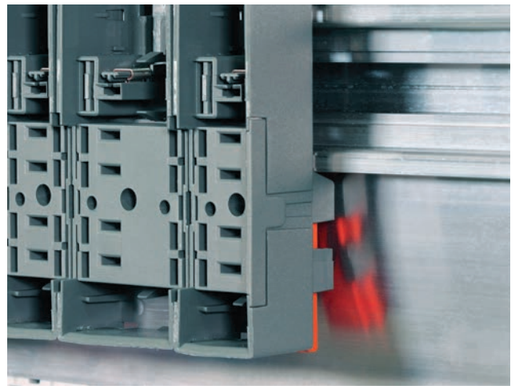
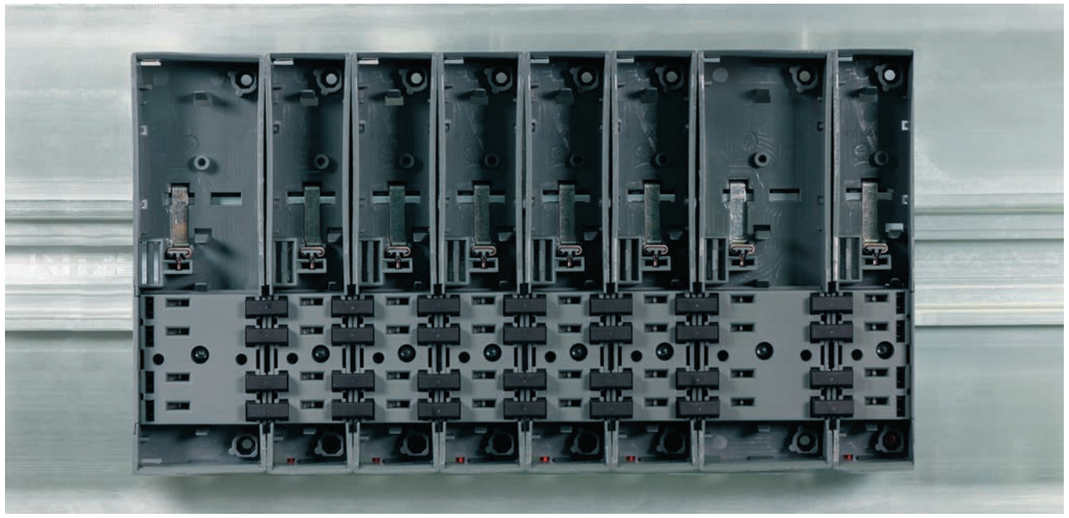


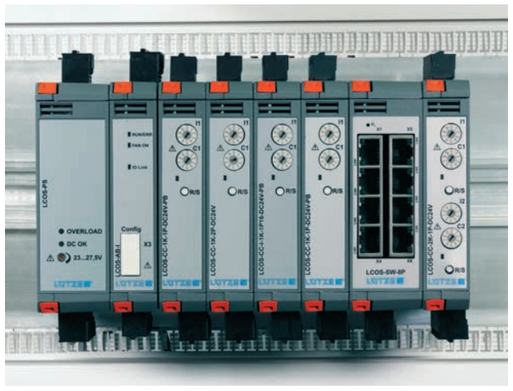
Figure **with** cover plate

LCOS-CC Installation instructions

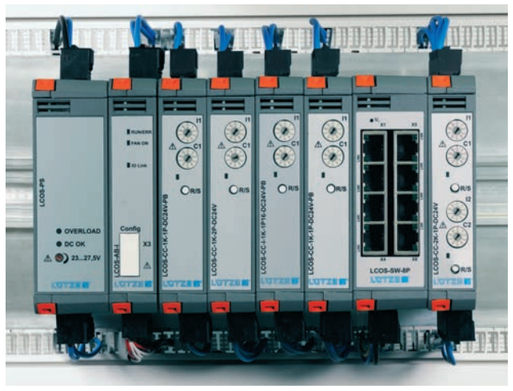
Step 3:
Use of the respective power jumpers in the lower area of the Powerbus.



Step 4:
Insert the LCOS modules in the function carrier and lock the orange straps on the upper and lower side of the module.



Step 5:
Wiring of the LCOS modules. There is more information about the wiring in the enclosed information or the data sheets.



More Informationen in
Control Download

LCOS-CCI Installation instructions

The LCOS system is an intelligent and modular solution that allows the simple and fast assembly of the components to create a uniform field bus system. The selected solution can be installed on the DIN rail ready for use in a few simple steps.

The following description of an installation process includes a block module with various LCOS products in a random design and a field bus connection. Regardless of how many or which LCOS products your system has, the installation process is always the same.

Step 1:
• Click the selected function carriers into the DIN rail
• Connect the feed module and the function carrier to the orange straps on the lower side of the module.

Step 2:
Close the last function carrier of the modular model with a cover plate.

Figure **without** cover plate

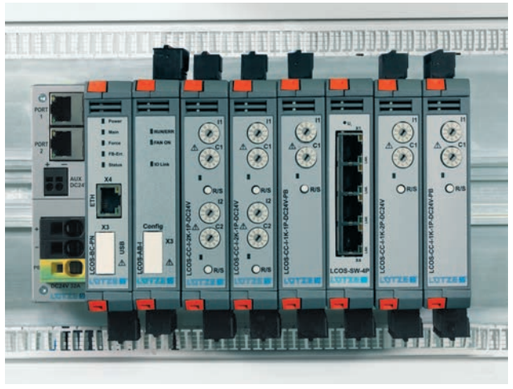
Figure **with** cover plate

LCOS-CCI Installation instructions

Step 3:
Use of the required power jumpers in the lower area (Powerbus) and the data jumpers in the upper area (data bus).

Step 4:
• Insert the LCOS modules in the function carrier and lock the orange straps on the upper and lower side of the module.
• **NOTE:** In the LCOS-CCI System, the corresponding bus coupler must always be positioned in the first position after the feed module.

Step 5:
• Wiring of the LCOS modules. There is more information about the wiring in the enclosed information or the data sheets.
• **NOTE:** The data bus of the field bus connection requires a separate DC 24 V power supply at the AUX DC 24 connections.
• Software configuration: All required files are in the download area on www.luetze.com and under the QR code stated below, with more information in the LCOS manual.



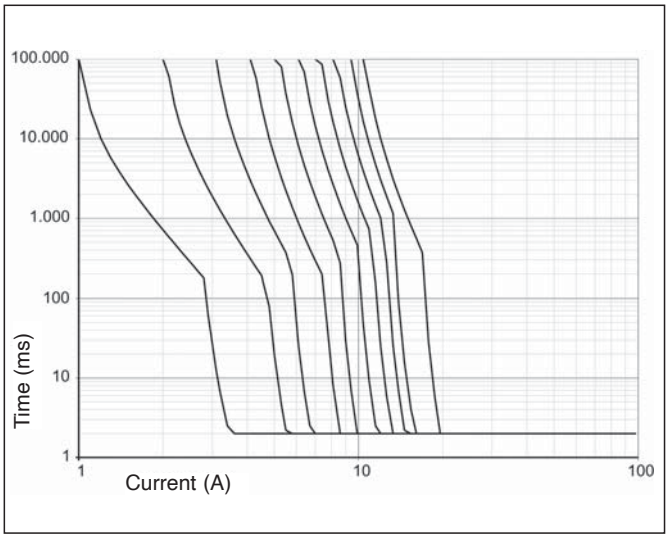
LOCC-Pads Software
from LÜTZE

LCOS-CC / LCOS-CCI · Characteristic Curves

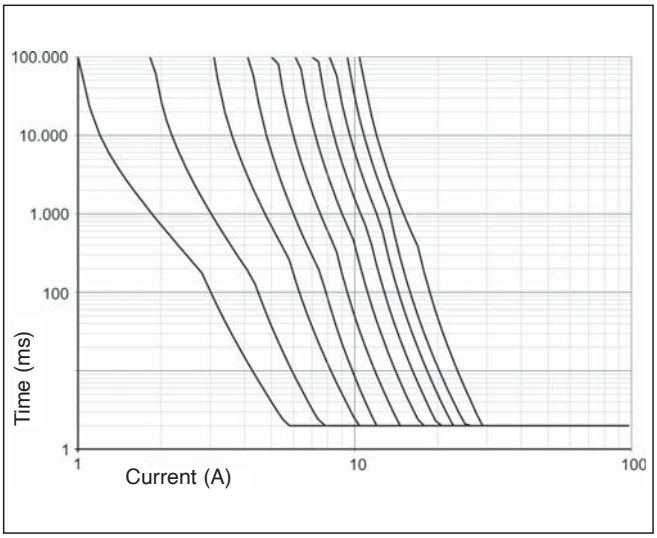
All devices have the same characteristic curves

1-10 A (6A)

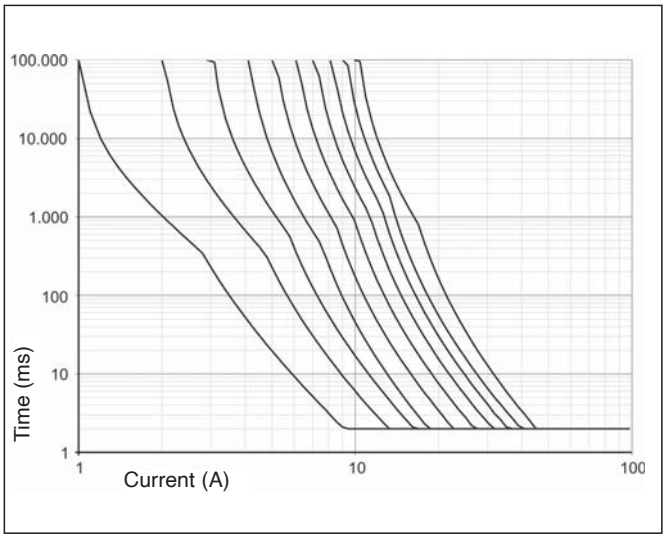
Switch position 1: Characteristic fast



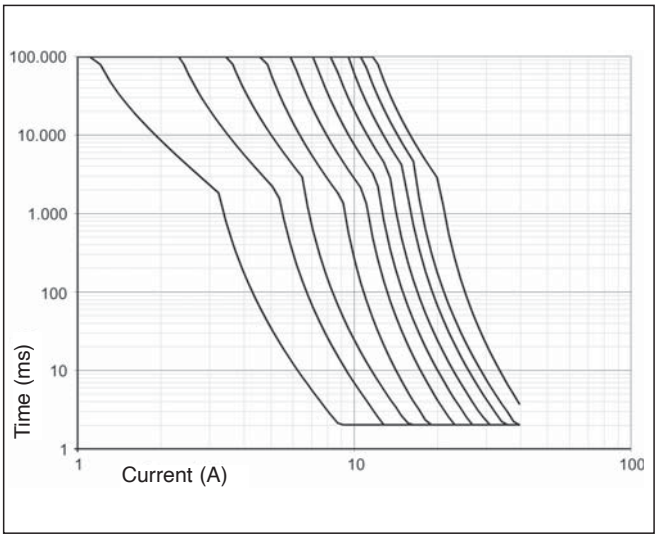
Switch position 2: Characteristic medium



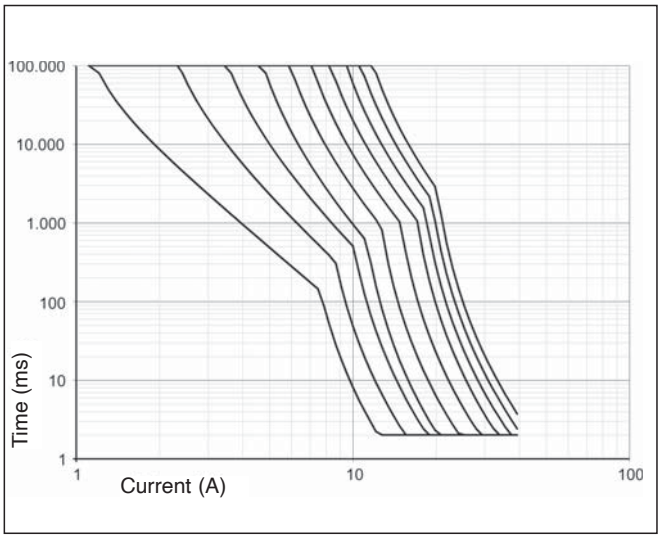
Switch position 3: Characteristic slow-1



Switch position 4: Characteristic slow-2



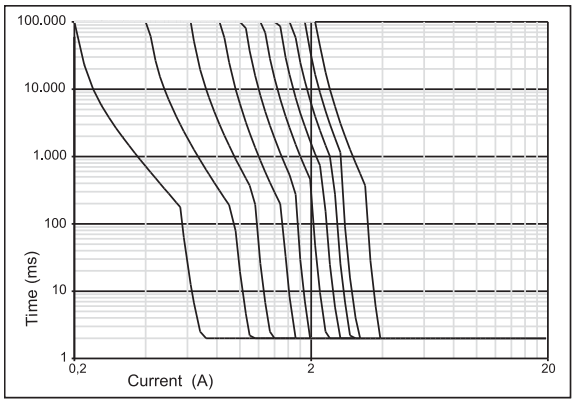
Switch position 5: Characteristic slow-3



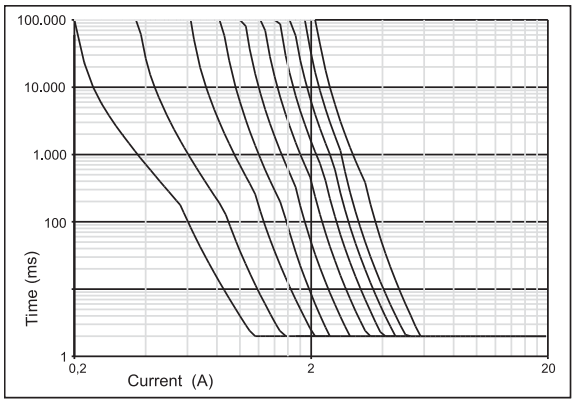
LCOS-CC / LCOS-CCI · Characteristic Curves

Characteristic Curves 0-2 A

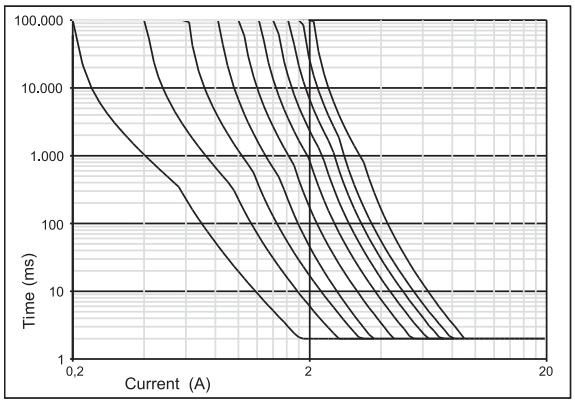
Switch position 1: Characteristic fast



Switch position 2: Characteristic medium

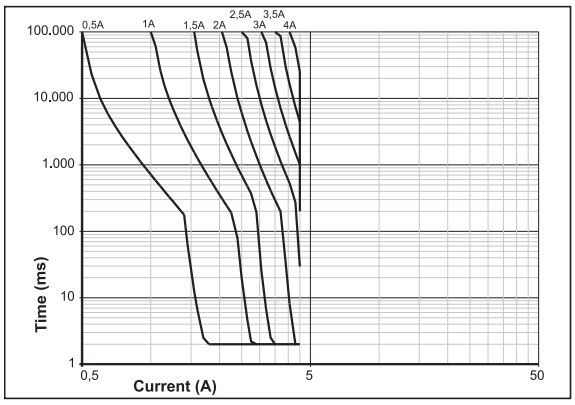


Switch position 3: Characteristic slow

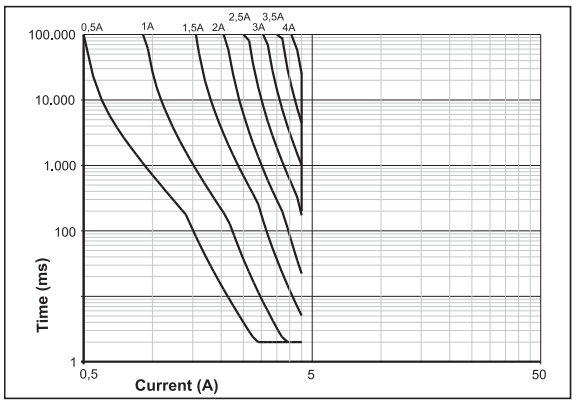


Characteristic Curves NEC Class 2

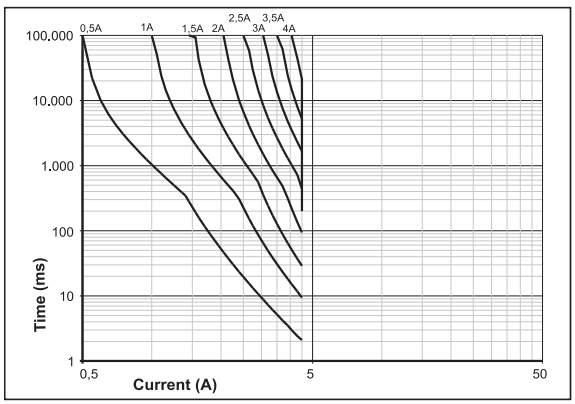
Switch position 1: Characteristic fast



Switch position 2: Characteristic medium



Switch position 3: Characteristic slow



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Germany
Friedrich Lütze GmbH
Postfach 12 24 (PLZ 71366)
Bruckwiesenstraße 17-19
D-71384 Weinstadt
Tel.: +49 71 51 60 53-0
Fax: +49 71 51 60 53-277(-288)
info@luetze.de

USA
LUTZE INC.
13330 South Ridge Drive
Charlotte, NC 28273
Tel.: +1 704 504-0222
Fax: +1 704 504-0223
info@lutze.com

United Kingdom
LÜTZE Ltd.
Unit 3 Sandy Hill Park
Sandy Way, Amington
Tamworth, Staffs, B77 4DU
Tel.: +44 1827 313330
Fax: +44 1827 313332
sales.gb@lutze.co.uk

Austria
LÜTZE Elektrotechnische Erzeugnisse Ges.m.b.H.
office@luetze.at

Switzerland
LÜTZE AG
info@luetze.ch

France
LUTZE SASU
lutze@lutze.fr

Spain
LUTZE, S.L.
info@lutze.es

China
Luetze Trading (Shanghai) Co.Ltd.
info@luetze.cn

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