Control Solutions

Industrial Power Supplies

Delta Series Power Supplies

Compact Series Power Supplies / USP

LOCC-Box / LCOS CC – Intelligent DC Circuit Protection

SYSTEMATIC TECHNOLOGY

Efficiency in Automation

Cable • Connectivity • Cabinet • Control

Welcome to LÜTZE

Cable Solutions

Connectivity Solutions

Cabinet Solutions

Control Solutions

Transportation Solutions

Efficiency in Automation - A reflection of our company philosophy

As an experienced specialist in automation technology, with solutions for flexible and high flexing cables, cable assemblies, interfaces, current control and cabinet wiring, we have had a focus on efficiency for many years.

LÜTZE defines Efficiency in Automation field as the use of sustainable products and solutions to further increase the performance of our products in our customers applications.

We realise this by using components for highly efficient control systems, products with above average life cycles and raising energy efficiency in control cabinets by means of the LSC wiring system.

Efficiency in Automation reflects our efforts in striving for efficient working relationships with our customers: in a medium sized family owned company we have short communcation channels and a high level of manufacturing competence.

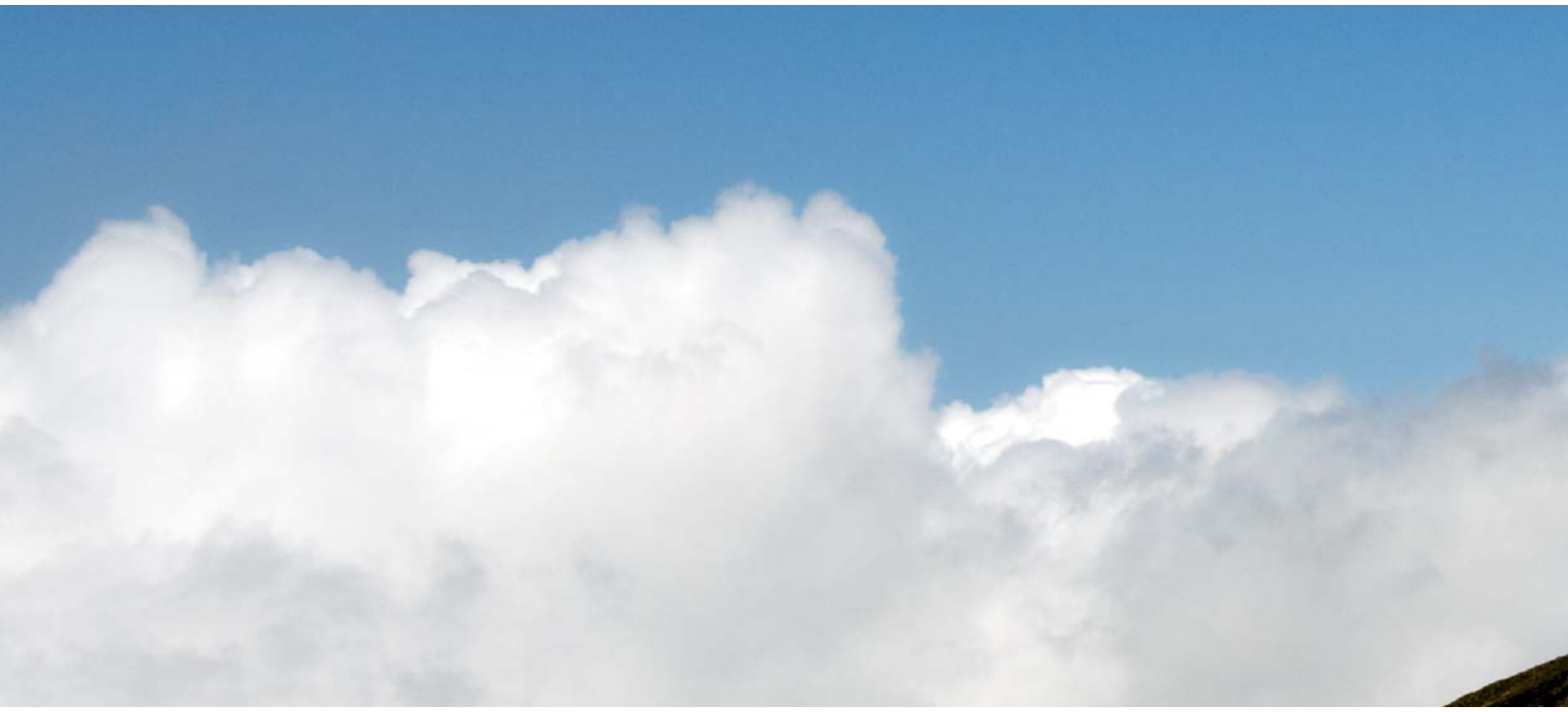
The value of a product or a solution from LÜTZE is determined by its sustainable qualities. Every innovation will only be successful in the future if it has a long term positive effect. Therefore, we provide long lasting as well as highly efficient components.

Thus LÜTZE creates value through efficiency. LÜTZE provides answers and demonstrates how to handle resources responsibly, with our environment and our future in mind. **LÜTZE - Efficiency in Automation**

For more information on our solutions, please visit www.luetze.com or www.lutze.com

LÜTZE®
SYSTEMATIC TECHNOLOGY

Business Management:
Sustainable and forw



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.

SkyBLUE
LÜTZE

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

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

Environmental Management
DQS
ISO 14001

BLUEcoMPETENCE
Alliance Member
Partner of the Engineering Industry Sustainability Initiative

RoHS

Power Supplies from LÜTZ

Energy efficient and space s

Comprehensive range of industrial power supplies

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

Extremely compact

Power Boost

Power range from 10 W up to 2400 W

Output voltages from DC 5 V up to DC 72 V.

Control Solutions

E:
aving


OUTPUT
24VDC/40A
DC OK
24V/1A
23...27.5V
DC OK
ALARM
IND.CONT.EQ.
4WX9
LISTED
E249179
HICCUP
C.C.
CPSB3-960-24
722811
INPUT
3x 400-500VAC
2.4-2.1A
50-60Hz
L1 L2 L3

Power Supplies · Product Overview

DELTA

DELTA

LCOS Modular

LCOS Modular

Compact 1-phase

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	Pluggable screw	Part number	Type	Page
•				•	•											89	•	•			•					•	779001.1213	LCOS-PS-1-30-24	20
•				•	•											89	•	•			•					•	779001.0213	LCOS-PS-1-30-24	20
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•				•			•									90	•	•			•					•	779001.1313	LCOS-PS-1-60-24	21
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•				•					•							93	•	•			•					•	779001.1413	LCOS-PS-1-120-24	22
•				•					•							93	•	•			•					•	779001.0413	LCOS-PS-1-120-24	22
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•						40										87					•				•		722787	CPSF-1-40-24	24
•								•								89					•				•		722789	CPSF-1-80-24	25
•									•							87	•	•			•					•	723500	CPSB-1-120-24	26
•									•							90	•	•				•				•	722784	CPSB-1-120-48R	27
•	•								•							86	•	•			•					•	722995	CPSB2-120-24	28
•										•						87	•	•			•					•	723600	CPSB1-240-24	29
•										•						90	•	•				•				•	722786	CPSB1-240-48R	30
			•							•						91	•	•			•					•	722996	CPSB-123-240-24	31
•											•					93	•	•			•					•	723700	CPSB1-480-24	32
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		•									•					94	•	•			•					•	722800	CPSB3-500-24	34
		•									•					94	•	•				•				•	722815	CPSB3-500-48	34
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		•												•		92	•	•				•			•		722816	CPSB3-2400-48	38
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•					•											84				•					•		722768	DRA 30-12A	46
•					•											84					•				•		722753	DRA 30-24A	46
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•																86				•					•		722769	DRA 60-12A	48
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•							•									89						•			•		722776	DRA 60-48A	48
•										•						89					•					•	722759	DRA 240-24B	51
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		•											•			92					•				•		722806	WRA 960-24	55
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•									•							86					•					•	722758	DRAN 120-24B	49
•									•							86						•				•	722777	DRAN 120-48B	49

Power Supplies · Product Overview

DC USV

Buffer module

LOCC-Box

LCOS CC

DC - USP Supply

Lead based	NiMH	Li-ion	Capacitive (Buffer)	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	CNUPS 24	41
•	•	•		•	•	•				•		•	•		•	•			•		723100	CDCU20 12/24DC UPS	42
			•		•	•	•	•		•									•		723120	CBU150	43
														•							723115	CNBP30	44

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 Profinet	Gateway EthernetCAT	Profinet bus coupler	EtherCAT bus coupler	Ethernet IP bus coupler	Spring-cage connection	Pluggable Push-In	Pluggable Screw	Part number	Type	Page
•		•		•	•					•				•		•									•			716400	LOCC-Box FB7-6400	62
•		•		•	•					•				•		•									•			716401	LOCC-Box FB7-6401	62
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•		•		•	•						•			•			•									•		773100.1121	LCOS-CCI-1K1P16DC24	102
																						•						778000.1301	LCOS-BC-PN	103
																							•					778000.1401	LCOS-BC-EC	104

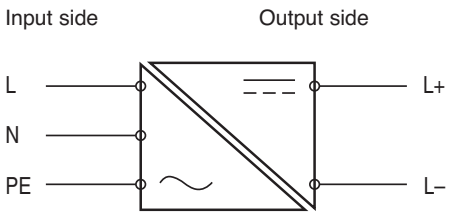
Power Supplies · Basics

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

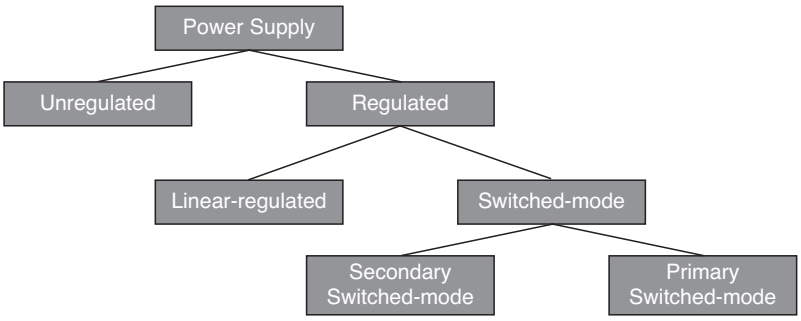
Regardless of the technology employed, power supplies are devices with an input side and an isolated output side.



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.

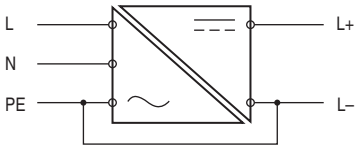
2.3 Safe isolation

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.

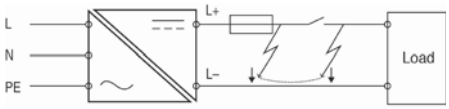
2.4 Secondary grounding

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.



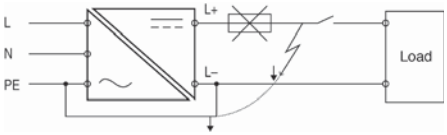
Secondary grounding

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.

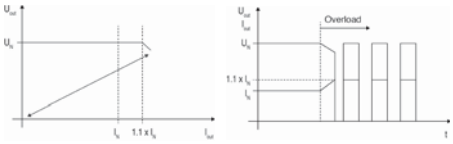
Overload means that the current required by the loads exceeds the nominal current of the power supply.

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:

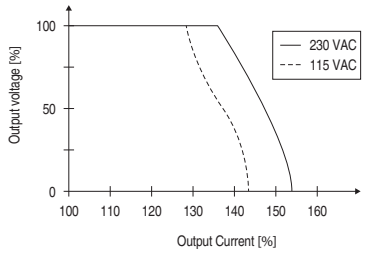
Fold-back characteristic/Hiccup mode

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.



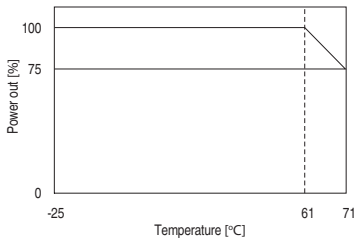
U/I characteristic

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. The Delta series from Lütze is rated for ambient temperatures up to 70°C for example, with derating beginning at 60°C. The reduction in output power is 2.5%/°C.



Example: Derating curve of Lütze of Delta series

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

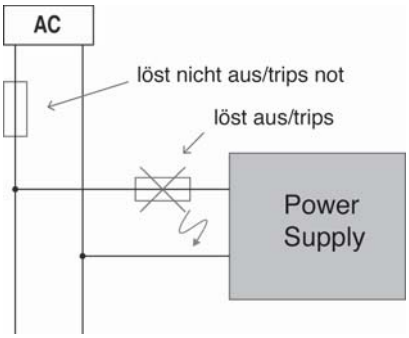
Alongside the output behaviour described in section 4, there is a U/I characteristic with an additional power reserve. However, all these output behaviour modes are ultimately not suitable for safe activation of standard line protection equipment. The reason lies in the technical design of the equipment. 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

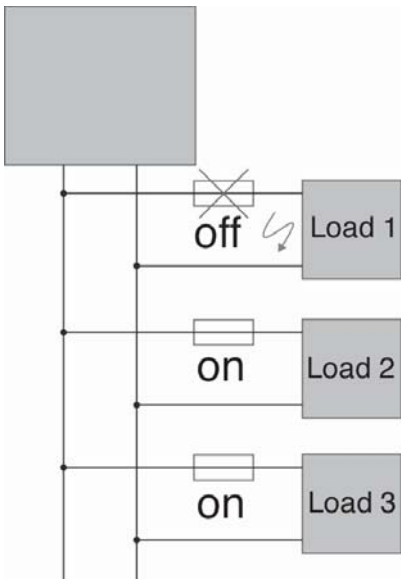
In case of series-connected fuses, the tripping coordination of fuses is considered as selective if only the fuse installed nearest to the fault trips. Fuses that are located nearer to the energy feeding point do not trip. This guarantees that as many system parts as possible remain operative in the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

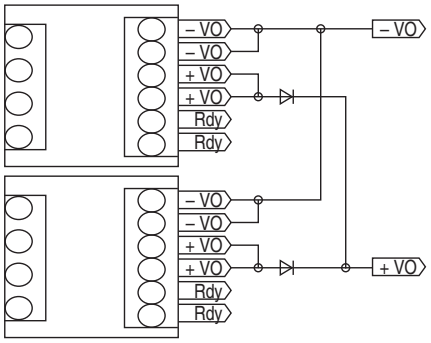
10.1 Parallel connection of power supplies for increased capacity Operation

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 LÜTZE Delta series the isolating diodes are built-in to the output. 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.

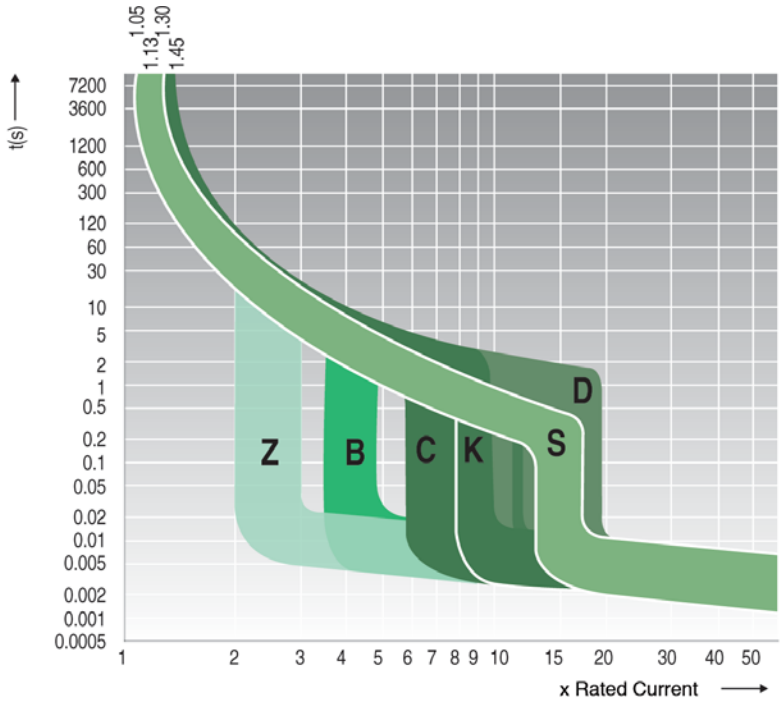
Operating behaviour of primary switching controllers

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 overcurrents, 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.

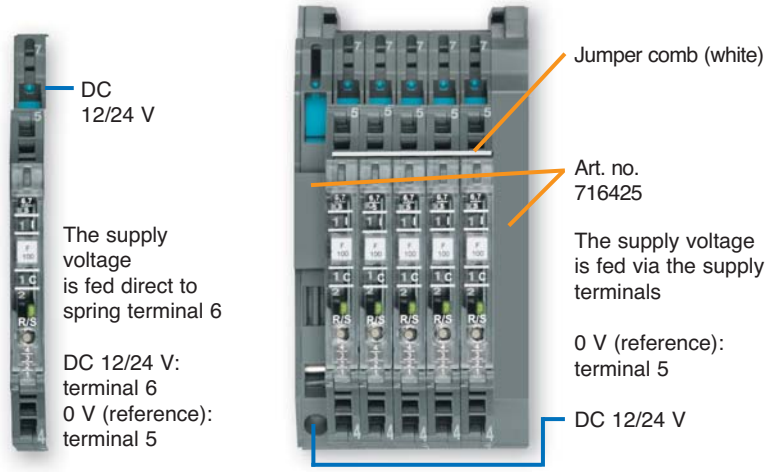
LOCC-Box
Practical and efficient

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!

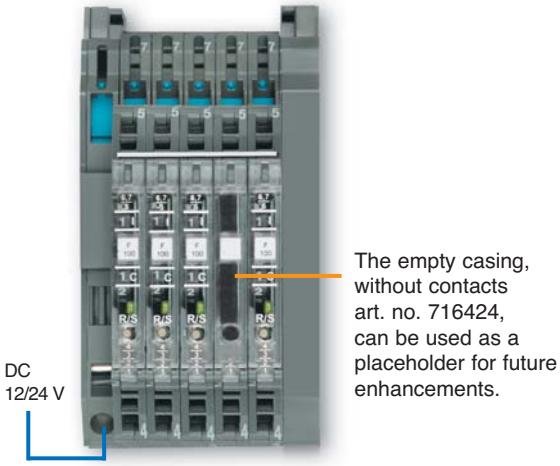
Here, too, the LOCC-Box system is setting new standards. The single-channel design with all the functionality described offers the highest possible flexibility. As shown below, customers can decide whether the supply is provided by each module individually or via the system supply (infeed terminal, copper 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

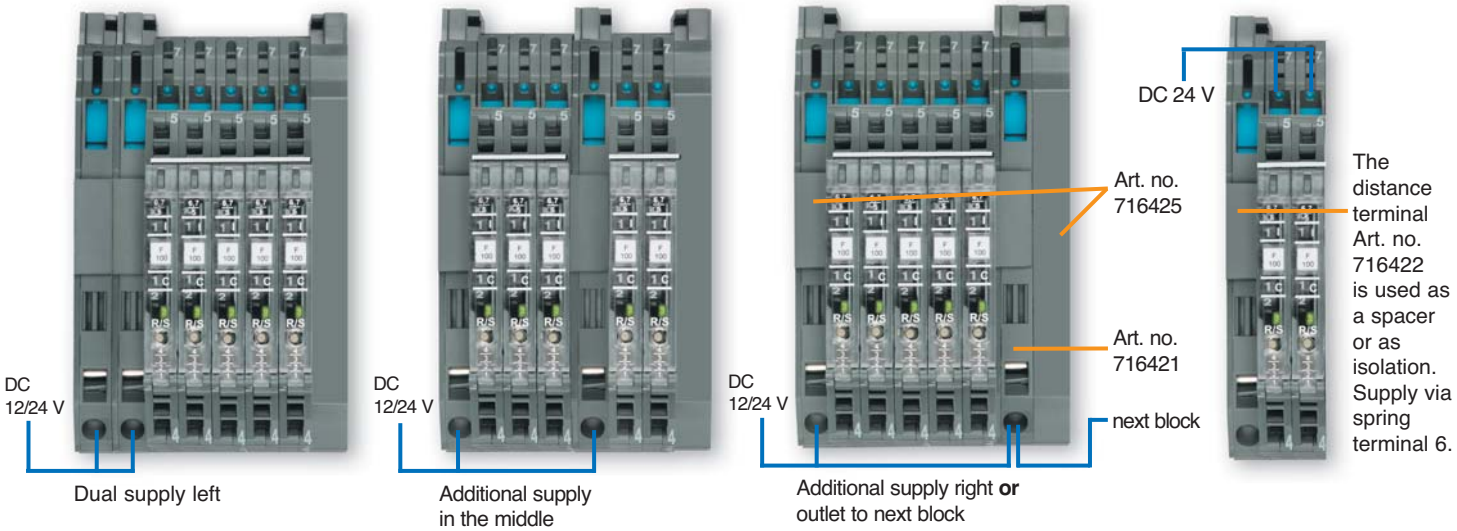


Use with additional supply terminals

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.

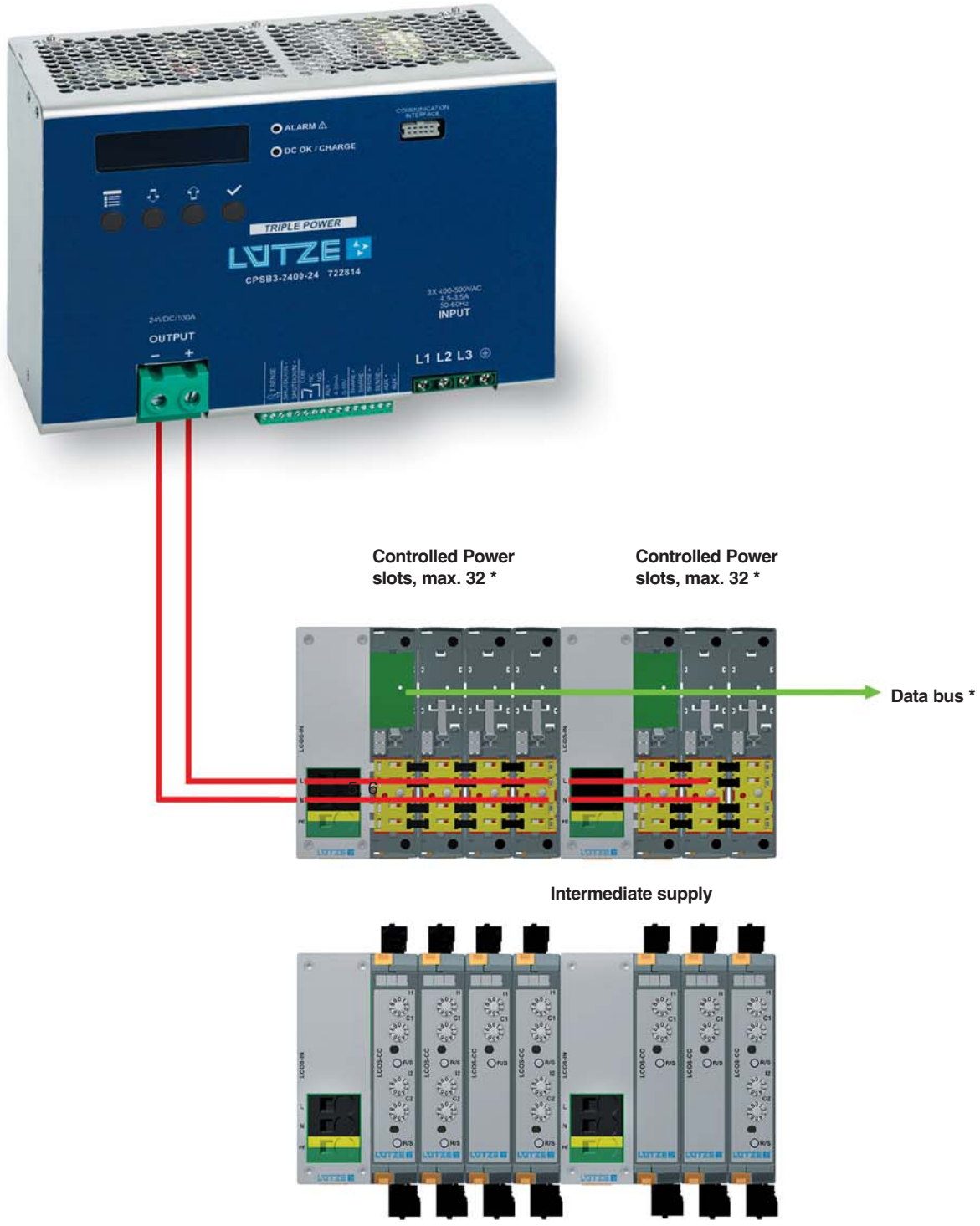
Individual construction with distance terminal



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: 722811 DC 24 V, 40 V
DC 24 V, 100 A.

Standard Application
with supply set, art. no. 716425

PIN no. 1 1 1 1 1 1 1 1 1 1 1 1

Load
Consumer

PIN-Nr. 5, 6

5, 6

Construction of the 0 V Collective terminal
with supply set
Art. no. 716425

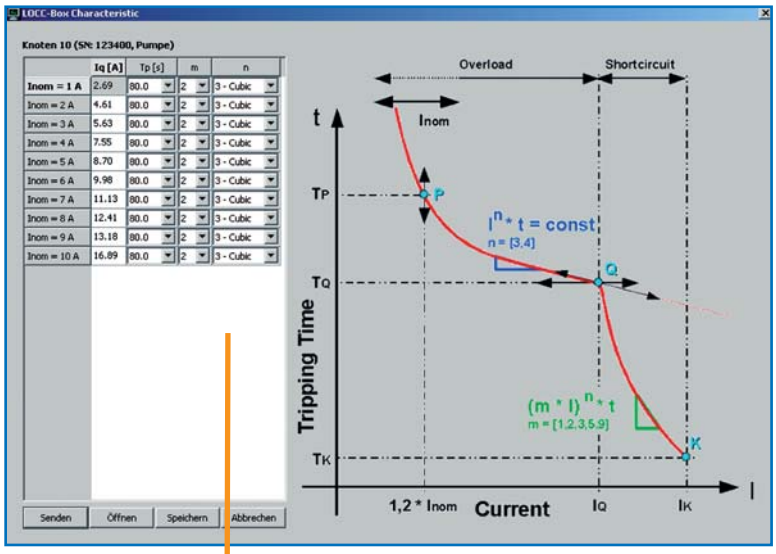
1-4

1-4

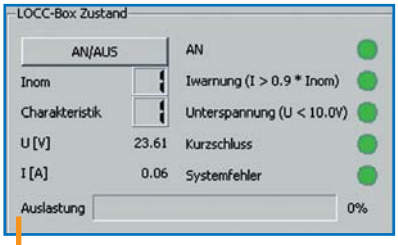
LOCC-Pads · Monitoring software

LOCC-Pads*

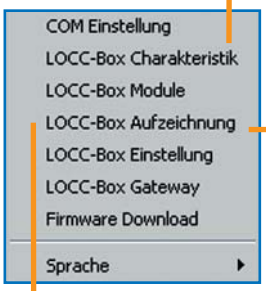
Software for the parameterisation of the LOCC-Box-Net, as well as the analysis and diagnosis of DC 12 / 24 V circuits



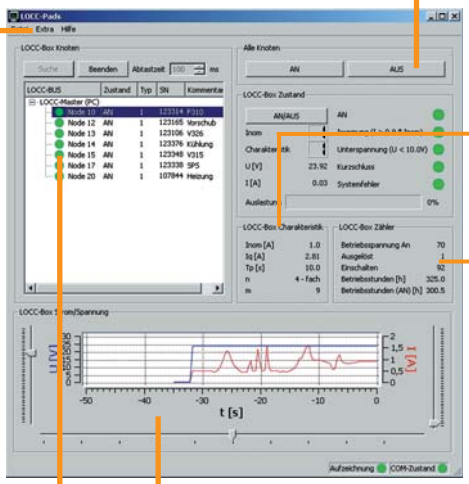
Adjustment parameters for the parameterisable characteristic No. 10



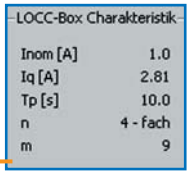
Displays the operating status, current range / characteristic, the load capacity of the characteristic, as well as the updated current and voltage values.



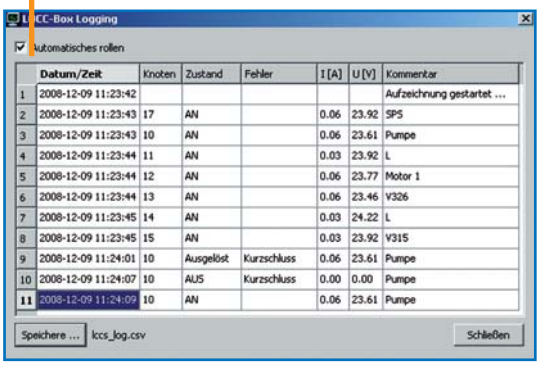
Menu "Extra"



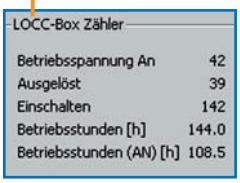
Overall view



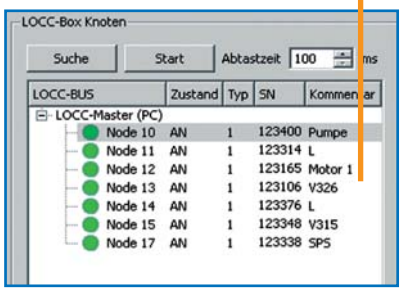
Displays the parameters of the selected characteristic curve.



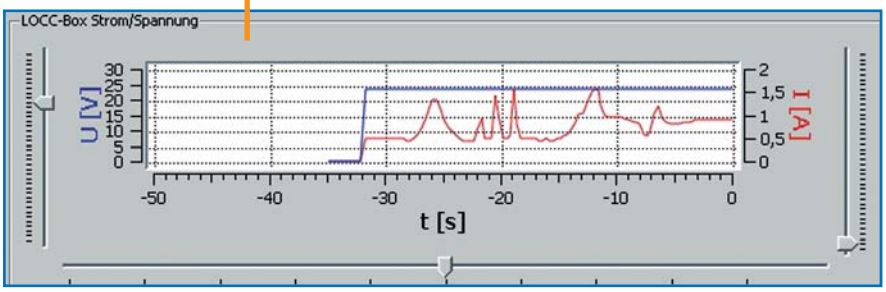
Recording of all results such as "ON", "OFF" or "SHORT CIRCUIT" with date and time



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:

The new 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 10 W to 120 W

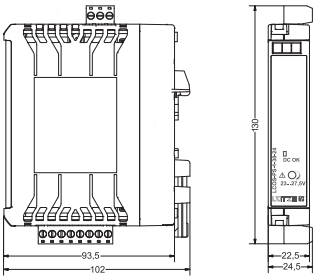
Screw or spring type termination, plug-in

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

Power supply · LCOS-PS controlled, 30 Watt

Primary switchmode power supply, PFC, Single-phase
Input: Wide range input AC 88 - 264 V
Output: 24 V, adjustable

Dimensions



Description		Part-No.		Type	PU
Complete device screw terminal					
Output voltage/current	DC 24 V/1.25 A	779001.1213	**S***	LCOS-PS-1-30-24	1
Function component screw connection (without function carrier)					
Output voltage/current	DC 24 V/1.25 A	779001.0213	**A***	LCOS-PS-1-30-24	1
Complete device Push-in					
Output voltage/current	DC 24 V/1.25 A	779101.1213	**A***	LCOS-PS-1-30-24	1
Function component Push-In (without function carrier)					
Output voltage/current	DC 24 V/1.25 A	779101.0213	**S***	LCOS-PS-1-30-24	1

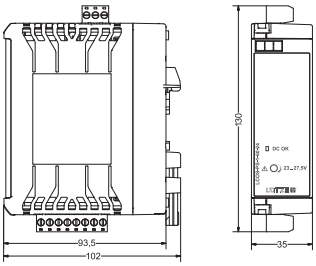
Input	**779001.1213**	**779001.0213**	**779101.1213**	**779101.0213**
Number of phases	1			
Rated voltage U_N	AC 88–264 V			
Line frequency	50 – 60 Hz			
Rated current I_N	0.35 A @ AC 230 V			
Inrush current	<10 A @ AC 230 V			
Internal fuse	T 2 A/AC 250 V			
External fuse	Mini-circuit breaker: B 6 A			
Power Factor Correction P.F.C.	0.59			
Output				
Rated voltage U_N	DC 24 V			
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 %			
Protection device	Over voltage protection			
Over voltage protection	<32 V			
Power loss (nominal operations) max.	–			
Short circuit	Hiccup			
Status indication				
Status display output	DC ON, green ≥21.6 V			
Monitoring				
Protection	DC ON, open collector			
Switching voltage	DC 30 V			
Switching current	max. 0.100 A			
Remote input				
control voltage	DC 24 V			
Control current	< DC 9 mA			
ON/OFF	11 V – 30 V: OFF, DC 5 V: ON			
General				
Insulation voltage output / ground	DC 0.5 kV_{eff}			
Insulation voltage input / output	AC 2.5 kV_{eff}			
Insulation voltage input / ground	AC 1.5 kV_{eff}			
Operation temperature range	-25 °C … +70 °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	20 – 95 % RH, not condensing			
Cooling	Air convection			
Colour of the housing	pebble grey			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)			
Mounting	DIN rail mountable TS35 (EN 60715)			
Application height	2000 m (-7.5 W/1000 m or 5 °C/1000 m)			
Installation position	vertical			
Protection class	IP20			
Protection class	I (SELV, PELV)			
Over voltage category	II (IEC 664-1)			
Degree of polution	2			
Weight	0.180 kg/piece			
Connection device	0.20 mm^2 – 2.5 mm^2 AWG 24 – AWG 12 input: 3-pin output: 8-pole			
Dimensions (w × h × d)	22.5 × 100.0 × 110.0 mm			
Approvals	UL, cUL, cULus in preparation			
Standards	IEC 60950, IEC 950, EN 60950, EN 61000-6-2 (2005), EN 60100-6-4 (2007), EN 61000-4-2/3/4/5/6/11, EN 61000-5-5, EN 50178, EN 61558			

* **S** Article on stock
A Article available at short notice
R Article on request

Power supply · LCOS-PS controlled, 60 Watt

Primary switchmode power supply, PFC, Single-phase
Input: Wide range input AC 88 - 264 V
Output: 24 V, adjustable

Dimensions



Description		Part-No.		Type	PU
Complete device screw terminal					
Output voltage/current	DC 24 V/2.5 A	779001.1313	**S***	LCOS-PS-1-60-24	1
Function component screw connection (without function carrier)					
Output voltage/current	DC 24 V/2.5 A	779001.0313	**A***	LCOS-PS-1-60-24	1
Complete device Push-in					
Output voltage/current	DC 24 V/2.5 A	779101.1313	**A***	LCOS-PS-1-60-24	1
Function component Push-In (without function carrier)					
Output voltage/current	DC 24 V/2.5 A	779101.0313	**S***	LCOS-PS-1-60-24	1

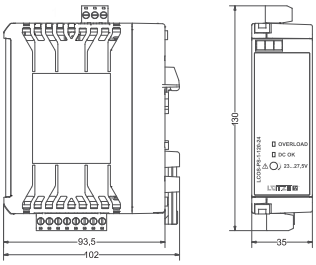
Input	**779001.1313**	**779001.0313**	**779101.1313**	**779101.0313**
Number of phases	1			
Rated voltage U_N	AC 88–264 V			
Line frequency	50 – 60 Hz			
Rated current I_N	0.60 A @ AC 230 V			
Inrush current	<10 A @ AC 230 V			
Internal fuse	T4 A/AC 250 V			
External fuse	Mini-circuit breaker: B 6 A			
Power Factor Correction P.F.C.	0.6			
Output				
Rated voltage U_N	DC 24 V			
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 %			
Protection device	Over voltage protection			
Over voltage protection	<32 V			
Power loss (nominal operations) max.	–			
Short circuit	Hiccup			
Status indication				
Status display output	DC ON, green ≥21.6 V			
Monitoring				
Protection	DC ON, open collector			
Switching voltage	DC 30 V			
Switching current	max. 0.100 A			
Remote input				
control voltage	DC 24 V			
Control current	< DC 9 mA			
ON/OFF	11 V – 30 V: OFF, DC 5 V: ON			
General				
Insulation voltage output / ground	DC 0.5 kV_{eff}			
Insulation voltage input / output	AC 2.5 kV_{eff}			
Insulation voltage input / ground	AC 1.5 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	20 – 95 % RH, not condensing			
Cooling	Air convection			
Colour of the housing	pebble grey			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)			
Mounting	DIN rail mountable TS35 (EN 60715)			
Application height	2000 m (-7.5 W/1000 m or 5 °C/1000 m)			
Installation position	vertical			
Protection class	IP20			
Protection class	I (SELV, PELV)			
Over voltage category	II (IEC 664-1)			
Degree of polution	2			
Weight	0.250 kg/piece			
Connection device	0.20 mm^2 – 2.5 mm^2 AWG 24 – AWG 12 input: 3-pin output: 8-pole			
Dimensions (w × h × d)	35.0 × 100.0 × 110.0 mm			
Approvals	UL, cUL, cULus in preparation			
Standards	IEC 60950, IEC 950, EN 60950, EN 61000-6-2 (2005), EN 60100-6-4 (2007), EN 61000-4-2/3/4/5/6/11, EN 61000-5-5, EN 50178, EN 61558			

* **S** Article on stock
A Article available at short notice
R Article on request

Power supply · LCOS-PS controlled, 120 Watt

Primary switchmode power supply, PFC, Single-phase
Input: Wide range input AC 88 - 264 V
Output: 24 V, adjustable

Dimensions



Description		Part-No.		Type	PU
Complete device screw terminal					
Output voltage/current	DC 24 V/5 A	779001.1413	**S***	LCOS-PS-1-120-24	1
Function component screw connection (without function carrier)					
Output voltage/current	DC 24 V/5 A	779001.0413	**A***	LCOS-PS-1-120-24	1
Complete device Push-in					
Output voltage/current	DC 24 V/5 A	779101.1413	**A***	LCOS-PS-1-120-24	1
Function component Push-In (without function carrier)					
Output voltage/current	DC 24 V/5 A	779101.0413	**S***	LCOS-PS-1-120-24	1

Input	**779001.1413**	**779101.0413**	**779101.1413**	**779001.0413**
Number of phases	1			
Rated voltage U_N	AC 88–264 V			
Line frequency	47 – 63 Hz			
Rated current I_N	0.70 A @ AC 230 V			
Inrush current	<20 A @ AC 230 V			
Internal fuse	T4 A/AC 250 V			
External fuse	Mini-circuit breaker: B 6 A			
Power Factor Correction P.F.C.	>0.96			
Output				
Rated voltage U_N	DC 24 V			
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 %			
Ripple and Noise	≤100 mV pp			
Hold up time	>20 ms			
Parallel / redundant mode	max. 4 devices / redundancy via decoupling diode			
Efficiency	>93 %			
Protection device	Over voltage protection			
Over voltage protection	35 V			
Power loss (nominal operations) max.	9 W @ 230 V			
Short circuit	Current limit (overload), Hiccup (short-circuit)			
Status indication				
Status display output	DC ON, green ≥21.6 V I_{out} > 110 % I_N			
Monitoring				
Protection	DC ON, open collector			
Switching voltage	DC 30 V			
Switching current	max. 0.100 A			
Remote input				
control voltage	DC 24 V			
Control current	DC 5 mA			
ON/OFF	11 V – 30 V: OFF, DC 5 V: ON			
General				
Insulation voltage output / ground	DC 0.5 kV_{eff}			
Insulation voltage input / output	AC 3.0 kV_{eff}			
Insulation voltage input / ground	AC 1.5 kV_{eff}			
Operation temperature range	-25 °C … +70 °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	20 – 95 % RH, not condensing			
Cooling	Air convection			
Colour of the housing	pebble grey			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)			
Mounting	DIN rail mountable TS35 (EN 60715)			
Application height	2000 m			
Installation position	vertical			
Protection class	IP20			
Protection class	I (SELV, PELV)			
Over voltage category	II (IEC 664-1)			
Degree of polution	2			
Weight	0.350 kg/piece			
Connection device	0.20 mm^2 – 2.5 mm^2 AWG 24 – AWG 12 input: 3-pin output: 8-pole			
Dimensions (w × h × d)	35.0 × 100.0 × 110.0 mm			
Approvals	UL, cUL, cULus in preparation			
Standards	IEC 60950, IEC 950, EN 60950, EN 61000-6-2 (2005), EN 60100-6-4 (2007), EN 61000-4-2/3/4/5/6/11, EN 61000-5-5, EN 50178, EN 61558			

* **S** Article on stock
A Article available at short notice
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COMPACT Power Supplies

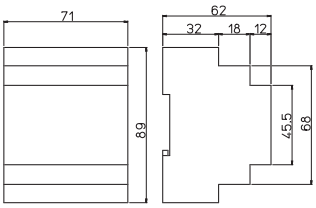
COMPACT Series

- One-, two- and three-phase
- 30 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 Listed
- SEMI F47

Power supply · regulated, 40 W

Primary switchmode power supply, PFC, Single-phase, Class 2
Input: wide-range input AC 90–264 V, DC 120–370 V
Output: DC 24 V

Dimensions



Description		Part-No.		Type	PU
Screw terminal					
Output voltage/current	DC 24 V/1.2 A	722787	**R***	CPSF-1-40-24	1

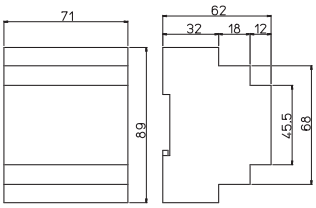
Input	**CPSF-1-40-24**
Rated voltage U_N	AC 115/230 V
Operation voltage range	AC 90–264 V / DC 120–370 V (DC 300 V, UL508)
Line frequency	47 – 63 Hz
Rated current I_N	0.9 A @ AC 100 V / 0.5 A @.AC 240 V
Inrush current	<30 A
Internal fuse	T 2 A/AC 250 V
External fuse	Mini-circuit breaker: <4 A
Power Factor Correction P.F.C.	>0.6
Output	
Rated voltage U_N	DC 24 V
Rated current I_N	2 A
Max. output current	3.5 A @ 24 V
Short-circuit current	–
Setting range $U_{out\ min.}/U_{out\ max.}$	–
Accuracy	±1 %
Load regulation	<0.5 %
Line regulation	–
Rise time	–
Temperature coefficient	–
Ripple and Noise	<50 mV pp
Hold up time	>20 ms @ AC 120 V / >60 ms @ AC 240 V
Status indication DC ON LED green	yes
Status indication DC LOW LED red	No
Parallel / redundant mode	max. 2 devices / via external decoupling diodes e.g. 722987
Efficiency	>85 % @ AC 120 V / >87 % @ AC 240 V
Heat dissipation	<6 W
Rated over load protection	yes
Over voltage protection	yes
Short circuit	Hiccup Mode
General	
Switching frequency	approx. 110 kHz
Insulation voltage input / output	AC 3.0 kV_{eff}
Insulation voltage input / ground	class 2, without PE
Insulation voltage output / ground	class 2, without PE
Insulation resistance at DC 500 V	– MΩ
Operation temperature range	-20 °C … +70 °C (Derating)
Derating	>55 °C: -0.35 W/°C
Storage temperature range	-25 °C … +85 °C
MTBF	750000 h: SN29500 / 250000 h: MIL HDBK 217F
Relative air humidity	20 – 90 % RH, not condensing
Dimensions (w × h × d)	71.0 × 89.0 × 62.0 mm
Cooling	Air convection, 20 mm distance top/bottom, 10 mm side
Housing material	Noryl (UL 94 V-0)
Mounting	DIN rail mountable TS35 (EN 60715)
Application height	–
Installation position	vertical
Protection class	IP20 (IEC 529, EN 60529)
Protection class	II (SELV, PELV)
Over voltage category	II
Degree of polution	2
Weight	0.200 kg/piece
Connection device	Screw terminal 0.20 mm^2 – 2.5 mm^2 max. 0.56 Nm
Approvals	cULus (E249179)
Standards	IEC 950, EN 60950, UL 60950, EN 61000-4-2/3/4/5/6/11, EN 61000-6-2, EN 61000-6-4, EN 50178, EN 61558, EN 61000-3-2, EN 50081-1, EN 50082-2, EN 55022, EN 55022 Class B, EN 55011B
Monitoring	
DC ON Control (Rdy)	–
Switching voltage	–
Switching current	–
Switching capacity	–
Isolation voltage	–

* **S** Article on stock
A Article available at short notice
R Article on request

Power supply · regulated, 80 W

Primary switchmode power supply, PFC, Single-phase, Class 2
Input: wide-range input AC 90–264 V, DC 100–345 V
Output: DC 24 V, adjustable

Dimensions



Description		Part-No.	Type	PU
Screw terminal				
Output voltage/current	DC 24 V/3 A	722789 **S***	CPSF-1-80-24	1

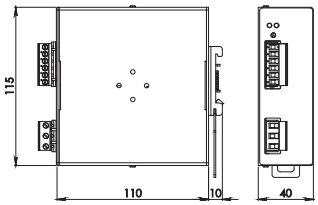
Input	**CPSF-1-80-24**
Rated voltage U_N	AC 115/230 V
Operation voltage range	AC 90–264 V / DC 100–345 V (DC 300 V, UL508)
Line frequency	47 – 63 Hz
Rated current I_N	1.4 A @ AC 100 V / 0.85 A @ AC 240 V
Inrush current	<30 A
Internal fuse	T 2 A/AC 250 V
External fuse	Mini-circuit breaker: C 4 A
Power Factor Correction P.F.C.	>0.6
Output	
Rated voltage U_N	DC 24 V
Rated current I_N	3.3 A
Max. output current	4 A @ 24 V
Short-circuit current	20 A
Setting range $U_{out\ min.}/U_{out\ max.}$	23.5-27.5 V
Accuracy	–
Load regulation	<1 %
Line regulation	–
Rise time	–
Temperature coefficient	–
Ripple and Noise	<50 mV pp
Hold up time	>10 ms @ AC 120 V / >30 ms @ AC 240 V
Status indication DC ON LED green	yes
Status indication DC LOW LED red	No
Parallel / redundant mode	max. 2 devices / via external decoupling diodes e.g. 722987
Efficiency	>87 % @ AC 120 V / >89 % @ AC 240 V
Heat dissipation	–
Rated over load protection	yes
Over voltage protection	yes
Short circuit	Hiccup Mode
General	
Switching frequency	approx. 70 kHz
Insulation voltage input / output	AC 3.0 kV_{eff}
Insulation voltage input / ground	class 2, without PE
Insulation voltage output / ground	class 2, without PE
Insulation resistance at DC 500 V	– MΩ
Operation temperature range	-20 °C … +70 °C (Derating) (55 °C UL 508)
Derating	>55 °C: -0.9 W/°C
Storage temperature range	-25 °C … +85 °C
MTBF	750000 h: SN29500 / 250000 h: MIL HDBK 217F
Relative air humidity	20 – 90 % RH, not condensing
Dimensions (w × h × d)	71.0 × 89.0 × 62.0 mm
Cooling	Air convection, 20 mm distance top/bottom, 10 mm side
Housing material	Noryl (UL 94 V-0)
Mounting	DIN rail mountable TS35 (EN 60715)
Application height	–
Installation position	vertical
Protection class	IP20 (IEC 529, EN 60529)
Protection class	II (SELV, PELV)
Over voltage category	II
Degree of polution	2
Weight	0.250 kg/piece
Connection device	Screw terminal 0.20 mm^2 – 2.5 mm^2 max. 0.56 Nm
Approvals	cULus (E249179)
Standards	IEC 950, EN 60950, UL 60950, EN 61000-4-2/3/4/5/6/11, EN 61000-6-2, EN 61000-6-4, EN 50178, EN 61558, EN 61000-3-2, EN 50081-1, EN 50082-2, EN 55022, EN 55022 Class B, EN 55011B
Monitoring	
DC ON Control (Rdy)	–
Switching voltage	–
Switching current	–
Switching capacity	–
Isolation voltage	–

* **S** Article on stock
A Article available at short notice
R Article on request

Power supply · regulated, 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, adjustable

Dimensions



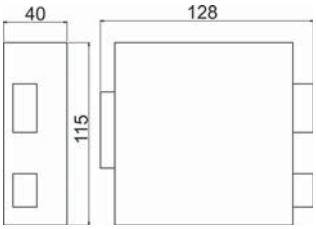
Description		Part-No.		Type	PU
Screw terminal					
Output voltage/current	DC 24 V/5 A	723500	**S***	CPSB1-120-24	1
Input		**CPSB1-120-24**			
Rated voltage U_N		AC 120/240 V			
Operation voltage range		AC 85–264 V / DC 110–345 V			
Line frequency		47 – 63 Hz			
Rated current I_N		2.1 A @ AC 120 V / 1.2 A @ AC 240 V			
Inrush current		<40 A			
Internal fuse		T3, 15 A/AC 250 V			
External fuse		Mini-circuit breaker: C 6 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, 30 s			
Short-circuit current		–			
Setting range $U_{out\ min.}/U_{out\ max.}$		DC 23–28 V			
Accuracy		–			
Load regulation		<1 %			
Line regulation		–			
Rise time		–			
Temperature coefficient		–			
Ripple and Noise		<60 mV			
Hold up time		>10 ms @ AC 120 V / >60 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 %			
Heat dissipation		<18 W			
Rated over load protection		–			
Over voltage protection		>DC 33 V (U_A=24 V)			
Overtemperature protection		yes			
Short circuit		Hiccup Mode			
General					
Switching frequency		–			
Insulation voltage input / output		DC 4.2 kV			
Insulation voltage input / ground		DC 2.2 kV			
Insulation voltage output / ground		DC 750 V			
Insulation resistance at DC 500 V		– MΩ			
Operation temperature range		-20 °C … +70 °C (Derating)			
Derating		>60 °C: -2.4 W/°C			
Storage temperature range		-25 °C … +85 °C			
MTBF		–			
Relative air humidity		–			
Dimensions (w × h × d)		40.0 × 115.0 × 110.0 mm			
Cooling		Air convection, 50 mm distance top/bottom, 20 mm side			
Housing material		Aluminum			
Mounting		DIN rail mountable TS35 (EN 60715)			
Application height		–			
Installation position		vertical			
Protection class		IP20 (IEC 529, EN 60529)			
Protection class		I			
Over voltage category		III			
Degree of polution		2			
Weight		0.400 kg/piece			
Connection device		Screw terminal 0.20 mm^2 – 2.5 mm^2 plug-in			
Approvals		cULus (E249179)			
Standards		IEC 950, EN 60950, UL 60950, EN 61000-6-2, EN 61000-6-4, EN 61000-4-2/3/4/5/6/11			
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			

* **S** Article on stock
A Article available at short notice
R Article on request

Power supply · regulated, 120 W

Primary switchmode power supply, PFC, Single-phase
Input: wide-range input AC 90–264 V, DC 110–370 V
Output: 48 V, adjustable

Dimensions



Description		Part-No.		Type	PU
Screw terminal					
Output voltage/current	DC 48 V/2.5 A	722784	**R***	CPSB1-120-48R	1

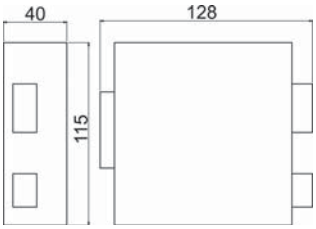
Input	**CPSB1-120-48R**
Rated voltage U_N	AC 120/230 V
Operation voltage range	AC 90–264 V / DC 110–370 V
Line frequency	47 – 63 Hz
Rated current I_N	1.9 A @ AC 115 V / 11 A @ AC 230 V
Inrush current	<20 A
Internal fuse	T3, 15 A/AC 250 V
External fuse	Mini-circuit breaker: C 4 A
Power Factor Correction P.F.C.	>0.6
Output	
Rated voltage U_N	DC 48 V
Rated current I_N	2.5 A
Max. output current	4 A, 30 s
Short-circuit current	15 A, 50 ms
Setting range $U_{out\ min.}/U_{out\ max.}$	DC 45–55 V
Accuracy	–
Load regulation	<1 %
Line regulation	–
Rise time	–
Temperature coefficient	–
Ripple and Noise	30 mV
Hold up time	>17 ms @ AC 120 V / >72 ms @ AC 230 V
Status indication DC ON LED green	≥43.2 V
Status indication DC LOW LED red	≤43.2 V
Parallel / redundant mode	Yes / decoupling diode contained internally
Efficiency	>86 % @ AC 120 V / >90 % @ AC 230 V
Heat dissipation	20 W @ AC 120 V, 13 W @ AC 230 V
Rated over load protection	yes
Over voltage protection	yes
Overtemperature protection	yes
Short circuit	Hiccup Mode
General	
Switching frequency	approx. 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
Insulation resistance at DC 500 V	– MΩ
Operation temperature range	-20 °C … +60 °C (Derating)
Derating	>50 °C: -2.5 W/°C
Storage temperature range	-25 °C … +85 °C
MTBF	>500000 h: SN29500 / >150000 h: MIL HDBK 217F
Relative air humidity	20 – 90 % RH, not condensing
Dimensions (w × h × d)	39.0 × 115.0 × 128.0 mm
Cooling	Air convection, 50 mm distance top/bottom, 20 mm side
Housing material	Aluminum
Mounting	DIN rail mountable TS35 (EN 60715)
Application height	–
Installation position	vertical
Protection class	IP20 (IEC 529, EN 60529)
Protection class	I
Over voltage category	III
Degree of polution	2
Weight	0.400 kg/piece
Connection device	Screw terminal 0.20 mm^2 – 2.5 mm^2 plug-in
Approvals	cULus (E249179)
Standards	IEC 950, EN 60950, UL 60950, EN 61000-6-2, EN 61000-6-4, EN 61000-4-2/3/4/5/6/11
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

* **S** Article on stock
A Article available at short notice
R Article on request

Power supply · regulated, 120 W

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

Dimensions



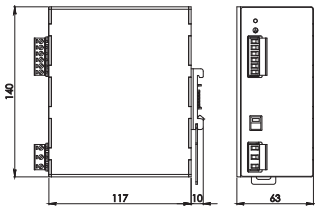
Description		Part-No.		Type	PU
Screw terminal, pluggable					
Output voltage/current	DC 24 V/5 A	722995	**S***	CPSB2-120-24	1
Input		**CPSB2-120-24**			
Rated voltage U_N		AC 200–500 V			
Operation voltage range		AC 187–550 V / DC 270–725 V			
Line frequency		47 – 63 Hz			
Rated current I_N		1.4 A @ AC 200 V / 0.7 A @ AC 500 V			
Inrush current		<20 A @ AC 230 V / <40 A @ AC 500 V			
Internal fuse		–			
External fuse		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 (limited current)		–			
Max. output current (HICCUP, 5 sec)		–			
Setting range $U_{out\ min.}/U_{out\ max.}$		23-27,5 V			
Accuracy		–			
Load regulation		<1 %			
Line regulation		–			
Rise time		9 ms (5–95 %) @ 400 V			
Temperature coefficient		–			
Ripple and Noise		<100 mV pp			
Hold up time		>20 ms @ AC 120 V / >80 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. 722987			
Efficiency		>86 %			
Heat dissipation		<18 W			
Rated over load protection		yes			
Over voltage protection		U_{out}>36 V			
Short circuit		Hiccup Mode			
General					
Switching frequency		–			
Insulation voltage input / output		DC 4.2 kV			
Insulation voltage input / ground		DC 2.2 kV			
Insulation voltage output / ground		DC 750 V			
Insulation resistance at DC 500 V		– MΩ			
Operation temperature range		-20 °C … +70 °C (overtemperature protection)			
Derating		>45 °C: -4 W/°C			
Storage temperature range		-25 °C … +85 °C			
MTBF		>500000 h: SN29500 / >150000 h: MIL HDBK 217F			
Relative air humidity		20 – 90 % RH, not condensing			
Dimensions (w × h × d)		40.0 × 130.0 × 115.0 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: 2008			
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: 2007			
Mounting		DIN rail mountable TS35 (EN 60715)			
Application height		2000 m			
Installation position		vertical			
Protection class		IP20 (IEC 529, EN 60529)			
Protection class		I			
Over voltage category		III			
Degree of polution		2			
Weight		0.400 kg/piece			
Connection device		Screw terminal 0.20 mm^2 – 2.5 mm^2 AWG 24 – AWG 12 plug-in			
Approvals		cULus (E249179)			
Standards		IEC 950, EN 60950, UL 60950, EN 61000-6-2, EN 61000-6-4, EN 61000-4-2/3/4/5/6/11			
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			

* **S** Article on stock
A Article available at short notice
R Article on request

Power supply · regulated, 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, adjustable

Dimensions



Description		Part-No.		Type	PU
Screw terminal, pluggable					
Output voltage/current	DC 24 V/10 A	723600	**S***	CPSB1-240-24E	1

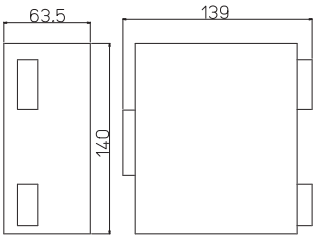
Input	**CPSB1-240-24E**
Rated voltage U_N	AC 120/240 V (manual)
Operation voltage range	AC 90–132 V / AC 187–264 V / DC 270–345 V
Line frequency	47 – 63 Hz
Rated current I_N	4 A @ AC 120 V / 2 A @ AC 240 V
Inrush current	<40 A
Internal fuse	T6, 3 A/AC 250 V
External fuse	Mini-circuit breaker: C 10 A / 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
Short-circuit current	–
Setting range $U_{out\ min.}/U_{out\ max.}$	DC 23–27.5 V
Accuracy	–
Load regulation	<1 %
Line regulation	–
Rise time	–
Temperature coefficient	–
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 %
Heat dissipation	<35 W
Rated over load protection	–
Over voltage protection	>DC 33 V (U_A=24 V)
Overtemperature protection	yes
Short circuit	Hiccup Mode
General	
Switching frequency	–
Insulation voltage input / output	DC 4.2 kV
Insulation voltage input / ground	DC 2.2 kV
Insulation voltage output / ground	DC 750 V
Insulation resistance at DC 500 V	– MΩ
Operation temperature range	-20 °C … +70 °C (Derating)
Derating	>60 °C: -5 W/°C
Storage temperature range	-25 °C … +85 °C
MTBF	–
Relative air humidity	–
Dimensions (w × h × d)	63.0 × 117.0 × 140.0 mm
Cooling	Air convection, 50 mm distance top/bottom, 20 mm side
Housing material	Aluminum
Mounting	DIN rail mountable TS35 (EN 60715)
Application height	–
Installation position	vertical
Protection class	IP20 (IEC 529, EN 60529)
Protection class	–
Over voltage category	III
Degree of polution	2
Weight	0.720 kg/piece
Connection device	Screw terminal 0.20 mm^2 – 2.5 mm^2 plug-in
Approvals	cULus (E249179)
Standards	IEC 950, EN 60950, UL 60950, EN 61000-6-2, EN 61000-6-4, EN 61000-4-2/3/4/5/6/11
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

* **S** Article on stock
A Article available at short notice
R Article on request

Power supply · regulated, 240 W

Primary switchmode power supply, PFC, Single-phase
Input: AC 90–132 V, AC 187–264 V, DC 270–345 V
Output: 48 V, adjustable

Dimensions



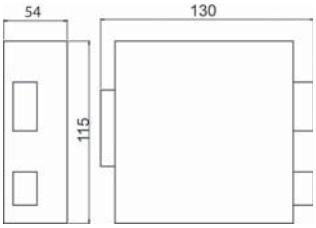
Description		Part-No.		Type	PU
Screw terminal, pluggable					
Output voltage/current	DC 48 V/5 A	722786	**R***	CPSB1-240-48R	1
Input		**CPSB1-240-48R**			
Rated voltage U_N		AC 120 / 230 V (manual)			
Operation voltage range		AC 90–132 V / AC 187–264 V, DC 270–345 V			
Line frequency		47 – 63 Hz			
Rated current I_N		4 A @ AC 115 V / 2 A @ AC 230 V			
Inrush current		30 A @ AC 115 V / 35 A @ AC 230 V			
Internal fuse		T6, 3 A/AC 250 V			
External fuse		Mini-circuit breaker: C 10 A			
Power Factor Correction P.F.C.		>0.6			
Output					
Rated voltage U_N		DC 48 V			
Rated current I_N		5 A			
Max. output current (limited current)		–			
Max. output current (HICCUP, 5 sec)		–			
Setting range $U_{out\ min.}/U_{out\ max.}$		45-55 V			
Accuracy		–			
Load regulation		±1 %			
Line regulation		–			
Rise time		–			
Temperature coefficient		–			
Ripple and Noise		100 mV			
Hold up time		>80 ms @ AC 120 V / >90 ms @ AC 230 V			
Status indication DC ON LED green		≥43.2 V			
Status indication DC LOW LED red		≤43.2 V			
Parallel / redundant mode		max. 2 devices / via external decoupling diodes			
Efficiency		90 %			
Heat dissipation		<34 W			
Rated over load protection		yes			
Over voltage protection		yes			
Short circuit		Hiccup Mode			
General					
Switching frequency		approx. 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			
Insulation resistance at DC 500 V		– MΩ			
Operation temperature range		-20 °C … +70 °C (Derating)			
Derating		>50 °C: -5 W/°C			
Storage temperature range		-25 °C … +85 °C			
MTBF		>500000 h: SN29500 / >150000 h: MIL HDBK 217F			
Relative air humidity		20 – 90 % RH, not condensing			
Dimensions (w × h × d)		63.5 × 140.0 × 139.0 mm			
Cooling		Air convection, 100 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: 2008			
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: 2007			
Mounting		DIN rail mountable TS35 (EN 60715)			
Application height		–			
Installation position		vertical			
Protection class		IP20 (IEC 529, EN 60529)			
Protection class		I			
Over voltage category		III			
Degree of polution		2			
Weight		0.720 kg/piece			
Connection device		Screw terminal 0.20 mm^2 – 2.5 mm^2 plug-in max. 0.56 Nm			
Approvals		cULus (E249179)			
Standards		IEC 950, EN 60950, UL 60950, EN 61000-4-2/3/4/5/6/11, EN 61000-6-2, EN 61000-6-4, EN 50178, EN 61558, EN 50081-1, EN 50082-2, EN 55022 Class B			
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			

* **S** Article on stock
A Article available at short notice
R Article on request

Power supply · regulated, 240 W

Primary switched power supplies, PFC, 1/2/3-phase
Input: wide-range input AC 187–550 V, DC 250–725 V (UL: DC 300–500 V)
Output: 24 V, adjustable

Dimensions



Description		Part-No.		Type	PU
Screw terminal, pluggable					
Output voltage/current	DC 24 V/10 A	722996	**S***	CPSB-123-240-24	1

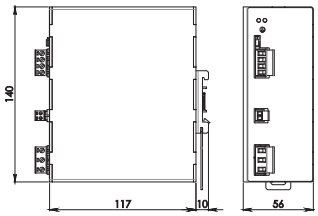
Input	**CPSB-123-240-24**
Rated voltage U_N	AC 200–500 V
Operation voltage range	AC 187–550 V / DC 250–725 V (UL: DC 300–500 V)
Line frequency	47 – 63 Hz
Rated current I_N	1-/2-phase: 2.2 A @ AC 220 V / 1.1 A @ AC 500 V, 3-phase: 1.5 A @ AC 220 V / 0.8 A @ AC 500 V
Inrush current	<20 A @ AC 230 V / <40 A @ AC 500 V
Internal fuse	–
External fuse	Mini-circuit breaker: D 4 A, C 6 A / safety fuse: T 6.3 A (required)
Power Factor Correction P.F.C.	>0.6 @ 230 V, >0.5 @ 400 V
Output	
Rated voltage U_N	DC 24 V
Rated current I_N	10 A
Max. output current	>15 A, 5 s
Short-circuit current	38 A, 5 s
Setting range $U_{out\ min.}/U_{out\ max.}$	23-27,5 V
Accuracy	–
Load regulation	<1 %
Line regulation	–
Rise time	14 ms (5–95 %) @ 400 V
Temperature coefficient	–
Ripple and Noise	<100 mV pp
Hold up time	>15 ms @ AC 230 V / >100 ms @ AC 500 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. 722987
Efficiency	>91 % @ AC 230 V / >92 % @ AC 400 V
Heat dissipation	<24 W @ AC 230 V, <21 W @ AC 400 V
Rated over load protection	yes
Over voltage protection	<DC 33 V
Short circuit	Hiccup Mode
General	
Switching frequency	–
Insulation voltage input / output	DC 4.2 kV
Insulation voltage input / ground	DC 2.2 kV
Insulation voltage output / ground	DC 750 V
Insulation resistance at DC 500 V	– MΩ
Operation temperature range	-20 °C ... +60 °C (over-temperature protection)
Derating	>50 °C: -6 W/°C
Storage temperature range	-25 °C … +85 °C
MTBF	>500000 h: SN29500 / >150000 h: MIL HDBK 217F
Relative air humidity	20 – 90 % RH, not condensing
Dimensions (w × h × d)	54.0 × 130.0 × 115.0 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: 2008
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: 2007
Mounting	DIN rail mountable TS35 (EN 60715)
Application height	2000 m
Installation position	vertical
Protection class	IP20 (IEC 529, EN 60529)
Protection class	I
Over voltage category	III
Degree of polution	2
Weight	0.650 kg/piece
Connection device	Screw terminal 0.20 mm^2 – 2.5 mm^2 AWG 30 – AWG 12 plug-in
Approvals	cULus (E249179)
Standards	IEC 60950, EN 60950, EN 61000-6-2, EN 61000-6-4, EN 61000-4-2/3/4/5/6/11, EN 61000-5-5, EN 55011
Monitoring	
DC ON Control (Rdy)	N/O contact
Switching voltage	DC 30 V
Switching current	DC 1 A
Switching capacity	30 W
Isolation voltage	AC 500 V

* **S** Article on stock
A Article available at short notice
R Article on request

Power supply · regulated, 480 W

Primary switchmode power supply, PFC, Single-phase
Input: AC 90–264 V, DC 110–345 V
Output: 24 V, adjustable

Dimensions



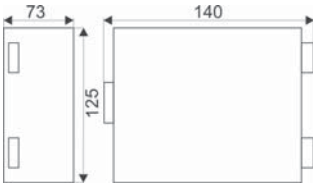
Description		Part-No.		Type	PU
Screw terminal					
Output voltage/current	DC 24 V/20 A	723700	**S***	CPSB1-480-24E	1
Input		**CPSB1-480-24E**			
Rated voltage U_N		AC 120/240 V			
Operation voltage range		AC 90–264 V / DC 110–345 V			
Line frequency		47 – 63 Hz			
Rated current I_N		4.8 A @ AC 120 V / 2.4 A @ AC 240 V			
Inrush current		<35 A			
Internal fuse		T8 A			
External fuse		Mini-circuit breaker: C 16 A, T 10 A			
Power Factor Correction P.F.C.		>0,90, enabled			
Output					
Rated voltage U_N		DC 24 V			
Rated current I_N		20 A			
Max. output current		30 A, 5 s @ Hiccup Mode			
Short-circuit current		–			
Setting range $U_{out\ min.}/U_{out\ max.}$		22-29 V			
Accuracy		–			
Load regulation		<1.5 %			
Line regulation		–			
Rise time		–			
Temperature coefficient		–			
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 diodes e.g. 722999			
Efficiency		>93 % @ AC 240 V			
Heat dissipation		<36.5 W			
Rated over load protection		–			
Over voltage protection		>DC 33 V (U_A=24 V)			
Overtemperature protection		yes			
Short circuit		Hiccup Mode			
General					
Switching frequency		–			
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.			
Insulation resistance at DC 500 V		– MΩ			
Operation temperature range		-20 °C … +70 °C (Derating)			
Derating		>50 °C: -7.6 W/°C @ 120 V, -7.2 W/°C @ 240 V			
Storage temperature range		-25 °C … +85 °C			
MTBF		–			
Relative air humidity		–			
Dimensions (w × h × d)		56.0 × 117.0 × 140.0 mm			
Cooling		Air convection, 50 mm distance top/bottom, 20 mm side			
Housing material		Aluminum			
Mounting		DIN rail mountable TS35 (EN 60715)			
Application height		–			
Installation position		vertical			
Protection class		IP20 (IEC 529, EN 60529)			
Protection class		–			
Over voltage category		III			
Degree of polution		2			
Weight		1.100 kg/piece			
Connection device		Screw terminal 0.20 mm^2 – 2.5 mm^2			
Approvals		cULus (E249179)			
Standards		EN 60950, EN 50178, EN 50082-2, EN 55011 Class B, EN 55022 Class B, EN 60529, EN 61000-4-2/3/4/5/6/11, IEC 60068-2-27, EN 61000-3-2			
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			

* **S** Article on stock
A Article available at short notice
R Article on request

Power supply · regulated, 480 W

Primary switched power supplies, PFC, 1/2/3-phase
Input: wide-range input AC 187–550 V, DC 250–725 V (UL: DC 300–500 V)
Output: 24 V, adjustable

Dimensions



Description		Part-No.		Type	PU
Screw terminal, pluggable					
Output voltage/current	DC 24 V/20 A	722801	**S***	CPSB-123-480-24	1

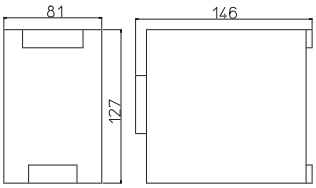
Input	**CPSB-123-480-24**
Rated voltage U_N	One-, two- and three-phase AC 200-500 V
Operation voltage range	AC 187–550 V / DC 250–725 V (UL: DC 300–500 V)
Line frequency	47 – 63 Hz
Rated current I_N	1-/2-phase: 2.9 A @ AC 200 V / 1.3 A @ AC 500 V, 3-phase: 1.8 A @ AC 200 V / 0.8 A @ AC 500 V
Inrush current	<20 A @ AC 230 V / <40 A @ AC 400 V
Internal fuse	–
External fuse	Mini-circuit breaker: C 6 A, or D 4 A (required)
Power Factor Correction P.F.C.	<0.95 @ AC 230 V, <0.92 @ AC 400 V
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 $U_{out\ min.}/U_{out\ max.}$	23-27,5 V
Load regulation	<1 %
Rise time	–
Temperature coefficient	–
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} >1.1 I_N
Parallel / redundant mode	yes/via external decoupling diode
Efficiency	>92 %
Heat dissipation	<21 W
Over voltage protection	<DC 33 V
Overtemperature protection	yes
Short circuit	Hiccup Mode
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 … +60 °C (Derating)
Derating	>45 °C: -16 W/°C
Storage temperature range	-25 °C … +85 °C
MTBF	>500000 h: SN29500 / >150000 h: MIL HDBK 217F
Dimensions (w × h × d)	73.0 × 125.0 × 140.0 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: 2008
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: 2007
Mounting	DIN rail mountable TS35 (EN 60715)
Installation position	vertical
Protection class	IP20 (IEC 529, EN 60529)
Protection class	I
Over voltage category	III
Degree of polution	2
Weight	1.000 kg/piece
Connection device	Screw terminal 0.20 mm^2 – 2.5 mm^2 AWG 24 – AWG 12 plug-in
Approvals	cULus (E249179)
Standards	UL 508C, IEC 950, EN 60950, EN 61000-6-2, EN 61000-6-4, EN 55011, EN 61000-4-2, EN 61000-4-2/3/4/5/6/11
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

* **S** Article on stock
A Article available at short notice
R Article on request

Power supply · regulated, 480 W, 3-phase

Primary switchmode power supply, PFC, 3-phase
Input: Wide range input AC 340 - 550 V
Output: 24 V, 48 V, adjustable

Dimensions



Description		Part-No.		Type	PU
Screw terminal					
Output voltage/current	DC 24 V/20 A	722800	**S***	CPSB3-500-24	1
	DC 48 V/10 A	722815	**R***	CPSB3-500-48	1

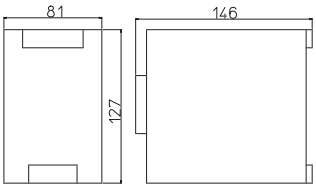
Input	**CPSB3-500-24**	**CPSB3-500-48**
Rated voltage U_N	3 × AC 400–500 V	
Operation voltage range	3 × AC 340–550 V	
Line frequency	47 – 63 Hz	
Rated current I_N	1.3 A @ AC 400 V / 1.1 A @ AC 500 V	
Inrush current	<50 A	
Internal fuse	–	
External fuse	Mini-circuit breaker: 3 × B 16 A, C 10 A (required)	
Power Factor Correction P.F.C.	>0.6	
Output		
Rated voltage U_N	DC 24 V	DC 48 V
Rated current I_N	20 A	10 A
Max. output current (limited current)	22 A	11 A
Max. output current (HICCUP, 5 sec)	30 A	15 A
Setting range $U_{out\ min.}/U_{out\ max.}$	24-28 V	45-55 V
Accuracy	–	
Load regulation	<1 %	
Line regulation	–	
Rise time	–	
Temperature coefficient	–	
Ripple and Noise	100 mV pp	<100 mV pp
Hold up time	>20 ms @ AC 400 V	
Status indication DC ON LED green	≥21.6 V	
Status indication DC LOW LED red	≤21.6 V	
Parallel / redundant mode	max. 2 devices / via external decoupling diodes e.g. 722987	max. 4 devices / via external decoupling diodes e.g. 722987
Efficiency	>94 % @ AC 400 V	
Heat dissipation	<30 W @ AC 380 V	<15 W @ AC 380 V
Rated over load protection	yes	
Over voltage protection	yes	
Short circuit	Hiccup Mode / Current limit	
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	
Insulation resistance at DC 500 V	– MΩ	
Operation temperature range	-20 °C … +60 °C (Derating)	
Derating	>50 °C: -10 W/°C	
Storage temperature range	-25 °C … +85 °C	
MTBF	>500000 h: SN29500 / >150000 h: MIL HDBK 217F	
Relative air humidity	20 – 90 % RH, not condensing	
Dimensions (w × h × d)	81.0 × 127.0 × 146.0 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: 2008	
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: 2007	
Mounting	DIN rail mountable TS35 (EN 60715)	
Application height	–	
Installation position	vertical	
Protection class	IP20 (IEC 529, EN 60529)	
Protection class	I	
Over voltage category	III	
Degree of polution	2	
Weight	1.200 kg/piece	
Connection device	Screw terminal 0.20 mm^2 – 6.0 mm^2 max. 0.62 Nm	
Approvals	cULus (E249179)	
Standards	IEC 950, EN 60950, EN 61000-4-2/3/4/5/6/11, EN 61000-6-2, EN 61000-6-4, EN 50178, EN 61558, EN 50081-1, EN 50082-2, EN 55022 Class B	
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	

* **S** Article on stock
A Article available at short notice
R Article on request

Power supply · regulated, 720 W, 3-phase

Primary switchmode power supply, PFC, 3-phase
Input: Wide range input AC 340 - 550 V
Output: 24 V, 48 V, adjustable

Dimensions



Description		Part-No.		Type	PU
Screw terminal					
Output voltage/current	DC 24 V/30 A	722802	**S***	CPSB3-720-24	1
	DC 48 V/15 A	722807	**R***	CPSB3-720-48	1

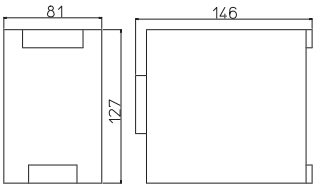
Input	**CPSB3-720-24**	**CPSB3-720-48**
Rated voltage U_N	3 × AC 400–500 V	
Operation voltage range	3 × AC 340–550 V	
Line frequency	47 – 63 Hz	
Rated current I_N	1.9 A @ AC 400 V / 1.7 A @ AC 500 V	
Inrush current	<50 A	
Internal fuse	–	
External fuse	Mini-circuit breaker: 3 × B 16 A, C 10 A (required)	
Power Factor Correction P.F.C.	>0.65	
Output		
Rated voltage U_N	DC 24 V	DC 48 V
Rated current I_N	30 A	15 A
Max. output current (limited current)	32 A	16,5 A
Max. output current (HICCUP, 5 sec)	45 A	22,5 A
Setting range $U_{out\ min.}/U_{out\ max.}$	24-28 V	45-55 V
Accuracy	–	
Load regulation	<1 %	
Line regulation	–	
Rise time	–	
Temperature coefficient	–	
Ripple and Noise	<150 mV pp	<100 mV pp
Hold up time	>15 ms @ AC 400 V	
Status indication DC ON LED green	≥21.6 V	≥43.2 V
Status indication DC LOW LED red	≤21.6 V	≤43.2 V
Parallel / redundant mode	max. 2 devices / via external decoupling diodes e.g. 722999	
Efficiency	>92 %	>94 %
Heat dissipation	<63 W	<46 W
Rated over load protection	> 90°C, auto-reset	
Over voltage protection	<33 V	<60 V
Short circuit	Hiccup Mode / Current limit	
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	
Insulation resistance at DC 500 V	– MΩ	
Operation temperature range	-20 °C … +60 °C	
Derating	–	
Storage temperature range	-25 °C … +85 °C	
MTBF	>500000 h: SN29500 / >150000 h: MIL HDBK 217F	
Relative air humidity	20 – 90 % RH, not condensing	
Dimensions (w × h × d)	81.0 × 127.0 × 146.0 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: 2008	
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: 2007	
Mounting	DIN rail mountable TS35 (EN 60715)	
Application height	–	
Installation position	vertical	
Protection class	IP20 (IEC 529, EN 60529)	
Protection class	I	
Over voltage category	III	
Degree of polution	2	
Weight	1.200 kg/piece	
Connection device	Screw terminal 0.20 mm^2 – 6.0 mm^2 max. 0.62 Nm	
Approvals	cULus (E249179)	
Standards	IEC 950, EN 60950, EN 61000-4-2/3/4/5/6/11, EN 61000-6-2, EN 61000-6-4, EN 50178, EN 61558, EN 50081-1, EN 50082-2, EN 55022 Class B	
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	

* **S** Article on stock
A Article available at short notice
R Article on request

Power supply · regulated, 960 W, 3-phase

Primary switchmode power supply, PFC, 3-phase
Input: Wide range input AC 340 - 550 V
Output: 24 V / 48 V / 72 V, adjustable

Dimensions



Description		Part-No.		Type	PU
Screw terminal					
Output voltage/current	DC 24 V/40 A	722811	**S***	CPSB3-960-24	1
	DC 48 V/20 A	722812	**A***	CPSB3-960-48	1
	DC 72 V/13.3 A	722813	**R***	CPSB3-960-72	1

Input	**CPSB3-960-24**	**CPSB3-960-48**	**CPSB3-960-72**
Rated voltage U_N	3 × AC 400–500 V		
Operation voltage range	3 × AC 340–550 V		
Line frequency	47 – 63 Hz		
Rated current I_N	2.8 A @ AC 400 V / 2.2 A @ AC 500 V		
Inrush current	<50 A		
Internal fuse	–		
External fuse	Mini-circuit breaker: 3 × B 16 A, C 10 A (required)		
Power Factor Correction P.F.C.	>0.7		
Output			
Rated voltage U_N	DC 24 V	DC 48 V	DC 72 V
Rated current I_N	40 A	20 A	13.3 A
Max. output current (limited current)	44 A	21,5 A	14 A
Max. output current (HICCUP, 5 sec)	60 A	30 A	20 A
Setting range $U_{out\ min.}/U_{out\ max.}$	24-28 V	45-55 V	72-84 V
Accuracy	–		
Load regulation	<1 %		
Line regulation	–		
Rise time	–		
Temperature coefficient	–		
Ripple and Noise	<100 mV pp		<300 mV pp
Hold up time	>10 ms @ AC 400 V / >15 ms @ AC 500 V		
Status indication DC ON LED green	≥21.6 V	≥43.2 V	≥64.8 V
Status indication DC LOW LED red	≤21.6 V	≤43.2 V	≤64.8 V
Parallel / redundant mode	max. 2 devices / via external decoupling diodes e.g. 722999		
Efficiency	>91 %	>93 %	>94 %
Heat dissipation	<95 W	<72 W	<62 W
Rated over load protection	> 90°C, auto-reset		
Over voltage protection	<33 V	<60 V	<94 V
Short circuit	Hiccup Mode / Current limit		
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		
Insulation resistance at DC 500 V	– MΩ		
Operation temperature range	-20 °C … +60 °C (Derating)		
Derating	>50 °C: -15 W/°C, UL 508: >45 °C: -15 W/°C		
Storage temperature range	-25 °C … +85 °C		
MTBF	>500000 h: SN29500 / >150000 h: MIL HDBK 217F		
Relative air humidity	20 – 90 % RH, not condensing		
Dimensions (w × h × d)	81.0 × 127.0 × 146.0 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: 2008		
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: 2007		
Mounting	DIN rail mountable TS35 (EN 60715)		
Application height	–		
Installation position	vertical		
Protection class	IP20 (IEC 529, EN 60529)		
Protection class	I		
Over voltage category	III		
Degree of polution	2		
Weight	1.200 kg/piece		
Connection device	Screw terminal 0.20 mm² – 10.0 mm² max. 0.62 Nm	Screw terminal 0.20 mm² – 6.0 mm² max. 0.62 Nm	
Approvals	cULus (E249179)		
Standards	IEC 950, EN 60950, EN 61000-4-2/3/4/5/6/11, EN 61000-6-2, EN 61000-6-4, EN 50178, EN 61558, EN 50081-1, EN 50082-2, EN 55022 Class B		
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		

* **S** Article on stock
A Article available at short notice
R Article on request

Notes

Power supply · regulated, 2400 W

Primary switchmode power supply, PFC, 3-phase
Input: Wide range input AC 340 - 550 V
Output: DC 24 V, 100 A / DC 48 V, 50 A

Range of functions
The new power compact series provides a number of additional adjustment options via function keys. The selected functions are shown on a display. In addition, the current output voltage and current are displayed for normal operation.

Input protection
- Active Surge suppressor and inrush limiter (ASSIL) as protection against overvoltages according to VDE 0160
- PFC error monitoring
- Phase monitoring with automatic reduction of the output power
- Automatic start/restart system for over- and undervoltages

Output protection
- Adjustable current limiting between 0.1 I_N and I_N
- Hiccup autoreset based on current limiting or maximum output voltage (150 %

Status display and signal
- In addition to an LED for “DC OK” and error displays, the devices have the following analog outputs 0–10 V and 4–20 mA as direct function of the load current
- Programmable relay contact with the functions
  – Output voltage/current,
  – Overload,
  – Overtemperature

Additional functions
- Temperature-compensated battery charging function
- Display and compensation of the voltage drop for long cables
- Remote On/Off of the output voltage
- DC 12 V auxiliary voltage
- Monitoring and control interface based on RS232 (optional)
- Integrated O-ring diode
- Load sharing in parallel operation
- Load current sharing

Description		Part-No.		Type	PU
Screw terminal					
Output voltage/current	DC 24 V/100 A	722814	**S***	CPSB3-2400-24	1
	DC 48 V/50 A	722816	**S***	CPSB3-2400-48	1

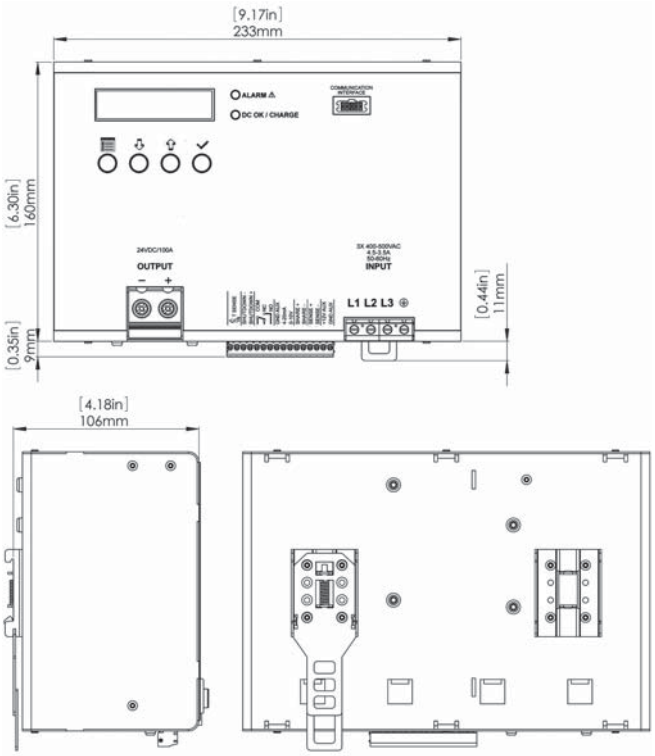
Input	**DC 24 V/100 A**	**DC 48 V/50 A**
Rated voltage U_N	3 × AC 400–500 V	
Operation voltage range	AC 340–550 V / DC 520–750 V	
Line frequency	47 – 63 Hz	
Rated current I_N	4.5 A @ AC 400 V / 3.5 A @ AC 500 V	
Inrush current	< 10 A (active inrush current limitation)	
Internal fuse	–	
External fuse	Mini-circuit breaker: 3 × C 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 24 V	DC 48 V
Rated current I_N	100 A	50 A
Max. output current	>150 A, 5 s @ U_{out} > 90 %	>75 A, 5 s @ U_{out} > 90 %
Short-circuit current	150 A, 5 s	75 A, 5 s
Setting range $U_{out\ min.}/U_{out\ max.}$	DC 11.5–29 V	DC 23–56 V
Load regulation	<1 %	
Rise time	< 4.5 S	
Temperature coefficient	–	
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 %	
Heat dissipation	<200 W	
Over voltage protection	>30 V	
Short circuit	Hiccup Mode / current limit / constant current	
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 … +60 °C (Derating)	
Derating	>45 °C: -40 W/°C	
Storage temperature range	-25 °C … +85 °C	
MTBF	>500000 h: SN29500 / >150000 h: MIL HDBK 217F	
Dimensions (w × h × d)	233.0 × 158.0 × 102.0 mm	
Cooling	Air convection, forced cooling >45°C, 80 mm distance top/bottom, 10 mm side	
Housing material	Aluminum	
Shock resistance	30g	
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: 2007	
Mounting	DIN rail mountable TS35 (EN 60715)	
Installation position	vertical	
Protection class	IP20 (IEC 529, EN 60529)	
Protection class	I	
Over voltage category	III	
Degree of polution	2	
Weight	2.800 kg/piece	
Connection device	Screw terminal Input 0.20 mm^2 – 4.0 mm^2 Output 0.20 mm^2 – 35.0 mm^2 Auxiliary 0.20 mm^2 – 1.5 mm^2	
Approvals	cULus (E249179)	
Standards	UL 508, IEC 950, EN 60950, EN 55011, EN 61000-4-5, Surge immunity level IV, VDE 0160, EN 61000-4-2/3/4/5/6/11	
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	
Interface		
User Interface	LCD display 16 × 2 character, multi language, 4 keys (command and navigation)	
Auxiliary voltage output	galvanically isolated DC 12 V, 100 mA	
NTC	Temperature-controlled battery charging (mandatory)	

* **S** Article on stock
A Article available at short notice
R Article on request

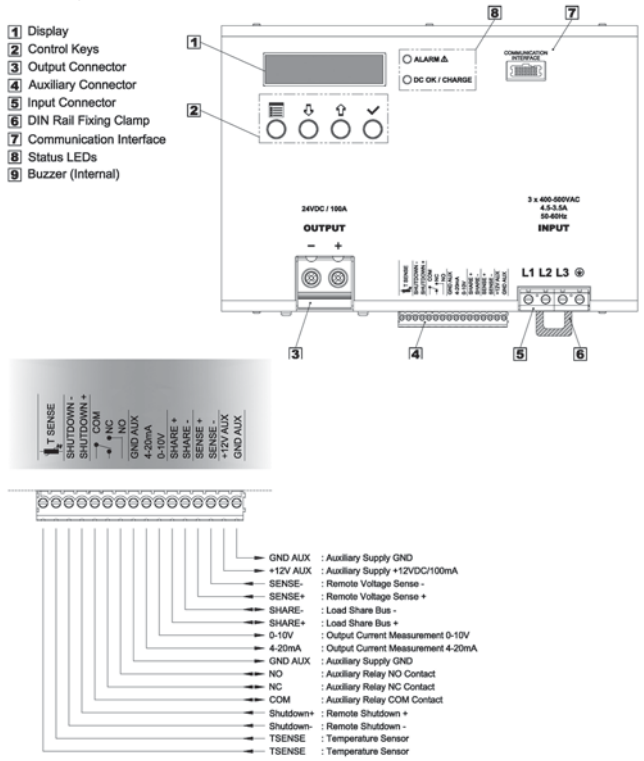
Power supply · regulated, 2400 W

Primary switchmode power supply, PFC, 3-phase
Input: Wide range input AC 340 - 550 V
Output: DC 24 V, 100 A / DC 48 V, 50 A

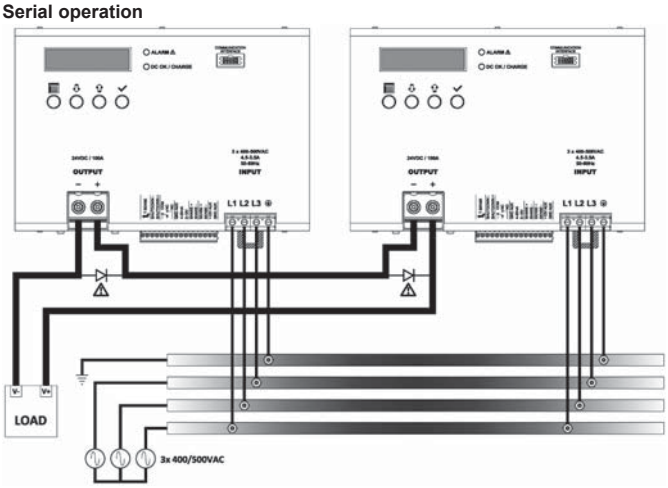
Dimensions



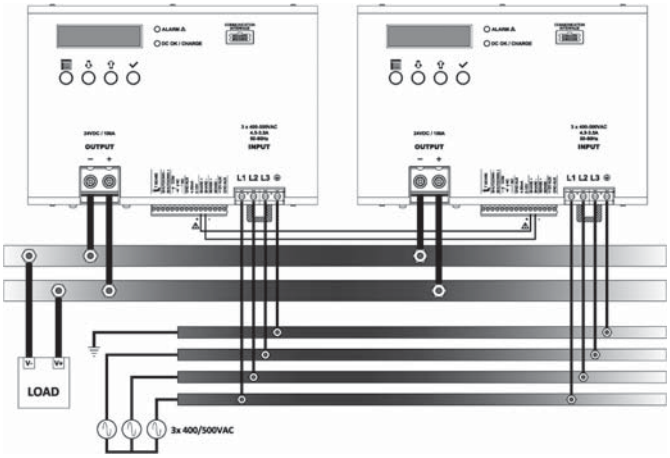
PIN assignment



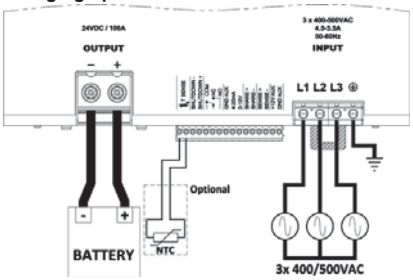
Serial operation



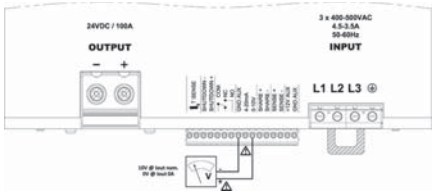
Parallel/redundant mode



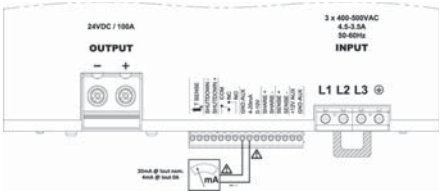
Charging operation



Output voltage in 0–10 V

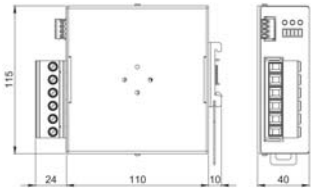


Output voltage in 4–20 mA

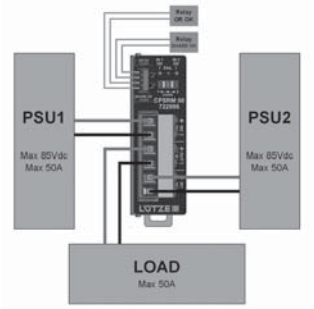


Redundant module 12 to 85 V, 50 A
Potential-free signalling contact
Status LED per input

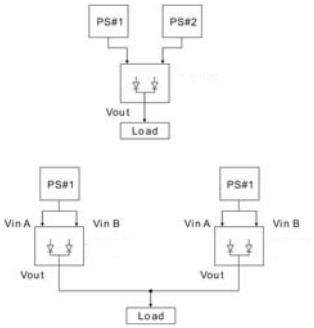
Dimensions



PIN assignment



Use



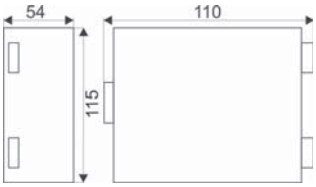
Description		Part-No.		Type	PU
Screw terminal					
Output voltage/current	DC 12 V–85 V/50 A	722999	**S***	CPSRM50	1
Input				**CPSRM50**	
Rated voltage U_N				–	
Operation voltage range				DC 12–85 V	
No. of inputs				2	
Rated current I_N				max. 50 A per input	
Internal fuse				–	
External fuse				–	
Output					
Rated voltage U_N					
Rated current I_N				– A	
Max. output current				300 A	
Voltage drop				<0.2 V	
Inverse voltage				– V	
Heat dissipation				max. 10 W	
No-load power				<1.5 W	
Status indication DC ON LED green				IN1, IN2 OK	
Status indication DC ON LED red				Redundancy error	
Overtemperature protection				No	
Over voltage protection				No	
General					
Operation temperature range				-20 °C … +50 °C	
Derating				–	
Storage temperature range				-25 °C … +85 °C	
MTBF				–	
Dimensions (w × h × d)				40.0 × 115.0 × 110.0 mm	
Cooling				Air convection	
Housing material				Aluminum	
Shock resistance				30 g 6 ms, 20 g 11 ms, 3 shocks/direction, 18 shocks in total, IEC60068-2-27: 2008	
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: 2007	
Mounting				DIN rail mountable TS35 (EN 60715)	
Application height				–	
Installation position				vertical	
Protection class				IP20 (IEC 529, EN 60529)	
Over voltage category				II	
Degree of polution				2	
Weight				0.200 kg/piece	
Connection device				Input Screw terminal plug-in 0.20 mm^2 – 16.0 mm^2 Output Screw terminal plug-in 0.20 mm^2 – 16.0 mm^2 Relays Screw terminal plug-in 0.20 mm^2 – 1.5 mm^2	
Standards				UL 508, EN 60950-1, EN 55022 Class B, EN 55024, EN 61000-4-2/3/4/6/8, EN 61204-3	
Monitoring					
DC ON Control (Rdy)				N/O contact	
Switching voltage				AC 300 V / DC 24 V	
Switching current				AC/DC 1 A	
Switching capacity				300 VA / 30 W	
Isolation voltage				DC 100 V	

* **S** Article on stock
A Article available at short notice
R Article on request

DC UPS Battery Management System · 240 W

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

Dimensions

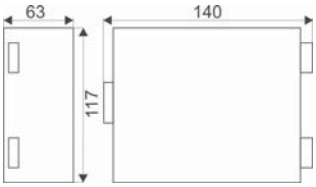


Description		Part-No.		Type	PU
	DC UPS 24 V	723110	**S***	CNUPS24	1
Note					
Comments	Suitable for power supply with settable output voltage Load mode with simultaneous charging Integrated battery fuse Deep discharging protection				
Input					
Input voltage	DC 26–28.5 V				
Input current	DC 3 – 20 mA				
Status display input	LED green: PS Ok, LED red: Reverse polarity LED green: Battery OK, LED red: Battery low				
Parameterisation	Button/LCD display Software Powermaster (free Download Lütze web page)				
Heat dissipation	–				
Protection device	none				
Energy storage					
Memory type	chemical (lead based, Ni-MH / Ni-Cd, Li-ION / $LiFePo_4$)				
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				
Switching time on memory medium	–				
Backup time	depends on battery and charging current				
Fuse for memory medium	Vehicle fuse 15 A / 42 V				
Deep discharge protection	18.5 V ± 0.5 V				
Output					
Output voltage	DC 20 - 28 V				
Max. output current	DC 10 A				
Status display output	LED yellow: Load OK				
General					
Housing material	Aluminum				
Protection class	IP20 (EN 60529)				
Dimensions (w × h × d)	54.0 × 115.0 × 110.0 mm				
Mounting	DIN rail mountable TS35 (EN 60715)				
Installation position	vertical, with 20 mm distance to other devices				
Connection device	Connector with screws: 2.5 mm^2(AWG 24–12)				
Operation temperature range	-20 °C … +50 °C				
Storage temperature range	-20 °C … +85 °C				
Weight	0.300 kg/piece				
Cooling	free convection				
Relative air humidity	95 % not condensing				
Over voltage category	II				
Degree of polution	2 (IEC 664-1)				
Insulation voltage input / ground	0.5 kV, 1 min.				
Approvals	cULus (E249179)				
Standards	CE, EN 60950-1, EN 61000-6-2/4				
Monitoring					
Monitored functions	Battery mode				
Number of channels	1				
Switching voltage	DC 24 V				
Switching current	DC 1 A				
Contact type	Change over contact				

DC UPS Battery Management System · 480 W

Uninterrupted DC system voltage
DC UPS for lead batteries, NiMH (NiCd), Li-ION ($LiFePO_4$)
Input: wide-range input DC 12 V, DC 24 V, output: max. DC 20 A

Dimensions

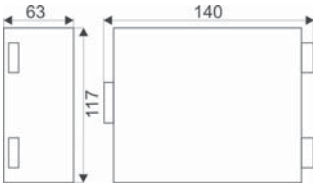


Description		Part-No.		Type	PU
	DC UPS 12 V / 24 V	723100	**S***	CDCU20 12/24DC UPS	1
Note					
Comments	Monitoring via LCD display Suitable for DC12V and DC24V Suitable for lead batteries, NI-MH, Li Digital control Battery charging current up to 5A Output current up to 20A Cold start automatic Configuration / monitoring also via software Remote On / Off				
Input					
Input voltage	DC 12 V or 24 V				
Input current	DC max. 20 A				
Status display input	see monitoring				
Parameterisation	Button/LCD display Software Powermaster (free Download Lütze web page)				
Heat dissipation	<3 W				
Protection device	none				
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					
Output voltage	DC 10 - 29 V				
Max. output current	DC 20 A, 35 A @ 5 s				
Rated voltage U_N	–				
Status display output	see monitoring				
General					
Housing material	Aluminum				
Protection class	IP20				
Dimensions (w × h × d)	63.0 × 117.0 × 140.0 mm				
Mounting	DIN rail mountable TS35 (EN 60715)				
Installation position	vertical				
Connection device	IN/Battery/Out : 6 pin connector 2.5 mm^2,Grid dimensions 5.08 Auxiliary: 7 pin connector 0.5 mm^2, Grid dimensions 2.54 Temperature sensor: 2 pin, friction lock, Grid dimensions 2 mm USB: Mini USB connector				
Max. power loss (Nominal operations)	<13 W				
Max. power loss (Battery mode)	<18 W				
Charging efficiency	>90 %				
Operation temperature range	-20 °C … +60 °C				
Storage temperature range	-20 °C … +85 °C				
Weight	0.500 kg/piece				
Cooling	free convection				
Relative air humidity	95 % not condensing				
Over voltage category	II				
Degree of polution	2 (IEC 664-1)				
Insulation voltage input / ground	0.5 kV, 1 min.				
Approvals	cULus (E249179)				
Standards	UL 508, CE, EN 55011				
User Interface					
USB	Connection to PC				
Control Elements	4 keys (menu selection and programming)				
Status indication	LED red ON: System error, flashing: Battery mode				
LCD display	1.5 inch, colour, graphic				
Monitoring					
Monitored functions	Coulomb counter, battery temperature, battery operating hours, no. of charging cycles				
Number of channels	2				
Switching voltage	30 V				
Switching current	2 A				
Contact type	N/O contact				

* **S** Article on stock
A Article available at short notice
R Article on request

Uninterrupted DC system voltage
Capacitive energy store
Input: wide-range input DC 12 V - DC 85 V, output: max. DC 20 A

Dimensions



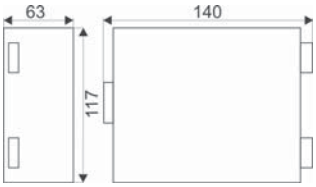
Description		Part-No.		Type	PU
	Capacitive energy store	723120	**S***	CBU150U	1
Note					
Comments	Input voltage range DC 12 V to DC 85 V Automatic detection of DC supply Inexpensive design thanks to standard electrolyte capacitors Digital control Compact size				
Input					
Input voltage	DC 12 V / 24 V / 48 V / 72 V or automatic recognition				
Input current	DC max. 20 A				
Status display input	LED green: selected voltage				
Parameterisation	Button Selection of input voltage				
Energy storage					
Memory type	capacitive				
Discharge time at load current max	12 V: 600 ms, 24 V: 300ms, 48 V: 150 ms, 72 V: 75 ms				
Output					
Output voltage	Input voltage -1 V				
Max. output current	20 A				
Ripple and Noise	<250 mV @ DC 24 V, 20 A				
Short circuit	enabled				
Protection device	Over voltage protection, active				
Status display output	green LED: DC OK, red LED: Overload				
General					
Housing material	Aluminum				
Protection class	IP20				
Dimensions (w × h × d)	63.0 × 140.0 × 117.0 mm				
Mounting	DIN rail mountable TS35 (EN 60715)				
Installation position	vertical, with 20 mm distance to other devices				
Connection device	Plug-in screw terminal 2.5 mm^2 (AWG 24–12)				
Operation temperature range	-20 °C … +70 °C				
Storage temperature range	-20 °C … +82 °C				
Weight	0.800 kg/piece				
Cooling	free convection				
Relative air humidity	95 % not condensing				
Insulation voltage input / ground	0.75 kV				
Approvals	cULus (E249179)				
Standards	UL 508, CE, EN 55011				
Monitoring					
Number of channels	2				
Switching voltage	DC 12 V				
Switching current	DC 1 A				
Contact type	N/O contact				

* **S** Article on stock
A Article available at short notice
R Article on request

DC UPS Battery Management System · Lead acid battery housing

Battery housing for holding two lead batteries 12 V / 1.2 Ah

Dimensions



Description		Part-No.	Type	PU
	Battery housing without battery	723115 **A***	CNBP30	1
Note				
Comments		Suitable for DC12V and DC24V applications Integrated self-healing fuse		
Energy storage				
Memory type		2× lead batteries DC 12 V / 1.2 Ah		
Dimensions battery max. (w × h × d)				
max. charging current		600 mA @ DC 12 V, 300 mA @ DC 24 V		
max. battery capacity		–		
Max. output current		5 A @ DC 2 V, 3 A @ DC 24 V		
Switching time on memory medium		–		
Backup time		–		
Fuse for memory medium		15 A, automatic resetting		
Deep discharge protection		–		
General				
Housing material		Aluminum		
Protection class		IP20 (EN 60529)		
Dimensions (w × h × d)		63.0 × 117.0 × 140.0 mm		
Mounting		DIN rail mountable TS35 (EN 60715)		
Installation position		vertical, with 20 mm distance to other devices		
Connection device		Connector with screws: 2.5 mm^2(AWG 24–12)		
Operation temperature range		-20 °C … +40 °C		
Storage temperature range		-20 °C … +40 °C		
Configured weight max.		1.2 kg/piece		
Cooling		free convection		
Relative air humidity		95 % not condensing		
Insulation voltage input / ground		0.5 kV, 1 min.		
Over voltage category		II		
Degree of polution		2 (IEC 664-1)		
Approvals		–		
Standards		–		

* **S** Article on stock
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DELTA Power Supplies

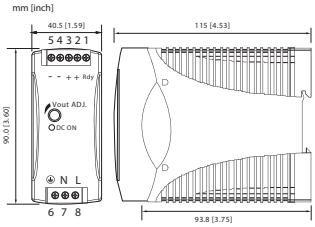
DELTA Series

- One- and three-phase
- 30 W to 960 W
- Parallel operation
- Overload and short circuit protection
- Redundant operation with integrated diodes
- High efficiency
- Protection class IP20
- UL Listed
- Class 1 Div.2, A, B, C, D, T4
- Economical

Power supply · regulated, 30 W

Primary switchmode power supply, Single-phase, Class 2
Input: wide-range input AC 85–264 V, DC 90–375 V
Output: 5 V / 12 V / 24 V, adjustable

Dimensions



Description		Part-No.		Type	PU
Screw terminal					
Output voltage/current	DC 5 V/6 A	722763	**S***	DRA30-5A	1
	DC 12 V/2.5 A	722768	**S***	DRA30-12A	1
	DC 24 V/1.25 A	722753	**S***	DRA30-24A	1

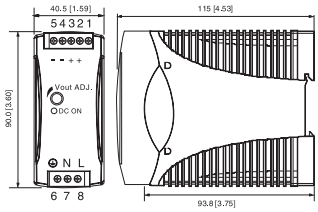
Input	**DRA30-5A**	**DRA30-12A**	**DRA30-24A**
Rated voltage U_N	AC 100–240 V		
Operation voltage range	AC 85–264 V / DC 90–375 V		
Line frequency	47 – 63 Hz		
Rated current I_N	360 mA @ AC 115 V / 190 mA @ AC 230 V		
Inrush current	20 A @ AC 115 V / 40 A @ AC 230 V		
Internal fuse	T 2 A/AC 250 V		
External fuse	Mini-circuit breaker: B 4 A		
Power Factor Correction P.F.C.	–		
Output			
Rated voltage U_N	DC 5 V	DC 12 V	DC 24 V
Rated current I_N	6 A	2.5 A	1.25 A
Max. output current	–		
Short-circuit current	–		
Setting range $U_{out\ min.}/U_{out\ max.}$	5.0-5.5 V	12-14 V	24-28 V
Accuracy	±1 %		
Load regulation	±0.5 %		
Line regulation	±0.5 %		
Rise time	1 s		
Temperature coefficient	±0.03 % / °C		
Ripple and Noise	<50 mV		
Hold up time	20 ms @ 115 V / 30 ms @ 230 V		
Status indication DC ON LED green	≥4 V	≥9.6 V	≥19.2 V
Status indication DC LOW LED red	–		
Parallel / redundant mode	max. 2 devices / via external decoupling diodes e.g. 722987		
Efficiency	79 %	84 %	86 %
Heat dissipation	8.5 W @ AC 230 V	5.6 W @ AC 230 V	5.5 W @ AC 230 V
Rated over load protection	120–136 %	110–140 %	
Over voltage protection	125–137 %		
Short circuit	Hiccup Mode		
General			
Switching frequency	approx. 80 kHz		
Insulation voltage input / output	DC 4.2 kV		
Insulation voltage input / ground	DC 2.1 kV		
Insulation voltage output / ground	DC 700 V		
Insulation resistance at DC 500 V	100 MΩ		
Operation temperature range	-25 °C … +70 °C (Derating)		
Derating	Capacity: -2.5 %/°C starting at 60 °C		
Storage temperature range	-25 °C … +85 °C		
MTBF	551000 h	582000 h	588000 h
Relative air humidity	20 – 95 % RH, not condensing		
Dimensions (w × h × d)	40.5 × 90.0 × 115.0 mm		
Cooling	Air convection, 25 mm clearance all-round		
Housing material	Plastic		
Mounting	DIN rail mountable TS35 (EN 60715)		
Application height	2000 m		
Installation position	vertical		
Protection class	IP20		
Protection class	I		
Over voltage category	II		
Degree of polution	2		
Weight	0.290 kg/piece		
Connection device	Screw terminal 0.20 mm^2 – 2.5 mm^2 max. 0.56 Nm		
Approvals	cULus (E249179)		
Standards	UL 60950-1, UL 1310 Class 2, EN 60950-1, EN 61000-6-3, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 55024, EN 61000-6-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11		
Monitoring			
DC ON Control (Rdy)	Open Collector		
Switching voltage	DC 24 V		
Switching current	≤35 mA		
Switching capacity	–		
Isolation voltage	none		

* **S** Article on stock
A Article available at short notice
R Article on request

Power supply · regulated, 50 W

Primary switchmode power supply, Single-phase, Class 2
Input: wide-range input AC 85–264 V, DC 90–375 V
Output: 5 V, adjustable

Dimensions



Description		Part-No.	Type	PU
Screw terminal				
Output voltage/current	DC 5 V/10 A	722764 **R***	DRA60-05A	1

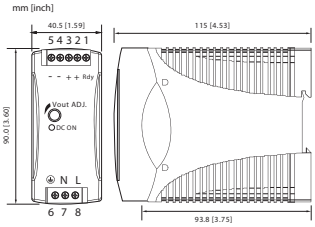
Input	**DRA60-05A**
Rated voltage U_N	AC 100–240 V
Operation voltage range	AC 85–264 V / DC 90–375 V
Line frequency	47 – 63 Hz
Rated current I_N	550 mA @ AC 115 V / 280 mA @ AC 230 V
Inrush current	20 A @ AC 115 V / 40 A @ AC 230 V
Internal fuse	T 2 A/AC 250 V
External fuse	Mini-circuit breaker: B 4 A, C 2 A
Power Factor Correction P.F.C.	–
Output	
Rated voltage U_N	DC 5 V
Rated current I_N	10 A
Max. output current	–
Short-circuit current	–
Setting range $U_{out\ min.}/U_{out\ max.}$	5.0-5.5 V
Accuracy	±1 %
Load regulation	±0.5 %
Line regulation	±0.5 %
Rise time	1 s
Temperature coefficient	±0.03 % / °C
Ripple and Noise	50 mV
Hold up time	20 ms @ 115 V / 30 ms @ 230 V
Status indication DC ON LED green	≥4 V
Status indication DC LOW LED red	–
Parallel / redundant mode	max. 2 devices / via external decoupling diodes
Efficiency	79 %
Heat dissipation	12.5 W @ AC 230 V
Rated over load protection	110–150 %
Over voltage protection	120–136 %
Short circuit	Hiccup Mode
General	
Switching frequency	approx. 80 kHz
Insulation voltage input / output	DC 4.2 kV
Insulation voltage input / ground	DC 2.1 kV
Insulation voltage output / ground	DC 700 V
Insulation resistance at DC 500 V	100 MΩ
Operation temperature range	-25 °C … +70 °C (Derating)
Derating	Capacity: -2.5 %/°C starting at 60 °C
Storage temperature range	-25 °C … +85 °C
MTBF	498000 h
Relative air humidity	20 – 90 % RH, not condensing
Dimensions (w × h × d)	40.5 × 90.0 × 115.0 mm
Cooling	Air convection, 25 mm clearance all-round
Housing material	Plastic
Mounting	DIN rail mountable TS35 (EN 60715)
Application height	2000 m
Installation position	vertical
Protection class	IP20
Protection class	I
Over voltage category	II
Degree of polution	2
Weight	0.340 kg/piece
Connection device	Screw terminal 0.20 mm^2 – 2.5 mm^2 max. 0.56 Nm
Approvals	cULus (E249179)
Standards	UL 60950-1, EN 60950-1, EN 61000-6-3, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 55024, EN 61000-6-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11
Monitoring	
DC ON Control (Rdy)	–
Switching voltage	–
Switching current	–
Switching capacity	–
Isolation voltage	–

* **S** Article on stock
A Article available at short notice
R Article on request

Power supply · regulated, 60 W

Primary switchmode power supply, Single-phase, Class 2
Input: wide-range input AC 85–264 V, DC 90–375 V
Output: 12 V / 24 V, adjustable

Dimensions



Description		Part-No.		Type	PU
Screw terminal					
Output voltage/current	DC 12 V/5 A	722769	**A***	DRA60-12A	1
	DC 24 V/2.5 A	722754	**S***	DRA60-24A	1

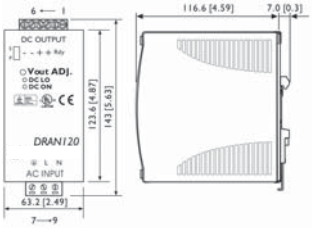
Input	**DRA60-12A**	**DRA60-24A**
Rated voltage U_N	AC 100–240 V	
Operation voltage range	AC 85–264 V / DC 90–375 V	
Line frequency	47 – 63 Hz	
Rated current I_N	690 mA @ AC 115 V / 360 mA @ AC 230 V	
Inrush current	20 A @ AC 115 V / 40 A @ AC 230 V	
Internal fuse	T 2 A/AC 250 V	
External fuse	Mini-circuit breaker: B 6 A	
Power Factor Correction P.F.C.	–	
Output		
Rated voltage U_N	DC 12 V	DC 24 V
Rated current I_N	5 A	2.5 A
Max. output current	–	
Short-circuit current	–	
Setting range $U_{out\ min.}/U_{out\ max.}$	12-14 V	24-28 V
Accuracy	±1 %	
Load regulation	±0.5 %	
Line regulation	±0.5 %	
Rise time	1 s	
Temperature coefficient	±0.03 % / °C	
Ripple and Noise	50 mV	
Hold up time	20 ms @ 115 V / 30 ms @ 230 V	
Status indication DC ON LED green	≥9.6 V	≥19.2 V
Status indication DC LOW LED red	–	
Parallel / redundant mode	max. 2 devices / via external decoupling diodes e.g. 722987	
Efficiency	86 %	89 %
Heat dissipation	9 A @ AC 230 V	8.8 W @ AC 230 V
Rated over load protection	110–150 %	
Over voltage protection	125–138 %	
Short circuit	Hiccup Mode	
General		
Switching frequency	approx. 80 kHz	
Insulation voltage input / output	DC 4.2 kV	
Insulation voltage input / ground	DC 2.1 kV	
Insulation voltage output / ground	DC 700 V	
Insulation resistance at DC 500 V	100 MΩ	
Operation temperature range	-25 °C … +70 °C (Derating)	
Derating	Capacity: -2.5 %/°C starting at 60 °C	
Storage temperature range	-25 °C … +85 °C	
MTBF	504000 h	520000 h
Relative air humidity	20 – 90 % RH, not condensing	
Dimensions (w × h × d)	40.5 × 90.0 × 115.0 mm	
Cooling	Air convection, 25 mm clearance all-round	
Housing material	Plastic	
Mounting	DIN rail mountable TS35 (EN 60715)	
Application height	2000 m	
Installation position	vertical	
Protection class	IP20	
Protection class	I	
Over voltage category	II	
Degree of polution	2	
Weight	0.340 kg/piece	
Connection device	Screw terminal 0.20 mm^2 – 2.5 mm^2 max. 0.56 Nm	
Approvals	cULus (E249179)	
Standards	UL 60950-1, UL 1310 Class 2, EN 60950-1, EN 61558-1, EN 61558-2-17, EN 61000-6-3, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 55024, EN 61000-6-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11	
Monitoring		
DC ON Control (Rdy)	Open Collector	
Switching voltage	DC 24 V	
Switching current	≤35 mA	
Switching capacity	–	
Isolation voltage	none	

* **S** Article on stock
A Article available at short notice
R Article on request

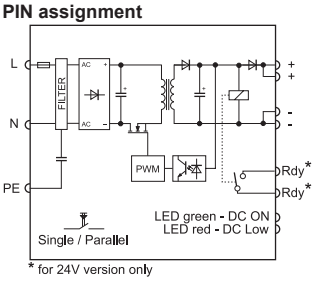
Power supply · regulated, 120 W

Primary switchmode power supply, PFC, Single-phase
Input: wide-range input AC 90–132 V, AC 186–264 V, DC 210–370 V
Output: 12 V / 24 V / 48 V, adjustable

Dimensions

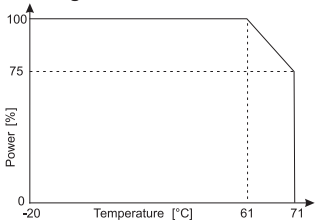


PIN assignment

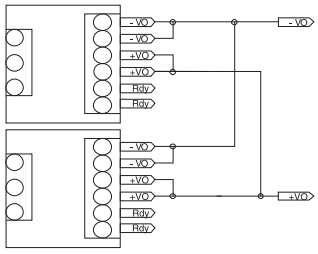


* for 24V version only

Derating



Parallel/redundant mode



Description		Part-No.		Type	PU
Screw terminal, pluggable					
Output voltage/current	DC 12 V/10 A	722770	**A***	DRAN120-12B	1
	DC 24 V/5 A	722758	**S***	DRAN120-24B	1
	DC 48 V/2.5 A	722777	**R***	DRAN120-48B	1

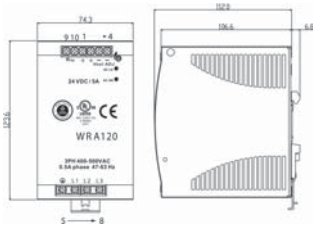
Input	**DRAN120-12B**	**DRAN120-24B**	**DRAN120-48B**
Rated voltage U_N	AC 115 / 230 V (auto select)		
Operation voltage range	AC 90–132 V / AC 186–264 V / DC 210–370 V		
Line frequency	47 – 63 Hz		
Rated current I_N	1.25 A @ AC 115 V / 0.63 A @ AC 230 V		
Inrush current	24 A @ AC 115 V / 48 A @ AC 230 V		
Internal fuse	T3, 15 A/AC 250 V		
External fuse	Mini-circuit breaker: B 6 A		
Power Factor Correction P.F.C.	0.7		
Output			
Rated voltage U_N	DC 12 V	DC 24 V	DC 48 V
Rated current I_N	10 A	5 A	2.5 A
Max. output current	–		
Short-circuit current	–		
Setting range $U_{out\ min.}/U_{out\ max.}$	11.4-14.5 V	22.5/28.5 V	45-55 V
Accuracy	±1 %		
Load regulation	Single ±1 %, Parallel ±5 %		
Line regulation	±0.5 %		
Rise time	1 s		
Temperature coefficient	±0.03 % / °C		
Ripple and Noise	50 mV		
Hold up time	25 ms @ 115 V / 30 ms @ 230 V		
Status indication DC ON LED green	≥10–11.2 V	≥17.6–19.4 V	≥37–43 V
Status indication DC LOW LED red	≤10–11.2 V	≤17.6–19.4 V	≤37–43 V
Parallel / redundant mode	max. 3 units at 90% load current, manual switch S/P		
Efficiency	84 %	86 %	87 %
Heat dissipation	24 A @ AC 230 V	20 A @ AC 230 V	19 A @ AC 230 V
Rated over load protection	105–125 %		
Over voltage protection	125–145 %		
Short circuit	Current limit		
General			
Switching frequency	approx. 80 kHz		
Insulation voltage input / output	DC 4.2 kV		
Insulation voltage input / ground	DC 2.1 kV		
Insulation voltage output / ground	DC 700 V		
Insulation resistance at DC 500 V	100 MΩ		
Operation temperature range	-25 °C … +70 °C (Derating)		
Derating	Capacity: -2.5 %/°C starting at 60 °C		
Storage temperature range	-25 °C … +85 °C		
MTBF	440000 h	450000 h	482000 h
Relative air humidity	20 – 90 % RH, not condensing		
Dimensions (w × h × d)	63.5 × 142.0 × 116.0 mm		
Cooling	Air convection, 25 mm clearance all-round		
Housing material	Metal		
Mounting	DIN rail mountable TS35 (EN 60715)		
Application height	2000 m		
Installation position	vertical		
Protection class	IP20		
Protection class	I		
Over voltage category	II		
Degree of polution	2		
Weight	0.920 kg/piece		
Connection device	Screw terminal 0.20 mm^2 – 2.5 mm^2 plug-in max. 0.56 Nm		
Approvals	UL 508 listed, UL 60950-1, EN 60950-1, EN 61000-6-3, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 61000-6-3 Class I, EN 55024 Class I, Division 2, Groups A, B, C, D		
Monitoring			
DC ON Control (Rdy)	–	N/O contact	–
Switching voltage	–	DC 60 V	–
Switching current	–	max. 300 mA	–
Switching capacity	–		
Isolation voltage	–	DC 500 V	–

* **S** Article on stock
A Article available at short notice
R Article on request

Power supply · regulated, 120 W, 3-phase

Primary switchmode power supply, PFC, 3-phase
Input: wide-range input AC 340–575 V, DC 480–820 V
Output: 24 V, adjustable

Dimensions



Description		Part-No.	Type	PU
Screw terminal				
Output voltage/current	DC 24 V/5 A	722803 **A***	WRA120-24	1

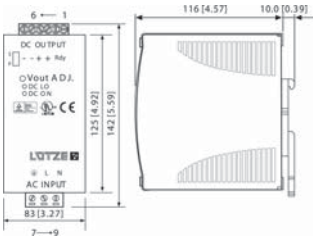
Input	**WRA120-24**
Rated voltage U_N	3 × AC 380–480 V
Operation voltage range	3 × AC 340–575 V / 3 × DC 480–820 V
Line frequency	47 – 63 Hz
Rated current I_N	0.5 A @ AC 380 V / 0.35 A @ AC 500 V
Inrush current	10 A
Internal fuse	3 × T2, 0 A/AC 600 V
External fuse	Mini-circuit breaker: 3 × B 6 A
Power Factor Correction P.F.C.	0.6
Output	
Rated voltage U_N	DC 24 V
Rated current I_N	5 A
Max. output current	–
Short-circuit current	–
Setting range $U_{out\ min.}/U_{out\ max.}$	22.5/28.5 V
Accuracy	1 %
Load regulation	±1 %
Line regulation	±1 %
Rise time	1 s
Temperature coefficient	±0.03 % / °C
Ripple and Noise	100 mV
Hold up time	min. 20 ms
Status indication DC ON LED green	≥17.6–19.4 V
Status indication DC LOW LED red	≤17.6–19.4 V
Parallel / redundant mode	max. 2 devices / via external decoupling diodes e.g. 722987
Efficiency	89 %
Heat dissipation	16 A @ AC 380 V
Rated over load protection	115–135 %, temperature: disconnection at 100–110°C and automatic activation when cool off
Over voltage protection	125–137 %
Short circuit	Hiccup Mode
General	
Switching frequency	approx. 70 kHz
Insulation voltage input / output	DC 4.2 kV
Insulation voltage input / ground	DC 2.1 kV
Insulation voltage output / ground	DC 700 V
Insulation resistance at DC 500 V	100 MΩ
Operation temperature range	-25 °C … +71 °C (Derating)
Derating	Capacity: -2.5 %/°C starting at +61 °C
Storage temperature range	-25 °C … +85 °C
MTBF	559000 h
Relative air humidity	20 – 90 % RH, not condensing
Dimensions (w × h × d)	74.3 × 123.6 × 118.8 mm
Cooling	Air convection, 25 mm clearance all-round
Housing material	Metal
Mounting	DIN rail mountable TS35 (EN 60715)
Application height	3000 m
Installation position	vertical
Protection class	IP20
Protection class	I
Over voltage category	II
Degree of polution	2
Weight	0.800 kg/piece
Connection device	Screw terminal 0.20 mm^2 – 4.0 mm^2 max. 0.62 Nm
Approvals	cULus (E249179)
Standards	UL 60950-1, EN 60950-1, EN 61000-6-3, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 55024 Class I
Monitoring	
DC ON Control (Rdy)	N/O contact
Switching voltage	DC 60 V
Switching current	max. 300 mA
Switching capacity	–
Isolation voltage	DC 500 V

* **S** Article on stock
A Article available at short notice
R Article on request

Power supply · regulated, 240 W

Primary switchmode power supply, PFC, Single-phase
Input: wide-range input AC 88-264 V, DC 120-375V
Output: 24 V / 48 V, adjustable

Dimensions



Description		Part-No.		Type	PU
Screw terminal, pluggable					
Output voltage/current	DC 24 V/10 A	722759	**S***	DRA240-24B	1
	DC 48 V/5 A	722778	**S***	DRA240-48B	1
Screw terminal					
Output voltage/current	DC 24 V/10 A	722781	**S***	DRA240-24A	1

Input	**DRA240-24B**	**DRA240-48B**	**DRA240-24A**
Rated voltage U_N		AC 115/230 V	
Operation voltage range		AC 88–264 V / DC 120–375 V	
Line frequency		47 – 63 Hz	
Rated current I_N		2.4 A @ AC 115 V / 12 A @ AC 230 V	
Inrush current		30 A @ AC 115 V / 60 A @ AC 230 V	
Internal fuse		T6, 3 A/AC 250 V	
External fuse		Mini-circuit breaker: B 10 A, C 6 A	
Power Factor Correction P.F.C.		0.7	
Output			
Rated voltage U_N	DC 24 V	DC 48 V	DC 24 V
Rated current I_N	10 A	5 A	10 A
Max. output current		–	
Short-circuit current		–	
Setting range $U_{out\ min.}/U_{out\ max.}$	22.5/28.5 V	47-56 V	22.5/28.5 V
Accuracy		±1 %	
Load regulation		Single ±1 %, Parallel ±5 %	
Line regulation		±0.5 %	
Rise time		1 s	
Temperature coefficient		±0.03 % / °C	
Ripple and Noise		100 mV	
Hold up time		25 ms @ 115 V / 30 ms @ 230 V	
Status indication DC ON LED green	≥17.6–19.4 V	≥37–43 V	≥17.6–19.4 V
Status indication DC LOW LED red	≤17.6–19.4 V	≤37–43 V	≤17.6–19.4 V
Parallel / redundant mode		max. 3 units at 90% load current, manual switch S/P	
Efficiency	89 %	90 %	89 %
Heat dissipation	35 A @ AC 230 V	32 A @ AC 230 V	35 A @ AC 230 V
Rated over load protection		105–145 %	
Over voltage protection		120–145 %	
Short circuit		Current limit	
General			
Switching frequency		approx. 40 kHz	
Insulation voltage input / output		DC 4.2 kV	
Insulation voltage input / ground		DC 2.1 kV	
Insulation voltage output / ground		DC 700 V	
Insulation resistance at DC 500 V		100 MΩ	
Operation temperature range		-40 °C … +71 °C (Derating)	
Derating		Capacity: -2.5 %/°C starting at +61 °C	
Storage temperature range		-25 °C … +85 °C	
MTBF	423000 h	437000 h	423000 h
Relative air humidity		20 – 90 % RH, not condensing	
Dimensions (w × h × d)		83.0 × 126.0 × 116.0 mm	
Cooling		Air convection, 25 mm clearance all-round	
Housing material		Metal	
Mounting		DIN rail mountable TS35 (EN 60715)	
Application height		4850 m	
Installation position		vertical	
Protection class		IP20	
Protection class		I	
Over voltage category		II	
Degree of polution		2	
Weight		1.000 kg/piece	
Connection device		Screw terminal 0.20 mm^2 – 2.5 mm^2 plug-in max. 0.56 Nm	Screw terminal 0.20 mm^2 – 4.0 mm^2 max. 0.62 Nm
Approvals		cULus (E249179)	
Standards		UL 60950-1, EN 60950-1, EN 61000-6-3, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 55024 Class I, Division 2, Groups A, B, C, D	
Monitoring			
DC ON Control (Rdy)	N/O contact	–	N/O contact
Switching voltage	DC 60 V	–	DC 60 V
Switching current	max. 300 mA	–	max. 300 mA
Switching capacity		–	
Isolation voltage	DC 500 V	–	DC 500 V

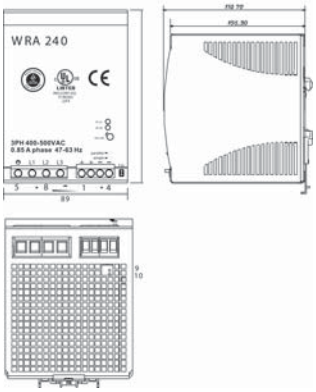
* **S** Article on stock
A Article available at short notice
R Article on request

Power supply · regulated, 240 W, 3-phase

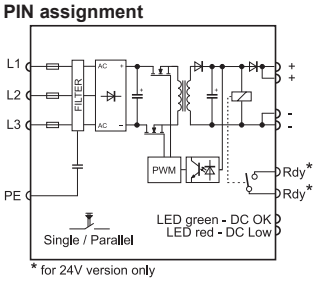
Primary switchmode power supply, PFC, 3-phase
Input: wide-range input AC 340–576 V, DC 480–820 V
Output: 24 V, adjustable

Dimensions

mm [inch]

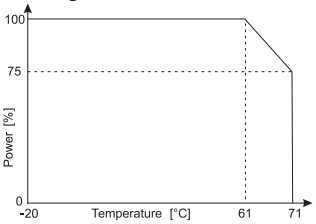


PIN assignment

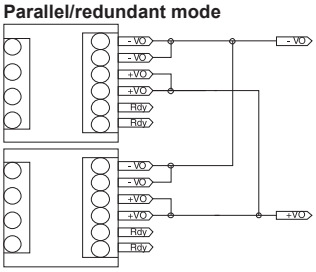


* for 24V version only

Derating



Parallel/redundant mode



Description		Part-No.		Type	PU
Screw terminal					
Output voltage/current	DC 24 V/10 A	722804	**S***	WRA240-24	1

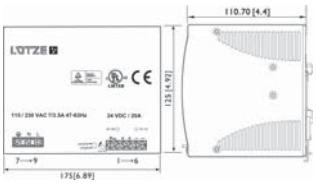
Input	**WRA240-24**
Rated voltage U_N	3 × AC 340–500 V
Operation voltage range	3 × AC 340–575 V / 3 × DC 480–820 V
Line frequency	47 – 63 Hz
Rated current I_N	0.85 A @ AC 380 V / 0.7 A @ AC 500 V
Inrush current	20 A
Internal fuse	3 × T2, 0 A/AC 600 V
External fuse	Mini-circuit breaker: 3 × B 6 A
Power Factor Correction P.F.C.	0.6
Output	
Rated voltage U_N	DC 24 V
Rated current I_N	10 A
Max. output current	–
Short-circuit current	–
Setting range $U_{out\ min.}/U_{out\ max.}$	22.5/28.5 V
Accuracy	1 %
Load regulation	Single ±1 %, Parallel ±5 %
Line regulation	±1 %
Rise time	1 s
Temperature coefficient	±0.03 % / °C
Ripple and Noise	100 mV
Hold up time	min. 20 ms
Status indication DC ON LED green	≥17.6–19.4 V
Status indication DC LOW LED red	≤17.6–19.4 V
Parallel / redundant mode	max. 2 units at 90% load current, manual switch S/P
Efficiency	90 %
Heat dissipation	30 A @ AC 380 V
Rated over load protection	Temperature: Deactivation at 100–110°C and automatic activation after cooling off
Over voltage protection	125–137 %
Short circuit	Hiccup Mode
General	
Switching frequency	approx. 25 kHz
Insulation voltage input / output	DC 4.2 kV
Insulation voltage input / ground	DC 2.1 kV
Insulation voltage output / ground	DC 700 V
Insulation resistance at DC 500 V	100 MΩ
Operation temperature range	-25 °C … +71 °C (Derating)
Derating	Capacity: -2.5 %/°C starting at +61 °C
Storage temperature range	-25 °C … +85 °C
MTBF	488000 h
Relative air humidity	20 – 90 % RH, not condensing
Dimensions (w × h × d)	89.0 × 123.6 × 117.5 mm
Cooling	Air convection, 25 mm clearance all-round
Housing material	Metal
Mounting	DIN rail mountable TS35 (EN 60715)
Application height	3000 m
Installation position	vertical
Protection class	IP20
Protection class	I
Over voltage category	II
Degree of polution	2
Weight	1.100 kg/piece
Connection device	Screw terminal 0.20 mm^2 – 4.0 mm^2 max. 0.62 Nm
Approvals	UL 508 listed, UL 60950-1, EN 60950-1, EN 61000-6-3, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 55024 Class I, Division 2, Groups A, B, C, D
Monitoring	
DC ON Control (Rdy)	N/O contact
Switching voltage	DC 60 V
Switching current	max. 300 mA
Switching capacity	–
Isolation voltage	DC 500 V

* **S** Article on stock
A Article available at short notice
R Article on request

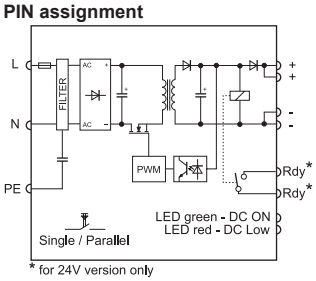
Power supply · regulated, 480 W

Primary switchmode power supply, PFC, Single-phase
Input: wide-range input AC 90–264 V, DC 120–370 V
Output: 24 V, adjustable

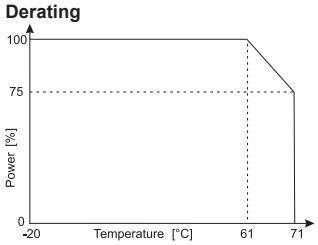
Dimensions



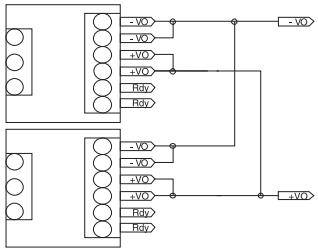
PIN assignment



Derating



Parallel/redundant mode



Description		Part-No.	Type	PU
Screw terminal				
Output voltage/current	DC 24 V/20 A	722782 **S***	DRA480-24A	1

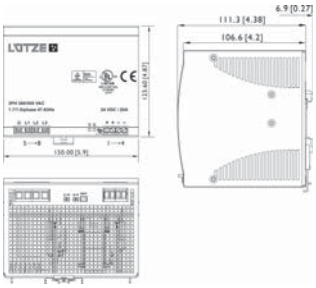
Input	**DRA480-24A**
Rated voltage U_N	AC 115 / 230 V (auto select)
Operation voltage range	AC 90–264 V / DC 120–370 V
Line frequency	47 – 63 Hz
Rated current I_N	4.8 A @ AC 115 V / 2.45 A @ AC 230 V
Inrush current	25 A @ AC 115 V / 50 A @ AC 230 V
Internal fuse	T10 A/AC 250 V
External fuse	Mini-circuit breaker: B 16 A
Power Factor Correction P.F.C.	0.99
Output	
Rated voltage U_N	DC 24 V
Rated current I_N	20 A
Max. output current	–
Short-circuit current	–
Setting range $U_{out\ min.}/U_{out\ max.}$	22.5/28.5 V
Accuracy	±1 %
Load regulation	Single ±0.5 %, Parallel ±5 %
Line regulation	±0.5 %
Rise time	1 s
Temperature coefficient	±0.03 % / °C
Ripple and Noise	100 mV
Hold up time	min. 30 ms
Status indication DC ON LED green	≥17.6–19.4 V
Status indication DC LOW LED red	≤17.6–19.4 V
Parallel / redundant mode	max. 3 units at 90% load current, manual switch S/P
Efficiency	89 %
Heat dissipation	63 A @ AC 230 V
Rated over load protection	120–140 %
Over voltage protection	125–137 %
Short circuit	Current limit
General	
Switching frequency	approx. 80 kHz
Insulation voltage input / output	DC 4.2 kV
Insulation voltage input / ground	DC 2.1 kV
Insulation voltage output / ground	DC 700 V
Insulation resistance at DC 500 V	100 MΩ
Operation temperature range	-25 °C … +71 °C (Derating)
Derating	Capacity: -4 %/°C starting at +61 °C
Storage temperature range	-25 °C … +85 °C
MTBF	403000 h
Relative air humidity	20 – 90 % RH, not condensing
Dimensions (w × h × d)	175.0 × 125.0 × 116.0 mm
Cooling	Air convection, 25 mm clearance all-round
Housing material	Metal
Mounting	DIN rail mountable TS35 (EN 60715)
Application height	2000 m
Installation position	vertical
Protection class	IP20
Protection class	I
Over voltage category	II
Degree of polution	2
Weight	1.920 kg/piece
Connection device	Screw terminal 0.20 mm^2 – 4.0 mm^2 max. 0.62 Nm
Approvals	UL 508 listed, UL 60950-1, EN 60950-1, EN 61000-6-3, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 55024
Monitoring	
DC ON Control (Rdy)	N/O contact
Switching voltage	DC 60 V
Switching current	max. 300 mA
Switching capacity	–
Isolation voltage	DC 500 V

* **S** Article on stock
A Article available at short notice
R Article on request

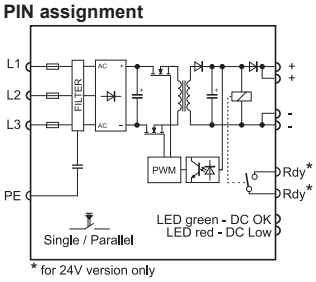
Power supply · regulated, 480 W, 3-phase

Primary switchmode power supply, PFC, 3-phase
Input: wide-range input AC 340–576 V, DC 480–820 V
Output: 24 V, adjustable

Dimensions

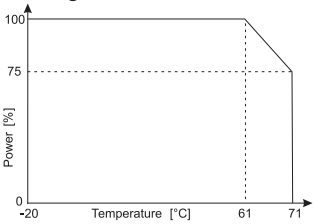


PIN assignment

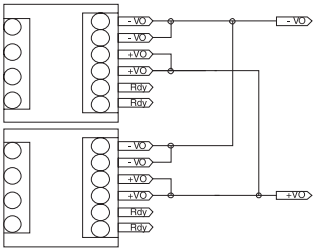


* for 24V version only

Derating



Parallel/redundant mode



Description		Part-No.		Type	PU
Screw terminal					
Output voltage/current	DC 24 V/20 A	722805	**S***	WRA480-24	1

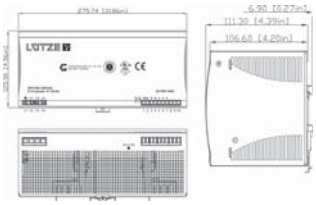
Input	**WRA480-24**
Rated voltage U_N	3 × AC 380–480 V
Operation voltage range	3 × AC 340–575 V / 3 × DC 480–820 V
Line frequency	47 – 63 Hz
Rated current I_N	1.5 A @ AC 400 V / 1.2 A @ AC 480 V
Inrush current	20 A
Internal fuse	T3, 15 A/pro Phase
External fuse	Mini-circuit breaker: 3 × B 10 A, C 6 A
Power Factor Correction P.F.C.	0.7
Output	
Rated voltage U_N	DC 24 V
Rated current I_N	20 A
Max. output current	–
Short-circuit current	–
Setting range $U_{out\ min.}/U_{out\ max.}$	22.5/28.5 V
Accuracy	1 %
Load regulation	Single ±1 %, Parallel ±5 %
Line regulation	±1 %
Rise time	–
Temperature coefficient	±0.03 % / °C
Ripple and Noise	100 mV
Hold up time	min. 20 ms
Status indication DC ON LED green	≥17.6–19.4 V
Status indication DC LOW LED red	≤17.6–19.4 V
Parallel / redundant mode	max. 3 units at 90% load current, manual switch S/P
Efficiency	90 %
Heat dissipation	58 A @ AC 380 V
Rated over load protection	115–135 %
Over voltage protection	125–137 %
Short circuit	Current limit (C) / Hiccup Mode (D), switching with switch C/D Hiccup Mode: deactivation within 3 s and restart after 30 s
General	
Switching frequency	approx. 80 kHz
Insulation voltage input / output	DC 4.2 kV
Insulation voltage input / ground	DC 2.1 kV
Insulation voltage output / ground	DC 700 V
Insulation resistance at DC 500 V	100 MΩ
Operation temperature range	-25 °C … +71 °C (Derating)
Derating	Capacity: -2.5 %/°C starting at +61 °C
Storage temperature range	-25 °C … +85 °C
MTBF	411000 h
Relative air humidity	20 – 90 % RH, not condensing
Dimensions (w × h × d)	150.0 × 125.0 × 116.0 mm
Cooling	Air convection, 25 mm clearance all-round
Housing material	Metal
Mounting	DIN rail mountable TS35 (EN 60715)
Application height	3000 m
Installation position	vertical
Protection class	IP20
Protection class	I
Over voltage category	II
Degree of polution	2
Weight	1.750 kg/piece
Connection device	Screw terminal 0.20 mm^2 – 4.0 mm^2 max. 0.62 Nm
Approvals	UL 508 listed, UL 60950-1, EN 60950-1, EN 61000-6-3, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 55024
Monitoring	
DC ON Control (Rdy)	N/O contact
Switching voltage	DC 60 V
Switching current	max. 300 mA
Switching capacity	–
Isolation voltage	DC 500 V

* **S** Article on stock
A Article available at short notice
R Article on request

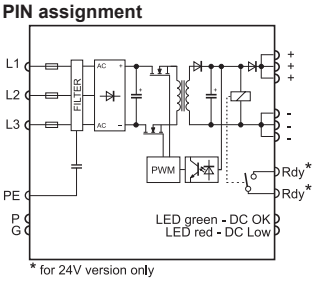
Power supply · regulated, 960 W, 3-phase

Primary switchmode power supply, PFC, 3-phase
Input: wide-range input AC 340–576 V, DC 480–820 V
Output: 24 V, adjustable

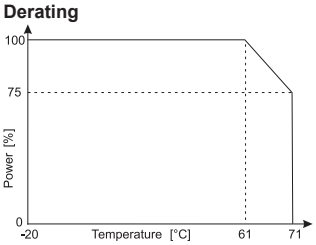
Dimensions



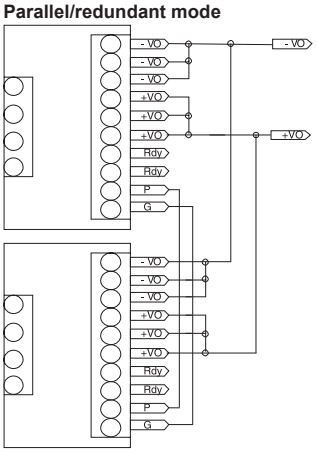
PIN assignment



Derating



Parallel/redundant mode



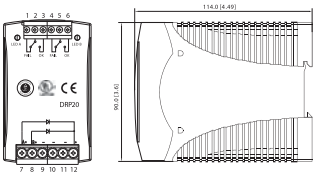
Description		Part-No.	Type	PU
Screw terminal				
Output voltage/current	DC 24 V/40 A	722806 **A***	WRA960-24	1

Input	**WRA960-24**
Rated voltage U_N	3 × AC 400–500 V
Operation voltage range	3 × AC 340–575 V / 3 × DC 480–820 V
Line frequency	47 – 63 Hz
Rated current I_N	2.4 A @ AC 400 V / 1.6 A @ AC 480 V
Inrush current	30 A
Internal fuse	T6, 3 A/per Phase
External fuse	Mini-circuit breaker: 3 × B 16 A, C 10 A
Power Factor Correction P.F.C.	0.7
Output	
Rated voltage U_N	DC 24 V
Rated current I_N	40 A
Max. output current	–
Short-circuit current	–
Setting range $U_{out\ min.}/U_{out\ max.}$	22.5/28.5 V
Accuracy	1 %
Load regulation	Single ±1 %, Parallel ±5 %
Line regulation	±1 %
Rise time	1 s
Temperature coefficient	±0.03 % / °C
Ripple and Noise	80 mV
Hold up time	15 ms
Status indication DC ON LED green	≥17.6–19.4 V
Status indication DC LOW LED red	≤17.6–19.4 V
Parallel / redundant mode	max. 2 units at 92% load current, terminal P and G for current share
Efficiency	92 %
Heat dissipation	–
Rated over load protection	Temperature: Deactivation at 100–110°C and automatic activation after cooling off
Over voltage protection	125–137 %
Short circuit	Hiccup Mode
General	
Switching frequency	approx. 52 kHz
Insulation voltage input / output	DC 4.2 kV
Insulation voltage input / ground	DC 2.1 kV
Insulation voltage output / ground	DC 700 V
Insulation resistance at DC 500 V	100 MΩ
Operation temperature range	-25 °C … +71 °C (Derating)
Derating	Capacity: -3.5 %/°C starting at +61 °C
Storage temperature range	-25 °C … +85 °C
MTBF	352000 h
Relative air humidity	20 – 90 % RH, not condensing
Dimensions (w × h × d)	276.0 × 125.0 × 118.0 mm
Cooling	Air convection, 25 mm clearance all-round
Housing material	Metal
Mounting	DIN rail mountable TS35 (EN 60715)
Application height	3000 m
Installation position	vertical
Protection class	IP20
Protection class	I
Over voltage category	II
Degree of polution	2
Weight	3.200 kg/piece
Connection device	Screw terminal 0.50 mm^2 – 10.0 mm^2 max. 0.62 Nm
Approvals	UL 508 listed, UL 60950-1, EN 60950-1, EN 61000-6-3, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 55024 Class I, Division 2, Groups A, B, C, D
Monitoring	
DC ON Control (Rdy)	N/O contact
Switching voltage	DC 60 V
Switching current	max. 300 mA
Switching capacity	–
Isolation voltage	DC 500 V

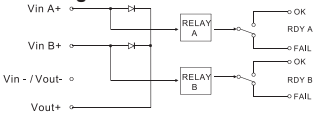
* **S** Article on stock
A Article available at short notice
R Article on request

Redundant module 20 A with 2 inputs
Potential-free signalling contact and Status LED per input
Over- and undervoltage control

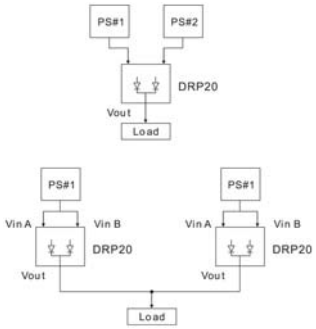
Dimensions



PIN assignment



Use



Description		Part-No.		Type	PU
Screw terminal					
Output voltage/current	DC 24 V/20 A	722987	**R***	DRP20-24	1

Input	**DRP20-24**
Rated voltage U_N	DC 24 V
Operation voltage range	DC 21–28 V
No. of inputs	2
Rated current I_N	max. 20 A in total
Internal fuse	–
External fuse	–
Output	
Rated voltage U_N	24 V
Rated current I_N	20 A
Max. output current	30 A, 5 s @ 24 V
Voltage drop	0.5 V
Inverse voltage	30 V
Heat dissipation	max. 10 W
Status indication DC ON LED green	ON: DC input A or B OK / OFF: Error
Rated over load protection	No
Over voltage protection	No
General	
Operation temperature range	-5 °C … +70 °C
Derating	–
Storage temperature range	-25 °C … +85 °C
MTBF	659000 h
Dimensions (w × h × d)	54.0 × 90.0 × 114.0 mm
Cooling	Air convection
Housing material	Plastic
Mounting	DIN rail mountable TS35 (EN 60715)
Application height	4850 m
Installation position	vertical
Protection class	IP20 (IEC 529, EN 60529)
Over voltage category	II
Degree of polution	2
Weight	0.210 kg/piece
Connection device	Input Screw terminal 0.20 mm^2 – 4.0 mm^2 Output Screw terminal 0.20 mm^2 – 4.0 mm^2 Relays Screw terminal 0.20 mm^2 – 2.5 mm^2
Approvals	–
Standards	UL 508 listed, UL 60950-1, EN 55022 Class B, EN 55024, EN 61000-4-2/3/4/6/8, EN 61204-3
Monitoring	
DC ON Control (Rdy)	Changeover contact per input No error: input voltage >20 V or <30 V, connection 2(5) - 3(6) closed Error: input voltage <20 V or >30 V, connection 2(5) - 1(4) closed
Switching voltage	AC 300 V / DC 150 V
Switching current	AC/DC 1 A
Switching capacity	300 VA / 30 W
Isolation voltage	AC 100 V

* **S** Article on stock
A Article available at short notice
R Article on request

Notes

Modular, flexible and safe: LOC

The intelligent LÜTZE Overload

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

Small device – width 8,1mm

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

Contact slots for each potential usable for jumper combs

Control Solutions

C-Box / LOCC-Box-Net
Current Control System

*Sky***BLUE**

Remote ON / OFF

Manual ON / OFF

Status indication “operation”, “fault”, “90 % load” and “100 % load”

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

UL 508 Listed

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

Intelligent current monitoring management system: LCOS-C

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

Control Solutions

and energy
C

*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, GL approvals

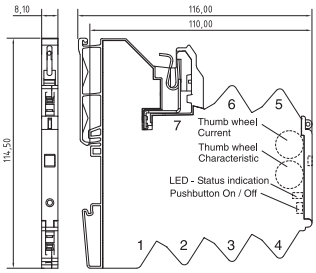
Plug-in functional assemblies

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

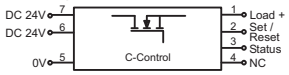
Description		Part-No.		Type	PU
Spring terminal					
Rated voltage U_N	DC 12/24 V	716400	**S***	LOCC-Box-FB 7-6400	1
	DC 12/24 V	716401	**S***	LOCC-Box-FB 7-6401	1
	DC 12/24 V	716401.0050	**S***	LOCC-Box-FB 7-6401	50

Input	**LOCC-Box-FB 7-6400**	**LOCC-Box-FB 7-6401**
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	<170 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-acting (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	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		
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)	
Mounting	DIN rail mountable TS35 (EN 60715)	
Protection class	IP20	
Installation position	any	
Connection device	Spring terminal 0.25 mm^2 – 2.5 mm^2	
Operation temperature range	-25 °C … +50 °C	
Storage temperature range	-40 °C … +85 °C	
Dimensions (w × h × d)	8.1 × 114.5 × 116.0 mm	
Weight	0.120 kg/piece	
Approvals	cULus (E135145), GL	
Standards	EN 60950-1, EN 61131-1, 2, EN 61000, EN 60947-4-1, EN 55022	

Dimensions

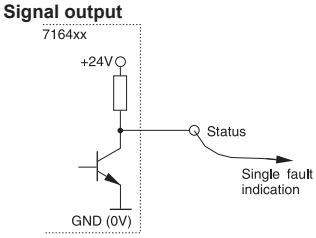


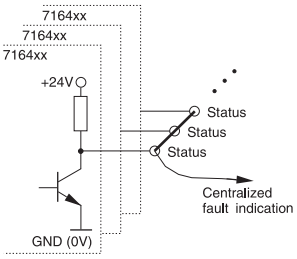
PIN assignment



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

Signal output





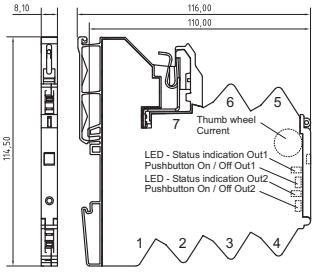
* **S** Article on stock
A Article available at short notice
R Article on request

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

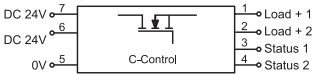
Description		Part-No.		Type	PU
Spring terminal					
Rated voltage U_N	DC 12/24 V	716415.0300	**S***	LOCC-Box-ED 7-6415	1

Input	**LOCC-Box-ED 7-6415**
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	–
Supply current	DC 40 A over Cu-rails 10 × 3 mm
Reverse voltage protection	internal electronics
Connection type input	Spring terminal 0.25 mm² – 2.5 mm²
Output	
Switching element	MosFet
Output current	max. DC 6 A/channel
Amperage range	DC 2 × 6 A Total current
Voltage drop	<102 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	High level: no error Low level: unit has triggered or is switched off
Switching element	Transistor, collector with pull-up resistance
General	
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Colour of the housing	RAL 7012 basalt grey
Mounting	DIN rail mountable TS35 (EN 60715)
MTBF	690000 h @ 40 °C, 100 operations button, 30 revolutions coding switch
Protection class	IP20
Installation position	any
Connection device	Spring terminal 0.25 mm² – 2.5 mm²
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 × 114.5 × 116.0 mm
Weight	0.120 kg/piece
Approvals	cULus (E135145), GL
Standards	EN 60950-1, EN 61131-1, 2, EN 61000, EN 60947-4-1, EN 55022

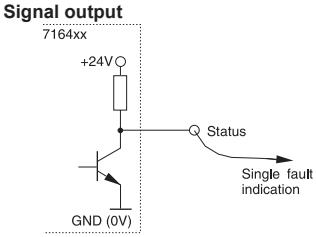
Dimensions

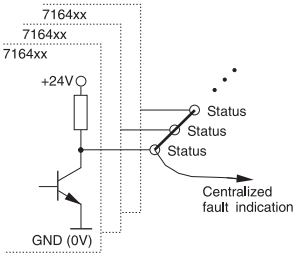


PIN assignment



Signal output





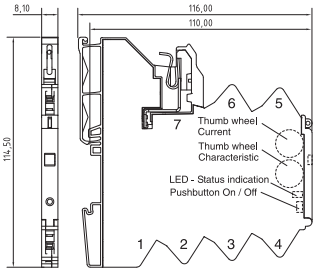
* **S** Article on stock
A Article available at short notice
R Article on request

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

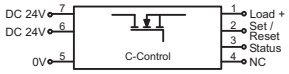
Description		Part-No.		Type	PU
Spring terminal					
Rated voltage U_N	DC 12/24 V	716409	**S***	LOCC-Box-FB2A 7-6409	1

Input	**LOCC-Box-FB2A 7-6409**
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	<140 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	
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	DIN rail mountable TS35 (EN 60715)
Protection class	IP20
Installation position	any
Connection device	Spring terminal 0.25 mm^2 – 2.5 mm^2
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +75 °C
Dimensions (w × h × d)	8.1 × 114.5 × 116.0 mm
Weight	0.120 kg/piece
Approvals	cULus (E135145), GL in preparation
Standards	EN 60950-1, EN 61131-1, 2, EN 61000, EN 60947-4-1, EN 55022

Dimensions

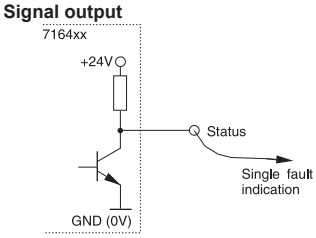


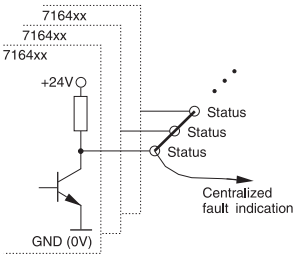
PIN assignment



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

Signal output





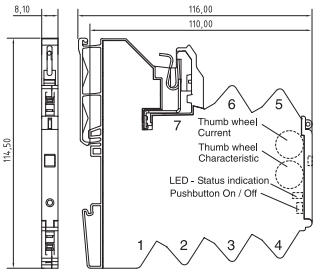
* **S** Article on stock
A Article available at short notice
R Article on request

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

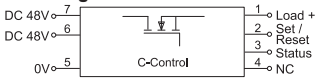
Description		Part-No.	Type	PU
Spring terminal				
Rated voltage U_N	DC 48 V	716406 **S***	LOCC-Box-FB48 7-6406	1

Input	**LOCC-Box-FB48 7-6406**
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	<85 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-acting (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	
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	DIN rail mountable TS35 (EN 60715)
Protection class	IP20
Installation position	any
Connection device	Spring terminal 0.25 mm^2 – 2.5 mm^2
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +75 °C
Dimensions (w × h × d)	8.1 × 114.5 × 116.0 mm
Weight	0.120 kg/piece
Approvals	cULus (E135145)
Standards	EN 60950-1, EN 61131-1, 2, EN 61000, EN 60947-4-1, EN 55022

Dimensions

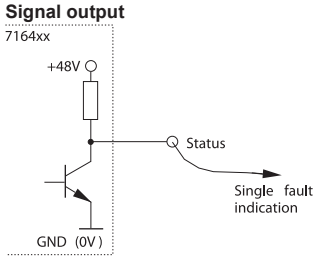


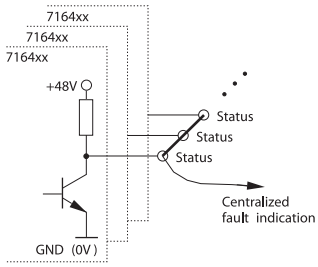
PIN assignment



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

Signal output





* **S** Article on stock
A Article available at short notice
R Article on request

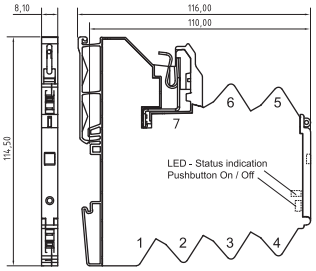
Load monitoring · LOCC-Box-EC

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)

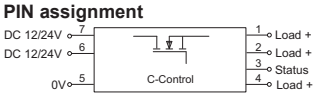
Description		Part-No.		Type	PU
Spring terminal					
Rated voltage U_N	DC 12/24 V	716407.xxxx	**A***	LOCC-Box-EC-I-C	1

Input	**LOCC-Box-EC-I-C**
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	–
OFF	–
ON	–
Output	
Switching element	MosFet
Output current	max. DC 10 A
Voltage drop	<170 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	
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	DIN rail mountable TS35 (EN 60715)
Protection class	IP20
Installation position	any
Connection device	Spring terminal 0.25 mm^2 – 2.5 mm^2
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 × 114.5 × 116.0 mm
Weight	0.120 kg/piece
Approvals	cULus (E135145)
Standards	EN 60950-1, EN 61131-1, 2, EN 61000, EN 60947-4-1, EN 55022

Dimensions

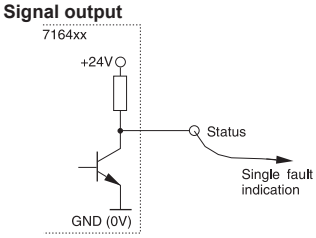


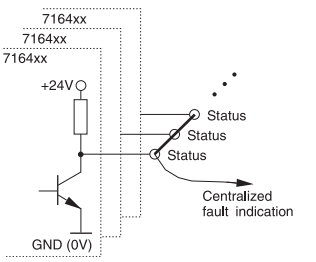
PIN assignment



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

Signal output





Order code

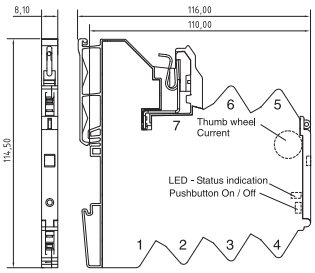
716407. 2 3 50

Type		Current range		Characteristic		PU	
		1	1A	1	fast	00	1 pc.
		2	2A	2	medium	**50**	50 pcs.
		3	3A	**3**	slow-1		
		⋮		4	slow-2		
		0	10A	5	slow-3		

* **S** Article on stock
A Article available at short notice
R Article on request

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)

Dimensions



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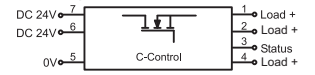
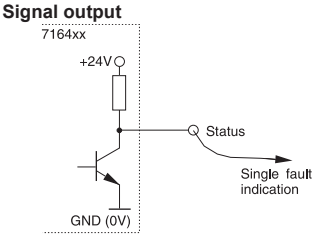
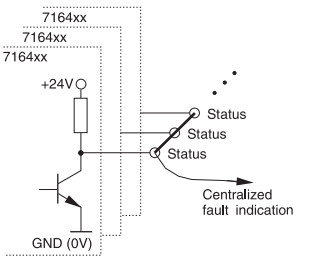


1: Load +
2: Load +
3: Status output
4: Load +
5: 0V
6: + Supply (alternative)
7: + Supply

Signal output





Description		Part-No.		Type	PU
Spring terminal					
Rated voltage U_N	DC 12/24 V	716412.xxxx	**A***	LOCC-Box-EC-I-C	1

Input	**LOCC-Box-EC-I-C**
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	<170 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	
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	DIN rail mountable TS35 (EN 60715)
Protection class	IP20
Installation position	any
Connection device	Spring terminal 0.25 mm^2 – 2.5 mm^2
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 × 114.5 × 116.0 mm
Weight	0.120 kg/piece
Approvals	cULus (E135145)
Standards	EN 60950-1, EN 61131-1, 2, EN 61000, EN 60947-4-1, EN 55022

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

* **S** Article on stock
A Article available at short notice
R Article on request

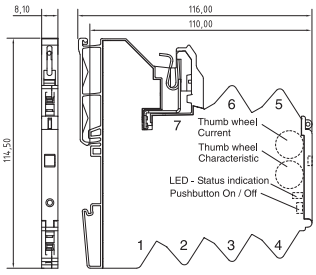
Load monitoring · LOCC-Box-SC

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

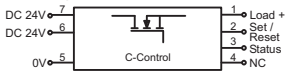
Description		Part-No.		Type	PU
Spring terminal					
Rated voltage U_N	DC 12/24 V	716408	**A***	LOCC-Box-SC 7-6408	1

Input	**LOCC-Box-SC 7-6408**
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	<85 mV (5 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 – 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"
Switching element	Transistor, collector with pull-up resistance
General	
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	DIN rail mountable TS35 (EN 60715)
Protection class	IP20
Installation position	any
Connection device	Spring terminal 0.25 mm^2 – 2.5 mm^2
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 × 114.5 × 116.0 mm
Weight	0.120 kg/piece
Approvals	cULus (E135145)
Standards	EN 60950-1, EN 61131-1, 2, EN 61000, EN 60947-4-1, EN 55022

Dimensions

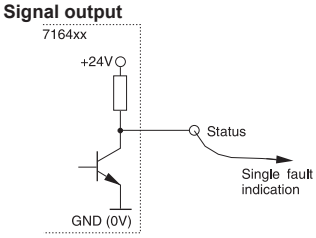


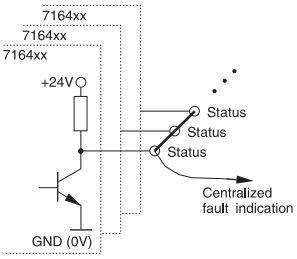
PIN assignment



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

Signal output





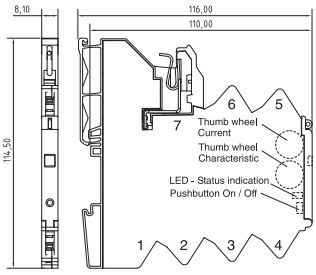
* **S** Article on stock
A Article available at short notice
R Article on request

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

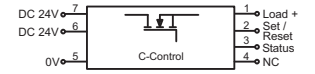
Description		Part-No.	Type	PU
Spring terminal				
Rated voltage U_N	DC 12/24 V	716413 **S***	LOCC-Box-C2 7-6413	1

Input	**LOCC-Box-C2 7-6413**
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 5 A
Voltage drop	–
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'
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	
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	DIN rail mountable TS35 (EN 60715)
Protection class	IP20
Installation position	any
Connection device	Spring terminal 0.25 mm^2 – 2.5 mm^2
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +75 °C
Dimensions (w × h × d)	8.1 × 114.5 × 116.0 mm
Weight	0.120 kg/piece
Approvals	cULus (E135145), GL in preparation, NEC Class 2 (E170585)
Standards	EN 60950-1, EN 61131-1, 2, EN 61000, EN 60947-4-1, EN 55022

Dimensions

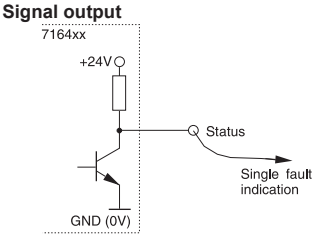


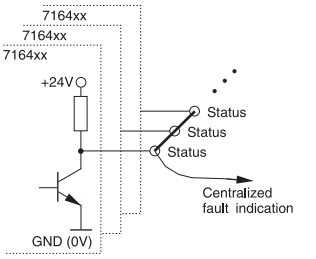
PIN assignment



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

Signal output





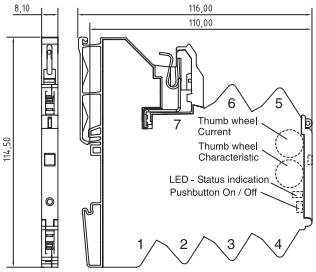
* **S** Article on stock
A Article available at short notice
R Article on request

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

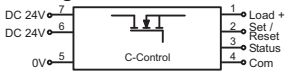
Description		Part-No.		Type	PU
Spring terminal					
Rated voltage U_N	DC 12/24 V	716403	**R***	LOCC-Box-Net 7-6403	1
	DC 12/24 V	716404	**R***	LOCC-Box-Net 7-6404	1

Input	LOCC-Box-Net 7-6403	LOCC-Box-Net 7-6404
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	Low level	
ON	High level (automatic reset)	
Output		
Switching element	MosFet	
Output current	max. DC 10 A	
Voltage drop	<170 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		
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)	
Mounting	DIN rail mountable TS35 (EN 60715)	
Protection class	IP20	
Installation position	any	
Connection device	Spring terminal 0.25 mm^2 – 2.5 mm^2	
Operation temperature range	-25 °C … +50 °C	
Storage temperature range	-40 °C … +85 °C	
Dimensions (w × h × d)	8.1 × 114.5 × 116.0 mm	
Weight	0.120 kg/piece	
Approvals	cULus (E135145), GL in preparation	
Standards	EN 60950-1, EN 61131-1, 2, EN 61000, EN 60947-4-1, EN 55022	

Dimensions

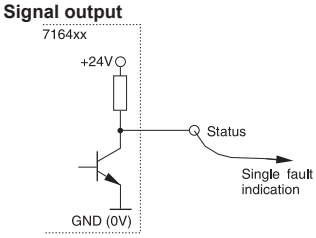


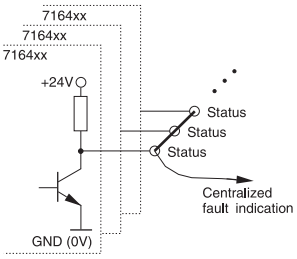
PIN assignment



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

Signal output





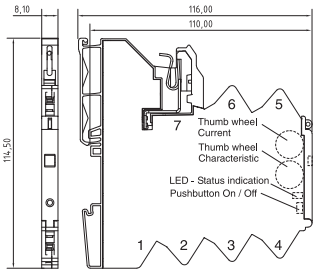
* **S** Article on stock
A Article available at short notice
R Article on request

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

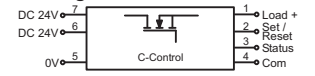
Description		Part-No.	Type	PU
Spring terminal				
Rated voltage U_N	DC 12/24 V	716410 **S***	LOCC-Box-Net 7-6410	1
	DC 12/24 V	716410.0050 **S***	LOCC-Box-Net 7-6410	50

Input	**LOCC-Box-Net 7-6410**
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	<170 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	
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	DIN rail mountable TS35 (EN 60715)
Protection class	IP20
Installation position	any
Connection device	Spring terminal 0.25 mm^2 – 2.5 mm^2
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 × 114.5 × 116.0 mm
Weight	0.120 kg/piece
Approvals	cULus (E135145), GL
Standards	EN 60950-1, EN 61131-1, 2, EN 61000, EN 60947-4-1, EN 55022

Dimensions

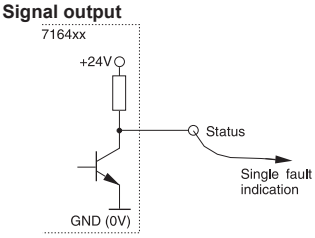


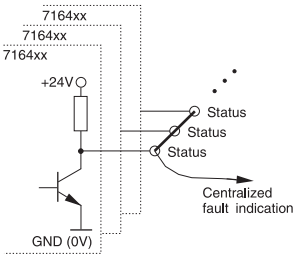
PIN assignment



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

Signal output





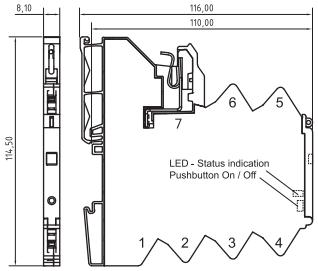
* **S** Article on stock
A Article available at short notice
R Article on request

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)

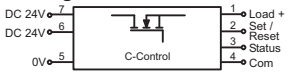
Description		Part-No.		Type	PU
Rated voltage U_N	DC 12/24 V	716411	**R***	LOCC-Box-Net 7-6411	1

Input	**LOCC-Box-Net 7-6411**
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	<170 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	
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	DIN rail mountable TS35 (EN 60715)
Protection class	IP20
Installation position	any
Connection device	Spring terminal 0.25 mm^2 – 2.5 mm^2
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 × 114.5 × 116.0 mm
Weight	0.120 kg/piece
Approvals	cULus (E135145), GL in preparation
Standards	EN 60950-1, EN 61131-1, 2, EN 61000, EN 60947-4-1, EN 55022

Dimensions

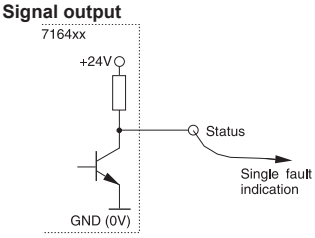


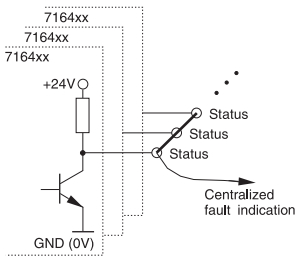
PIN assignment



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

Signal output





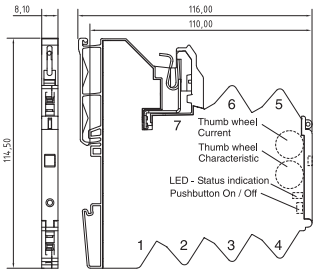
* **S** Article on stock
A Article available at short notice
R Article on request

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

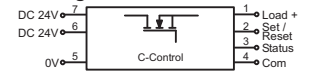
Description		Part-No.		Type	PU
Spring terminal					
Rated voltage U_N	DC 12/24 V	716418	**S***	LOCC-Box-Net-SC 7-6418	1

Input	**LOCC-Box-Net-SC 7-6418**
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	<85 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	
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	DIN rail mountable TS35 (EN 60715)
Protection class	IP20
Installation position	any
Connection device	Spring terminal 0.25 mm^2 – 2.5 mm^2
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 × 114.5 × 116.0 mm
Weight	0.120 kg/piece
Approvals	cULus (E135145), GL in preparation
Standards	EN 60950-1, EN 61131-1, 2, EN 61000, EN 60947-4-1, EN 55022

Dimensions

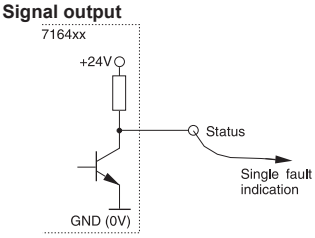


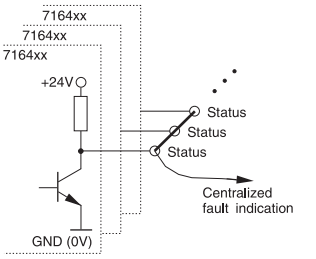
PIN assignment



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

Signal output





* **S** Article on stock
A Article available at short notice
R Article on request

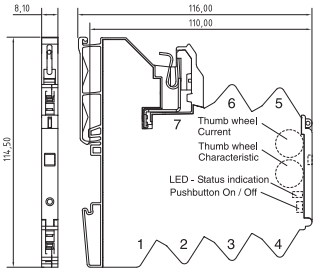
Load monitoring · LOCC-Box-Net Class 2

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

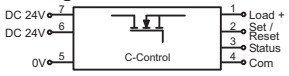
Description		Part-No.		Type	PU
Spring terminal					
Rated voltage U_N	DC 12/24 V	716414	**S***	LOCC-Box-C2 NET 7-6414	1

Input	**LOCC-Box-C2 NET 7-6414**
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 10 A
Voltage drop	<170 mV (10 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'
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	
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	DIN rail mountable TS35 (EN 60715)
Protection class	IP20
Installation position	any
Connection device	Spring terminal 0.25 mm^2 – 2.5 mm^2
Operation temperature range	-25 °C … +50 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 × 114.5 × 116.0 mm
Weight	0.120 kg/piece
Approvals	cULus (E135145), GL in preparation, NEC Class 2 (E170585)
Standards	EN 60950-1, EN 61131-1, 2, EN 61000, EN 60947-4-1, EN 55022

Dimensions

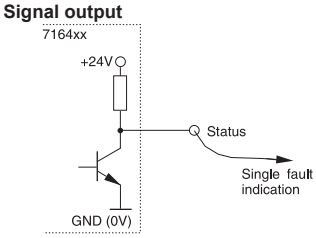


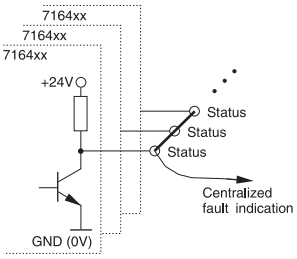
PIN assignment



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

Signal output

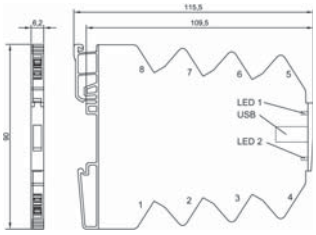




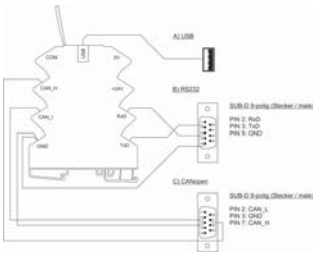
* **S** Article on stock
A Article available at short notice
R Article on request

Gateway for LOCC-Box-Net versions
Input: LOCCbus (LIN)
Output: USB, RS 232, CANopen

Dimensions



PIN assignment



Description		Part-No.		Type	PU
Spring terminal					
Rated voltage	DC 12/24 V	716459	**S***	LOCC-Box-GW 7-6459	1

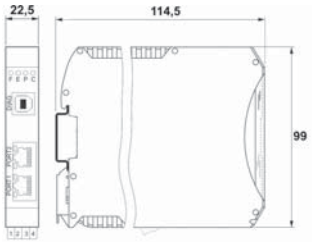
Input	**LOCC-Box-GW 7-6459**
Bus system	LOCCbus, basic LIN
Access method	Single-Master - Multiple Slave
Bus technology	Line
Physical level	1-wire
Participants	40, max. 254
Bus length	Max. 40 m
Transfer rate	9600 Baud
Data rate	8 Bit + fixed parity
Transfer protocol	Modified multi-drop
Output	
Bus system	USB 2.0 Full-Speed, RS232, CANopen
Transfer rate	USB: 12 Mbit/s RS232: 600–11500 bit/s CANopen: 10–1000 kbit/s
General	
Rated voltage	DC 12/24 V
Operation voltage range	DC 10–26.4 V
Rated current	max. 50 mA
Reverse voltage protection	Yes
Status indication	LED 1 green/red: USB, RS232, Firmware LED 2 green/red: CANopen
Insulation voltage	1.0 kV
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	DIN rail mountable TS35 (EN 60715)
Protection class	IP20
Installation position	any
Connection device	Spring terminal 0.14 mm^2 – 2.5 mm^2 (with ferrule 1.5 mm^2)
Operation temperature range	-20 °C … +60 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	6.2 × 90.0 × 115.0 mm
Weight	0.060 kg/piece
Approvals	CE
Standards	EN 60950-1, EN 61131-1, 2, EN 60898, EN 60947-4-1, EN 50081

Accessories	**Color**	**Part-No.**	**Type**	**PU**
Labelling sign 4x11 mm	white	681313	BZT-0411	100
Insulation plate		760809	TP 7-0809 MIC/SNR	10
Laser label A4 not punched		681031	LEB A4 PW	1

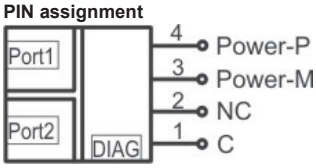
* **S** Article on stock
A Article available at short notice
R Article on request

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

Dimensions

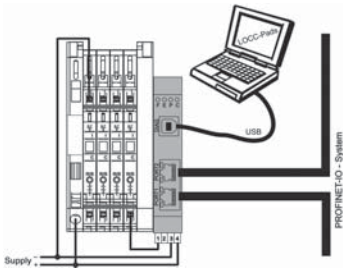


PIN assignment



Description		Part-No.		Type	PU
Spring terminal					
Rated voltage	DC 12/24 V	716457	**S***	LOCC-Box-GWPN 0-6457	1
Input					
Bus system	LOCCbus, basic LIN				
Access method	Single-Master - Multiple Slave				
Bus technology	Line				
Physical level	1-wire				
Participants	typ. 40, max. 100				
Bus length	Max. 40 m				
Transfer rate	9600 Baud				
Data rate	8 Bit + fixed parity (Bit 9)				
Transfer protocol	Modified multi-drop				
Output					
Bus system	USB 2.0 Full-Speed, PROFINET-IO				
Transfer rate	USB: 12 Mbit/s PROFINET-IO: 100 bit/s (IEE 802.3)				
Interface	USB: USB connector, Type B PROFINET-IO: Port_1, Port_2, 2 × RJ45 female connector with galvanic isolation and LEDs				
General					
Rated voltage	DC 12/24 V				
Operation voltage range	10-32 V				
Rated current	120 mA @ 24 V				
Reverse voltage protection	Yes				
Status indication	LED F, yellow - flashing: identification request (PROFINET) LED E, red - shining: no connection (PROFINET) LED P, green - on: operating voltage is supplied (POWER) LED C, green - flashing: data traffic with LOCC-Box-Net modules (LOCCbus) Link: yellow - 100Base/T-connection Activity green - valid connection, Blanking: data traffic				
Insulation voltage	1.5 kV				
Housing material	PA 6.6 (UL 94 V-0)				
Mounting	DIN rail mountable TS35 (EN 60715)				
Protection class	IP20				
Installation position	any				
Connection device	Spring terminal 0.14 mm^2 – 2.5 mm^2 (with ferrule 1.5 mm^2)				
Relative air humidity	max. 90 % not condensing				
Operation temperature range	-20 °C … +60 °C				
Storage temperature range	-40 °C … +85 °C				
Dimensions (w × h × d)	22.5 × 99.0 × 114.5 mm				
Weight	0.130 kg/piece				
Approvals	CE				
Standards	EN 60950-1, EN 61131-1, 2, EN 60898, EN 60947-4-1, EN 50081				
Comments Screw terminal on request					

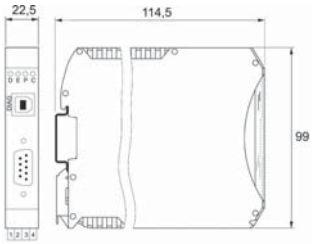
Use



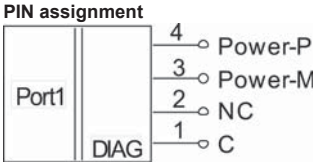
* **S** Article on stock
A Article available at short notice
R Article on request

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

Dimensions

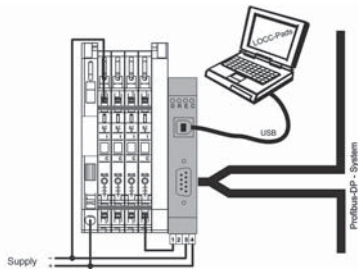


PIN assignment



Description		Part-No.		Type	PU
Spring terminal					
Rated voltage	DC 12/24 V	716458	**R***	LOCC-Box-GWPB 0-6458	1
Input					
Bus system	LOCCbus, basic LIN				
Access method	Single-Master - Multiple Slave				
Bus technology	Line				
Physical level	1-wire				
Participants	typ. 40, max. 84				
Bus length	Max. 40 m				
Transfer rate	9600 Baud				
Data rate	8 Bit + fixed parity (Bit 9)				
Transfer protocol	Modified multi-drop				
Output					
Bus system	USB 2.0 Full-Speed, PROFIBUS-DP				
Transfer rate	USB: 12 Mbit/s PROFIBUS-DP: max. 12 Mbit/s				
Interface	USB: USB connector, Type B PROFIBUS-DP: Port_1, SUB-D 9-pin with galvanic isolation				
General					
Rated voltage	DC 12/24 V				
Operation voltage range	10-32 V				
Rated current	120 mA @ 24 V				
Reverse voltage protection	Yes				
Status indication	LED D, green - shines: data exchange via PROFIBUS-DP LED E, red - different flash codes for diagnosis of PROFIBUS-DP faults LED P, green - on: operating voltage is supplied (POWER) LED C, green - flashing: data traffic with LOCC-Box-Net modules (LOCCbus)				
Insulation voltage	1.5 kV				
Housing material	PA 6.6 (UL 94 V-0)				
Mounting	DIN rail mountable TS35 (EN 60715)				
Protection class	IP20				
Installation position	any				
Connection device	Spring terminal 0.14 mm^2 – 2.5 mm^2 (with ferrule 1.5 mm^2)				
Relative air humidity	max. 90 % not condensing				
Operation temperature range	-20 °C … +60 °C				
Storage temperature range	-40 °C … +85 °C				
Dimensions (w × h × d)	22.5 × 99.0 × 114.5 mm				
Weight	0.130 kg/piece				
Approvals	CE				
Standards	EN 60950-1, EN 61131-1, EN 61131-2, EN 60898, EN 60947-4-1, EN 50081				
Comments Screw terminal on request					

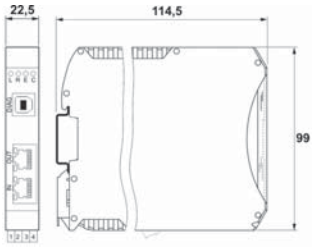
Use



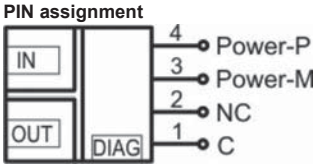
* **S** Article on stock
A Article available at short notice
R Article on request

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

Dimensions

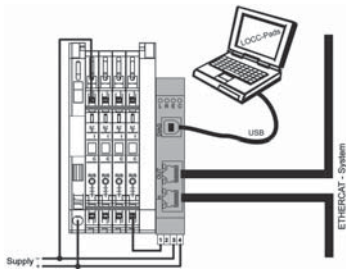


PIN assignment



Description		Part-No.		Type	PU
Spring terminal					
Rated voltage	DC 12/24 V	716456	**A***	LOCC-Box-GWEC 0-6456	1
Input					
Bus system	LOCCbus, basic LIN				
Access method	Single-Master - Multiple Slave				
Bus technology	Line				
Physical level	1-wire				
Participants	typ. 40, max. 64				
Bus length	Max. 40 m				
Transfer rate	9600 Baud				
Data rate	8 Bit + fixed parity (Bit 9)				
Transfer protocol	Modified multi-drop				
Output					
Bus system	USB 2.0 Full-Speed, EtherCAT				
Transfer rate	USB: 12 Mbit/s EtherCAT: 100 bit/s (IEE 802.3)				
Interface	USB: USB connector, Type B EtherCAT: IN, OUT, 2 × RJ45 female connector with galvanic isolation and LEDs				
General					
Rated voltage	DC 12/24 V				
Operation voltage range	10-32 V				
Rated current	55 mA @ 24 V				
Reverse voltage protection	Yes				
Status indication	LED L, red - flashing: EEPROM Error, EEPROM not charged LED R, green - shining: ECT Run LED E, green - shining: ECT Error LED C, green - flashing: data traffic with LOCC-Box-Net modules (LOCCbus) Link/Activity: green - 100Base/T-connection, flashes when there is EtherCAT-traffic Connect: yellow - Speed-LED, 100Base/T-connection				
Insulation voltage	1.5 kV				
Housing material	PA 6.6 (UL 94 V-0)				
Mounting	DIN rail mountable TS35 (EN 60715)				
Protection class	IP20				
Installation position	any				
Connection device	Spring terminal 0.14 mm^2 – 2.5 mm^2 (with ferrule 1.5 mm^2)				
Relative air humidity	max. 90 % not condensing				
Operation temperature range	-20 °C … +60 °C				
Storage temperature range	-40 °C … +85 °C				
Dimensions (w × h × d)	22.5 × 99.0 × 114.5 mm				
Weight	0.130 kg/piece				
Approvals	CE				
Standards	EN 60950-1, EN 61131-1, EN 61131-2, EN 60898, EN 60947-4-1, EN 50081				
Comments Screw terminal on request					

Use



* **S** Article on stock
A Article available at short notice
R Article on request

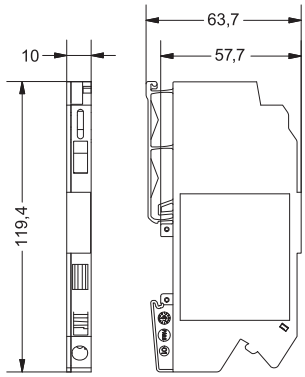
LOCC-Box supply set
consisting of supply terminal and end block
maximum total current 40 A

Description		Part-No.	Type	PU
Rated voltage U_N	DC 12/24 V	716425 **S***	LOCC-Box-ES 7-6425	1

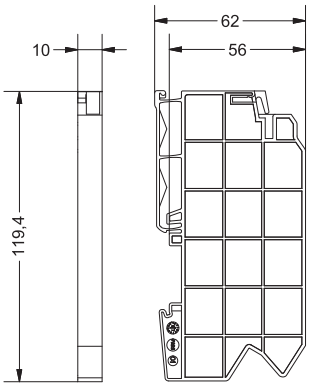
Input	**LOCC-Box-ES 7-6425**
Rated voltage U_N	DC 12/24 V
Rated current I_N	max. DC 40 A
Reverse voltage protection	No
Connection type input	Spring terminal 0.33 mm^2 – 10.0 mm^2 AWG 22 – AWG 8
Conductor connection cross section	single-wire: max. 10 mm^2 finely stranded: max 6 mm^2 finely stranded with AEH: max 6 mm^2
Strip length	12 mm
Output	
Rated voltage U_N	DC 5 V/9 V
Output current	max. DC 40 A
Connection type output	screwless contact slide
Copper bus bar	3 × 10mm
General	
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	DIN rail mountable TS35 (EN 60715)
Protection class	IP20
Installation position	any
Operation temperature range	-25 °C … +60 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	10.0 × 119.4 × 63.7 mm
Weight	0.035 kg/piece
Approvals	cULus (E135145)
Standards	–

Dimensions

Supply terminal



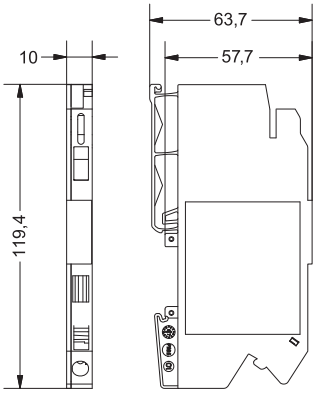
End block



* **S** Article on stock
A Article available at short notice
R Article on request

LOCC-Box supply terminal
maximum total current 40 A

Dimensions



Description		Part-No.		Type	PU
Rated voltage U_N	DC 12/24 V	716435	**S***	LOCC-Box-EKL 7-6435	2

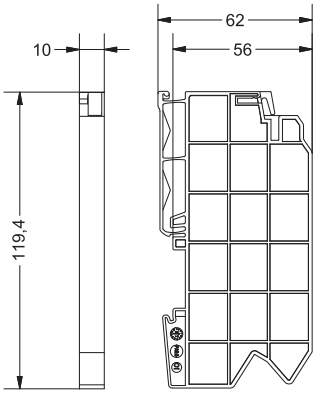
Input	**LOCC-Box-EKL 7-6435**
Rated voltage U_N	DC 12/24 V
Rated current I_N	max. DC 40 A
Reverse voltage protection	No
Connection type input	Spring terminal 0.33 mm^2 – 10.0 mm^2 AWG 22 – AWG 8
Conductor connection cross section	single-wire: max. 10 mm^2 finely stranded: max 6 mm^2 finely stranded with AEH: max 6 mm^2
Strip length	12 mm
Output	
Rated voltage U_N	DC 12/24 V
Output current	max. DC 40 A
Connection type output	screwless contact slide
Copper bus bar	3 × 10mm
General	
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	DIN rail mountable TS35 (EN 60715)
Protection class	IP20
Installation position	any
Operation temperature range	-25 °C … +60 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	10.0 × 119.4 × 63.7 mm
Weight	0.035 kg/piece
Approvals	cULus (E135145)
Standards	–

* **S** Article on stock
A Article available at short notice
R Article on request

LOCC-Box end block

Description	Part-No.	Type	PU
Rated voltage U_N	716436 **S***	LOCC-Box-EB 7-6436	2
General			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)		
Mounting	DIN rail mountable TS35 (EN 60715)		
Protection class	IP20		
Installation position	any		
Operation temperature range	-25 °C … +60 °C		
Storage temperature range	-40 °C … +85 °C		
Dimensions (w × h × d)	10.0 × 119.4 × 62.0 mm		
Weight	0.010 kg/piece		
Approvals	cULus (E135145)		
Standards	–		

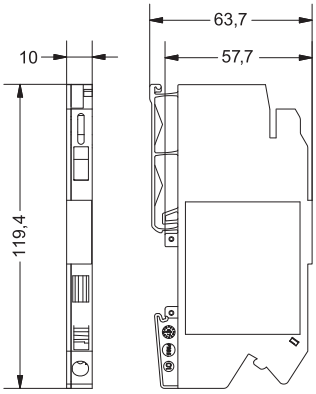
Dimensions
End block



* **S** Article on stock
A Article available at short notice
R Article on request

LOCC-Box supply terminal
Additional supply terminal for increased current
maximum total current 40 A

Dimensions



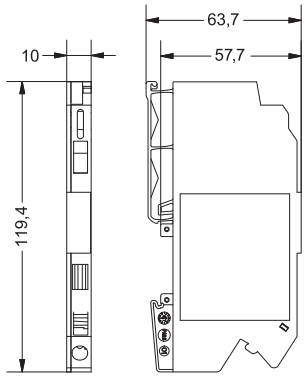
Description	Part-No.		Type	PU
Rated voltage U_N	716421	**S***	LOCC-Box-EKL 7-6421	2
Input	**LOCC-Box-EKL 7-6421**			
Rated voltage U_N	–			
Rated current I_N	max. DC 40 A			
Reverse voltage protection	No			
Connection type input	Spring terminal 0.33 mm^2 – 10.0 mm^2 AWG 22 – AWG 8			
Conductor connection cross section	single-wire: max. 10 mm^2 finely stranded: max 6 mm^2 finely stranded with AEH: max 6 mm^2			
Strip length	12 mm			
Output				
Rated voltage U_N	DC 12/24 V			
Output current	max. DC 40 A			
Connection type output	screwless contact slide			
Copper bus bar	3 × 10mm			
General				
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)			
Mounting	DIN rail mountable TS35 (EN 60715)			
Protection class	IP20			
Installation position	any			
Operation temperature range	-25 °C … +60 °C			
Storage temperature range	-40 °C … +85 °C			
Dimensions (w × h × d)	10.0 × 119.4 × 63.7 mm			
Weight	0.035 kg/piece			
Approvals	cULus (E135145)			
Standards	–			

* **S** Article on stock
A Article available at short notice
R Article on request

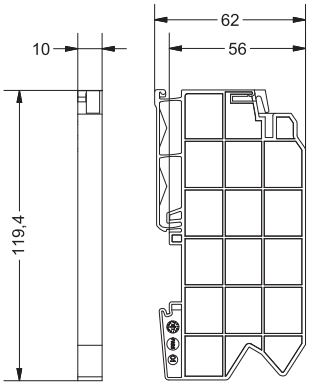
LOCC-Box supply set 16 mm² consisting of supply terminal and end block maximum total current 40 A

Dimensions

Supply terminal



End block



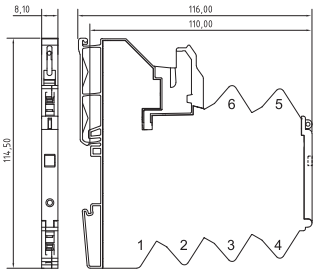
Description		Part-No.	Type	PU
Rated voltage U_N	DC 12/24 V	716447 **S***	LOCC-Box-ES16 7-6447	1

Input	**LOCC-Box-ES16 7-6447**
Rated voltage U_N	DC 12/24 V
Rated current I_N	max. DC 40 A
Reverse voltage protection	No
Connection type input	Spring terminal 0.33 mm² – 16.0 mm² AWG 22 – AWG 6
Conductor connection cross section	single-wire: max. 16 mm² finely stranded: max 10 mm² finely stranded with AEH: max 10 mm²
Strip length	12 mm
Output	
Rated voltage U_N	DC 12/24 V
Output current	max. DC 40 A
Connection type output	screwless contact slide
Copper bus bar	3 × 10mm
General	
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	DIN rail mountable TS35 (EN 60715)
Protection class	IP20
Installation position	any
Operation temperature range	-25 °C … +60 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	10.0 × 119.4 × 63.7 mm
Weight	0.045 kg/piece
Approvals	cULus (E135145)
Standards	–

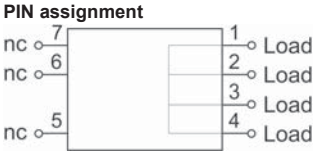
* **S** Article on stock
A Article available at short notice
R Article on request

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

Dimensions



PIN assignment



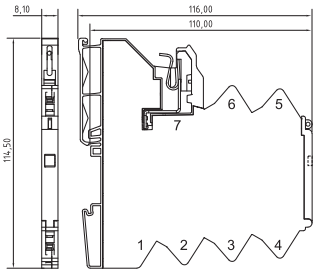
Description		Part-No.		Type	PU
Rated voltage U_N	DC 12/24 V	716448	**S***	LOCC-Box-VKL 7-6448	1

Input	**LOCC-Box-VKL 7-6448**
Rated voltage U_N	DC 12/24 V
Rated current I_N	max. DC 10 A
Reverse voltage protection	No
Connection type input	Spring terminal 0.25 mm^2 – 2.5 mm^2
Connection	1 – 4
General	
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	DIN rail mountable TS35 (EN 60715)
Protection class	IP20
Installation position	any
Operation temperature range	-25 °C … +60 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 × 114.5 × 116.0 mm
Weight	0.700 kg/piece
Approvals	CE
Standards	–

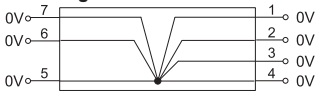
* **S** Article on stock
A Article available at short notice
R Article on request

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

Dimensions



PIN assignment



Description		Part-No.		Type	PU
Rated voltage U_N	DC 12/24 V	716420	**S***	LOCC-Box-SK 7-6420	2

Input	**LOCC-Box-SK 7-6420**
Rated voltage U_N	DC 12/24 V
Rated current I_N	6 × max. DC 10 A
Reverse voltage protection	No
Connection type input	Spring terminal 0.25 mm^2 – 2.5 mm^2
Connection	1 – 6
Output	
Output current	max. DC 40 A
Voltage drop	–
Connection type output	screwless contact slide
Connection	7
General	
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	DIN rail mountable TS35 (EN 60715)
Protection class	IP20
Installation position	any
Operation temperature range	-25 °C … +60 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	8.1 × 114.5 × 116.0 mm
Weight	0.700 kg/piece
Approvals	CE
Standards	–

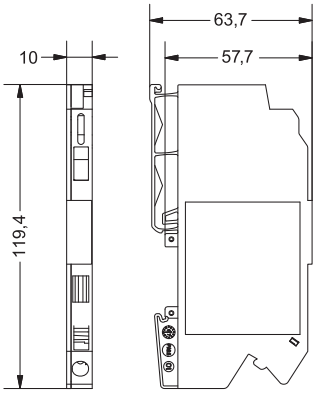
* **S** Article on stock
A Article available at short notice
R Article on request

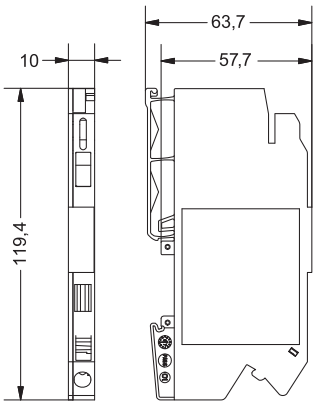
LOCC-Box supply terminal
LOCC-Box supply terminal for power distribution
maximum total current 40 A

Description		Part-No.	Type	PU
Rated voltage U_N	DC 12/24 V	716437 **S***	LOCC-Box-ES 7-6437	1

Input	**LOCC-Box-ES 7-6437**
Rated voltage U_N	DC 12/24 V
Rated current I_N	max. DC 40 A
Reverse voltage protection	No
Connection type input	Spring terminal 0.33 mm^2 – 10.0 mm^2 AWG 22 – AWG 8
Conductor connection cross section	single-wire: max. 10 mm^2 finely stranded: max 6 mm^2 finely stranded with AEH: max 6 mm^2
Strip length	12 mm
Output	
Rated voltage U_N	DC 12/24 V
Output current	max. DC 40 A
Connection type output	screwless contact slide
Copper bus bar	3 × 10mm
General	
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Mounting	DIN rail mountable TS35 (EN 60715)
Protection class	IP20
Installation position	any
Operation temperature range	-25 °C … +60 °C
Storage temperature range	-40 °C … +85 °C
Dimensions (w × h × d)	10.0 × 119.4 × 63.7 mm
Weight	0.035 kg/piece
Approvals	cULus (E135145)
Standards	–

Dimensions
Supply terminal





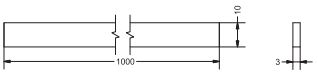
* **S** Article on stock
A Article available at short notice
R Article on request

Copper bus bar, tin-plated
Length 1 m
10 × 3mm

Description	Part-No.		Type	PU
Copper bus bar				
Color	716426	**S***	LOCC-Box-CU 7-6426	1

General	**716426**
Color	–
Design	Rod 1 m
Material	Cu, tin-plated surface
Operation temperature range	-40 °C … +80 °C
Storage temperature range	-40 °C … +80 °C
Weight	0.265 kg/piece
Dimensions	10 × 3 × 1000 mm

Dimensions



* **S** Article on stock
A Article available at short notice
R Article on request

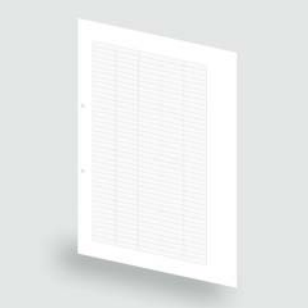
Cover, copper rail
Length 1 m

Description	Part-No.		Type	PU
Cover, copper rail				
Color	716427	**R***	LOCC-Box-AD 7-6427	1

General	**716427**
Color	–
Design	Rod 1 m
Material	–
Operation temperature range	-40 °C … +80 °C
Storage temperature range	-40 °C … +80 °C
Weight	0,1 kg/piece
Dimensions	10 × 3 × 1000 mm

* **S** Article on stock
A Article available at short notice
R Article on request

Labelling system
Labelling sheets
240 labels



Description		Part-No.		Type	PU
Labelling sheets					
Color	white	716445	**R***	LOCC-Box-LEB 7-6445	10

General	**716445**
Color	white
Design	DIN A 4 sheets with 240 single labels
Material	Paper
Operation temperature range	-40 °C … +80 °C
Storage temperature range	-40 °C … +80 °C
Weight	0.040 kg/piece
Dimensions	219 × 297 mm

* **S** Article on stock
A Article available at short notice
R Article on request

Labelling system
Tag holder 39.3×5 mm
single signs

Description		Part-No.		Type	PU
Tag holder					
Color	white	716443	**R***	LOCC-Box-BZT 7-6443	20
	transparent	716444	**R***	LOCC-Box-BAD 7-6444	20

General	**716443**	**716444**
Color	white	transparent
Design	Tag holder	Cover for tag holder
Material	PA 6.6 (UL 94 V2)	
Operation temperature range	-40 °C … +80 °C	
Storage temperature range	-40 °C … +80 °C	
Weight	0,001 kg/piece	
Dimensions	39,3 × 5 mm	

* **S** Article on stock
A Article available at short notice
R Article on request

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

Description		Part-No.		Type	PU
Labelling plates					
Color	white	716441	**R***	LOCC-Box-BZW 7-6441	1

General	**716441**
Color	white
Design	Frame with 12 strips à 10 signs
Material	PA 6.6 (UL 94 V0, NNF I2, F2)
Operation temperature range	-40 °C … +80 °C
Storage temperature range	-40 °C … +80 °C
Weight	0,01 kg/piece
Dimensions	12 × 6 mm

* **S** Article on stock
A Article available at short notice
R Article on request

Labelling system
Labelling plates 5 × 5 mm
20 strips à 10 signs

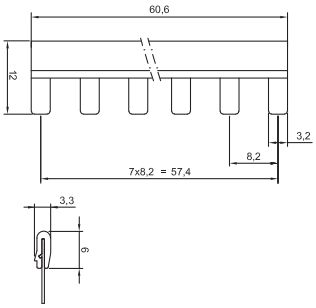
Description		Part-No.		Type	PU
Labelling plates					
Color	white	716431	**S***	LOCC-Box-BZW 7-6431	1
	red	716432	**S***	LOCC-Box-BZR 7-6432	1
	blue	716433	**S***	LOCC-Box-BZB 7-6433	1
	yellow	716434	**A***	LOCC-Box-BZG 7-6434	1

General	**716431**	**716432**	**716433**	**716434**
Color	white	red	blue	yellow
Design	Frame with 20 strips à 10 signs			
Material	PA 6.6 (UL 94 V0, NNF I2, F2)			
Operation temperature range	-40 °C … +80 °C			
Storage temperature range	-40 °C … +80 °C			
Weight	0,01 kg/piece			
Dimensions	5 × 5 mm			

* **S** Article on stock
A Article available at short notice
R Article on request

Insulated jumper combs
8-pin

Dimensions



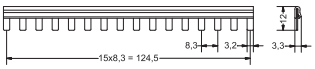
Description		Part-No.		Type	PU
Jumper comb 8-pin					
Color	white	716428	**S***	LOCC-Box-BKW 7-6428	5
	red	716429	**S***	LOCC-Box-BKR 7-6429	5
	blue	716430	**S***	LOCC-Box-BKB 7-6430	5

General	**716428**	**716429**	**716430**
Pole number		8	
Connection device		plug-in	
Rated current		DC 6 A	
Contact design		Flat contact 0.5 mm	
Pin spacing		8.2 mm	
Contact material		FeZn	
Material		PVC hard	
Color	white	red	blue
Flamability according to UL 94		V0	
Operation temperature range		-40 °C … +80 °C	
Storage temperature range		-40 °C … +80 °C	
Weight		0.003 kg/piece	

* **S** Article on stock
A Article available at short notice
R Article on request

Insulated jumper combs
16-pin

Dimensions



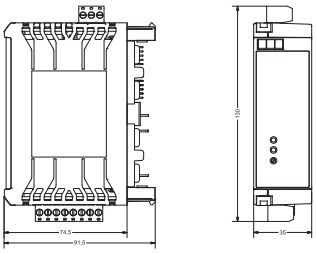
Description		Part-No.		Type	PU
Jumper comb 12-pin					
Color	white	716438	**S***	LOCC-Box-BKW 7-6438	5
	red	716439	**S***	LOCC-Box-BKR 7-6439	5
	blue	716440	**S***	LOCC-Box-BKB 7-6440	5

General	**716438**	**716439**	**716440**
Pole number		16	
Connection device		plug-in	
Rated current		DC 6 A	
Contact design		Flat contact 0.5 mm	
Pin spacing		8.2 mm	
Length		– mm	
Contact material		FeZn	
Material		PVC hard	
Color	white	red	blue
Flamability according to UL 94		V0	
Operation temperature range		-40 °C … +80 °C	
Storage temperature range		-40 °C … +80 °C	
Weight		0.006 kg/piece	

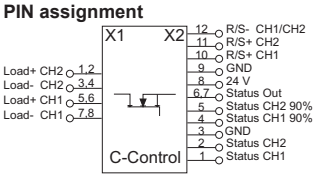
* **S** Article on stock
A Article available at short notice
R Article on request

Electronic load monitoring up to DC 10 A
2-channel version, single pole switching, DC 1 A – DC 10 A, characteristic can be set
Collective fault message: single/collective/90% message, Remote Control input

Dimensions



PIN assignment

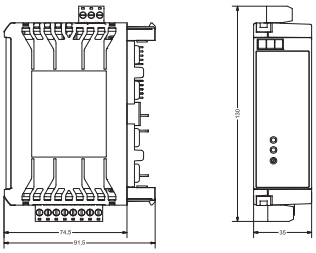


Description		Part-No.		Type	PU
Screw terminal					
Rated voltage U_N	DC 24 V	779000.2111	**A***	LCOS-CC-2K-1P DC 24V	1
Push-In					
Rated voltage U_N	DC 24 V	779100.2111	**S***	LCOS-CC-2K-1P DC 24V	1
Note					
Included in the delivery	Plug-in terminals : CS 5.08 and CS 3.50				
Not included in the delivery	Function carrier and other accessories				
Input					
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 32 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				
Isolation voltage	1 kV, 50 Hz, 1 min.				
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 flashing: triggered, red: OFF				
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				
Signal output					
Switching element	Transistor, open collector with pull-up resistor				
Single channel message	(Status CH1, CH2) Acc. to IEC 61131-2: High level, no errors, low level, there are errors				
90 % of the rated current I_B	(Status 90 % CH1, CH2) Acc. to IEC 61131-2: High level <90 %, low level >90 %				
Insulation voltage	–				
centralised fault signalling	(Status Out) Single channel message 1+2, decoupled via diodes				
General					
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)				
Protection class	IP20				
Installation position	any				
Vibration resistance	Vibration: EN 60068-2-6 Fc, shock: EN 60068-2-27 Ea				
Climatic conditions	Acc. to EN 60721 Stationary use at weather protected locations				
Connection type load side	X1: 8-pin multi-point plug, RM 5.08				
Connection type control side	X2: 12-pin multi-point plug, RM 3.5				
Connection device	single wire 0.08 mm^2–1.5 mm^2 / AWG 28–16				
Strip length	RM 3.5: 9 mm, RM 5.08: 10 mm				
Operation temperature range	0 °C … +55 °C				
Storage temperature range	-40 °C … +70 °C				
Dimensions (w × h × d)	22.5 × 110.0 × 102.0 mm (including function carrier, without plug-in terminals on the side)				
Weight	0.200 kg/piece				
Approvals	cULus (E170585), CE, UL 61010, UL 2367, GL in preparation				
Standards	EN 61131-2, EN 55016-1-2, EN 60529, EN 61000-6-2/4				

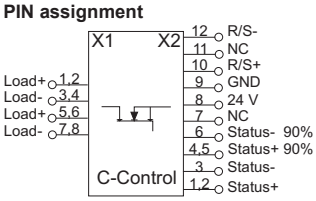
* **S** Article on stock
A Article available at short notice
R Article on request

Electronic load monitoring up to DC 10 A
1-channel version, two-pole switching, DC 1 A – DC 10 A can be set, characteristic can be set
Collective fault message: single/collective/90% message, Remote Control input per channel

Dimensions



PIN assignment

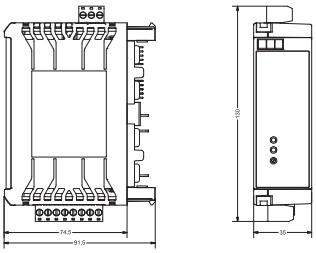


Description		Part-No.		Type	PU
Screw terminal					
Rated voltage U_N	DC 24 V	779000.1211	**A***	LCOS-CC-1K-2P DC 24V	1
Push-In					
Rated voltage U_N	DC 24 V	779100.1211	**S***	LCOS-CC-1K-2P DC 24V	1
Note					
Included in the delivery	Plug-in terminals : CS 5.08 and CS 3.50				
Not included in the delivery	Function carrier and other accessories				
Input					
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 32 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				
Isolation voltage	1.5 kV				
Output					
Switching element	MosFet and relay (galvanic separation both poles: 500 V)				
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 flashing: triggered, red: OFF				
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	One relay with 1 S per signal type				
Single channel message	(Status CH1, CH2) 1 N/O contact, AC/DC 125 V, 1 A Relay closed: error Relay open: no error				
90 % of the rated current I_B	(Status 90 % CH1, CH2) 1 N/O contact, AC/DC 125 V, 1 A Relay closed: >90 %, Relay open: <90 %				
Insulation voltage	1.5 kV, 50 Hz, 1 min.				
centralised fault signalling	–				
General					
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)				
Protection class	IP20				
Installation position	any				
Vibration resistance	Vibration: EN 60068-2-6 Fc, shock: EN 60068-2-27 Ea				
Climatic conditions	Acc. to EN 60721 Stationary use at weather protected locations				
Connection type load side	X1: 8-pin multi-point plug, RM 5.08				
Connection type control side	X2: 12-pin multi-point plug, RM 3.5				
Connection device	single wire 0.08 mm^2–1.5 mm^2 / AWG 28–16				
Strip length	RM 3.5: 9 mm, RM 5.08: 10 mm				
Operation temperature range	0 °C … +55 °C				
Storage temperature range	-40 °C … +70 °C				
Dimensions (w × h × d)	22.5 × 110.0 × 102.0 mm (including function carrier, without plug-in terminals on the side)				
Weight	0.200 kg/piece				
Approvals	cULus (E170585), CE, UL 61010, UL 2367, GL in preparation				
Standards	EN 61131-2, EN 55016-1-2, EN 60529, EN 61000-6-2/4				

* **S** Article on stock
A Article available at short notice
R Article on request

Electronic load monitoring up to DC 10 A
1-channel version, single pole switching, DC 1 A – DC 10 A, characteristic can be set
Collective fault message: single/90% message, Remote Control input

Dimensions

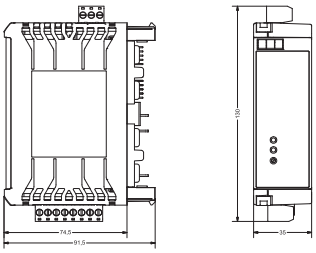


Description		Part-No.		Type	PU
Screw terminal					
Rated voltage U_N	DC 24 V	779000.1111	**A***	LCOS-CC-1K-1P-DC24V	1
Push-In					
Rated voltage U_N	DC 24 V	779100.1111	**S***	LCOS-CC-1K-1P-DC24V	1
Input					
Type of function	1-channel 1 pin switching				
Technology	Powerbus and terminal strip				
Rated voltage U_N	DC 24 V				
Operation voltage range	DC 20.4–28.8 V				
Supply current	DC 32 A via LCOS Powerbus				
Reverse voltage protection	internal electronics				
Connection type input	–				
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				
Isolation voltage	AC 1.5 kV, 1 min.				
Output					
Switching element	MosFet				
Output current	max. DC 10 A				
Voltage drop	<170 mV (10 A)				
Status display output	**Output 1:** LED green: no error, LED green flashing: 90 % utilisation **Output 2:** LED red flashing: triggered, LED red: unit off				
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				
Signal output					
Switching element	2 x transistor, open collector with pull-up resistor				
Single channel message	–				
Signal level	Overload, short circuit, switched off: Low, rated operation: High I ≥ 90 % I_N, Low I ≤ 90 % I_N				
centralised fault signalling	Diagnostic output 1 + 2 connected via diodes				
General					
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)				
Colour of the housing	RAL 7012 basalt grey				
Mounting	plug-in on LCOS function carrier 22.5 mm (Accessories) DIN rail mounting (EN 60715)				
Protection class	IP20				
Installation position	vertical				
Climatic conditions	–				
Connection type load side	X1: 8-pin multi-point plug, RM 5.08				
Connection type control side	X2: 12-pin multi-point plug, RM 3.5				
MTBF	690000 h @ 40 °C, 100 operations button, 30 revolutions coding switch				
Operation temperature range	-25 °C … +55 °C				
Storage temperature range	-40 °C … +70 °C				
Dimensions (w × h × d)	22.5 × 110.0 × 102.0 mm (including function carrier, without plug-in terminals on the side)				
Weight	0.200 kg/piece				
Approvals	cULus (E170585), GL				
Standards	EN 60950-1, EN 61131-1, 2, EN 61000, EN 60947-4-1, EN 55022				

* **S** Article on stock
A Article available at short notice
R Article on request

Electronic load monitoring up to DC 16 A
1-channel version, single pole switching, DC 2 A – DC 16 A, characteristic can be set
Collective fault message: single/90% message, Remote Control input

Dimensions

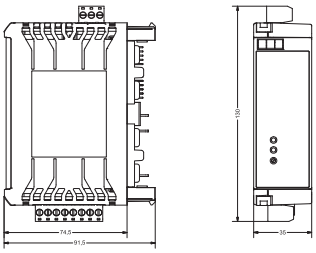


Description		Part-No.		Type	PU
Screw terminal					
Rated voltage U_N	DC 24 V	779000.1121	**A***	LCOS-CC-1K-1P16-DC24V	1
Push-In					
Rated voltage U_N	DC 24 V	779100.1121	**S***	LCOS-CC-1K-1P16-DC24V	1
Input					
Type of function	1-channel 1 pin switching				
Technology	Powerbus and terminal strip				
Rated voltage U_N	DC 24 V				
Operation voltage range	DC 20.4–28.8 V				
Supply current	DC 32 A via LCOS Powerbus				
Reverse voltage protection	internal electronics				
Connection type input	–				
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				
Isolation voltage	AC 1.5 kV, 1 min.				
Output					
Switching element	MosFet				
Output current	max. DC 16 A				
Voltage drop	<170 mV (10 A)				
Status display output	**Output 1:** LED green: no error, LED green flashing: 90 % utilisation **Output 2:** LED red flashing: triggered, LED red: unit off				
Switch-on capacity	>10000 µF				
Current range	2 A – 16 A (can be set via switch in 2 A steps)				
Characteristic	fast (1), medium (2), slow 1 (3), slow 2 (4), slow 3 (5), adjustable via switch				
Signal output					
Switching element	–				
Single channel message	–				
Signal level	–				
centralised fault signalling	–				
General					
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)				
Colour of the housing	RAL 7012 basalt grey				
Mounting	plug-in on LCOS function carrier 22.5 mm (Accessories) DIN rail mounting (EN 60715)				
Protection class	IP20				
Installation position	vertical				
Climatic conditions	–				
Connection type load side	X1: 8-pin multi-point plug, RM 5.08				
Connection type control side	X2: 12-pin multi-point plug, RM 3.5				
MTBF	690000 h @ 40 °C, 100 operations button, 30 revolutions coding switch				
Operation temperature range	-25 °C … +55 °C				
Storage temperature range	-40 °C … +70 °C				
Dimensions (w × h × d)	22.5 × 110.0 × 102.0 mm (including function carrier, without plug-in terminals on the side)				
Weight	0.200 kg/piece				
Approvals	cULus (E170585), GL				
Standards	EN 60950-1, EN 61131-1, 2, EN 61000, EN 60947-4-1, EN 55022				

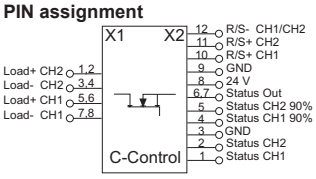
* **S** Article on stock
A Article available at short notice
R Article on request

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, characteristic can be set
Collective fault message: single/collective/90% message, Remote Control input

Dimensions



PIN assignment



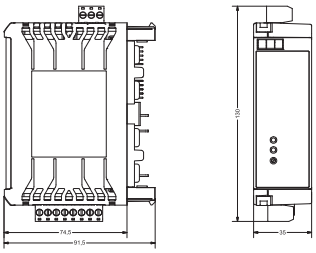
Description		Part-No.		Type	PU
Screw terminal					
Rated voltage U_N	DC 24 V	773000.2111	**A***	LCOS-CCI-2K-1P-DC24V	1
Push-In					
Rated voltage U_N	DC 24 V	773100.2111	**S***	LCOS-CCI-2K-1P-DC24V	1
Note					
Included in the delivery	Plug-in terminals : CS 5.08 and CS 3.50				
Not included in the delivery	Function carrier and other accessories				
Input					
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 32 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				
Isolation voltage	2.5 kV, 50 Hz, 1 min.				
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 flashing: triggered, red: OFF				
Switch-on capacity	>10000 µF				
Current range	1 A – 10 A (adjustable via switch in 1 A steps)				
Characteristic	fast (1), middle (2), slow 1 (3), slow 2 (4), slow 3 (5), adjustable via switch or software				
Signal output					
Switching element	Transistor, open collector with pull-up resistor				
Single channel message	(Status CH1, CH2) Acc. to IEC 61131-2: High level, no errors, low level, there are errors				
90 % of the rated current I_B	(Status 90 % CH1, CH2) Acc. to IEC 61131-2: High level <90 %, low level >90 %				
Insulation voltage	–				
centralised fault signalling	(Status Out) Single channel message 1+2, decoupled via diodes				
Communication internal					
Communication	internal data bus				
BUS physics	CANopen acc. to ISO 11898-1				
General					
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)				
Protection class	IP20				
Installation position	any				
Vibration resistance	Vibration: EN 60068-2-6 Fc, shock: EN 60068-2-27 Ea				
Climatic conditions	Acc. to EN 60721 Stationary use at weather protected locations				
Connection type load side	X1: 8-pin multi-point plug, RM 5.08				
Connection type control side	X2: 12-pin multi-point plug, RM 3.5				
Operation temperature range	0 °C … +55 °C				
Storage temperature range	-40 °C … +70 °C				
Dimensions (w × h × d)	22.5 × 110.0 × 102.0 mm (including function carrier, without plug-in terminals on the side)				
Weight	0.200 kg/piece				
Approvals	UL, CE, UL 61010, UL 2367				
Standards	EN 61131-2, EN 55016-1-2, EN 60529				

* **S** Article on stock
A Article available at short notice
R Article on request

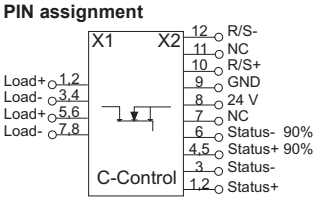
Load monitoring · LCOS-CCI

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 can be set, characteristic can be set
Collective fault message: single/collective/90% message, Remote Control input per channel

Dimensions



PIN assignment

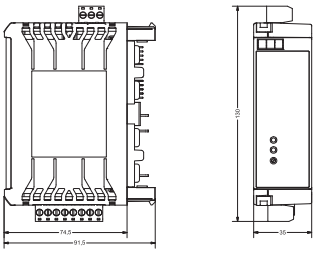


Description		Part-No.		Type	PU
Screw terminal					
Rated voltage U_N	DC 24 V	773000.1211	**A***	LCOS-CCI-1K-2P-DC24V	1
Push-In					
Rated voltage U_N	DC 24 V	773100.1211	**S***	LCOS-CCI-1K-2P-DC24V	1
Note					
Included in the delivery	Plug-in terminals : CS 5.08 and CS 3.50				
Not included in the delivery	Function carrier and other accessories				
Input					
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 32 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				
Isolation voltage	2.5 kV, 50 Hz, 1 min.				
Output					
Switching element	MosFet and relay (galvanic separation both poles: 500 V)				
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 flashing: triggered, red: OFF				
Switch-on capacity	>10000 µF				
Current range	1 A – 10 A (adjustable via switch in 1 A steps)				
Characteristic	fast (1), middle (2), slow 1 (3), slow 2 (4), slow 3 (5), adjustable via switch, see 'characteristic curves' or software				
Signal output					
Switching element	One relay with 1 S per signal type				
Single channel message	(Status CH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A Relay closed: error Relay open: no error				
90 % of the rated current I_B	(Status 90 % CH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A Relay closed: >90 %, Relay open: <90 %				
Insulation voltage	2.5 kV, 50 Hz, 1 min.				
centralised fault signalling	–				
Communication internal					
Communication	internal data bus				
BUS physics	CANopen acc. to ISO 11898-1				
General					
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)				
Protection class	IP20				
Installation position	any				
Vibration resistance	Vibration: EN 60068-2-6 Fc, shock: EN 60068-2-27 Ea				
Climatic conditions	Acc. to EN 60721 Stationary use at weather protected locations				
Connection type load side	X1: 8-pin multi-point plug, RM 5.08				
Connection type control side	X2: 12-pin multi-point plug, RM 3.5				
Operation temperature range	0 °C … +55 °C				
Storage temperature range	-40 °C … +70 °C				
Dimensions (w × h × d)	22.5 × 110.0 × 102.0 mm (including function carrier, without plug-in terminals on the side)				
Weight	0.200 kg/piece				
Approvals	UL, CE, UL 61010, UL 2367				
Standards	EN 61131-2, EN 55016-1-2, EN 60529				

* **S** Article on stock
A Article available at short notice
R Article on request

Electronic load monitoring up to DC 10 A
1-channel version, single pole switching, DC 1 A – DC 10 A, characteristic can be set
Collective fault message: single/90% message, Remote Control input

Dimensions

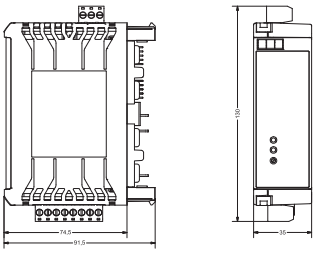


Description		Part-No.		Type	PU
Screw terminal					
Rated voltage U_N	DC 24 V	773000.1111	**A***	LCOS-CCI-1K-1P-DC24V	1
Push-In					
Rated voltage U_N	DC 24 V	773100.1111	**S***	LCOS-CCI-1K-1P-DC24V	1
Input					
Type of function	1-channel 1 pin switching				
Technology	Powerbus and terminal strip				
Rated voltage U_N	DC 24 V				
Operation voltage range	DC 20.4–28.8 V				
Rated current I_N	–				
Supply current	DC 32 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				
Isolation voltage	AC 1.5 kV, 1 min.				
Output					
Switching element	MosFet				
Output current	max. DC 10 A				
Voltage drop	<170 mV (10 A)				
Status display output	**Output 1:** LED green: no error, LED green flashing: 90 % utilisation **Output 2:** LED red flashing: triggered, LED red: unit off				
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				
Signal output					
Switching element	2 x transistor, open collector with pull-up resistor				
Single channel message	–				
Signal level	Overload, short circuit, switched off: Low, rated operation: High I ≥ 90 % I_N, Low I ≤ 90 % I_N				
centralised fault signalling	Diagnostic output 1 + 2 connected via diodes				
Communication internal					
Communication	internal data bus				
BUS physics	CANopen acc. to ISO 11898-1, 11898-2				
Participants	64 units				
BUS topology	Line				
Transfer rate	1 MBaud				
Bus length	Max. 25 m				
Galvanic isolation	500 V				
General					
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)				
Colour of the housing	RAL 7012 basalt grey				
Mounting	plug-in on LCOS function carrier 22.5 mm (Accessories) DIN rail mounting (EN 60715)				
Protection class	IP20				
Installation position	vertical				
Connection type load side	X1: 8-pin multi-point plug, RM 5.08				
Connection type control side	X2: 12-pin multi-point plug, RM 3.5				
MTBF	690000 h @ 40 °C, 100 operations button, 30 revolutions coding switch				
Operation temperature range	-25 °C … +55 °C				
Storage temperature range	-40 °C … +70 °C				
Dimensions (w × h × d)	22.5 × 110.0 × 102.0 mm (including function carrier, without plug-in terminals on the side)				
Weight	0.200 kg/piece				
Approvals	cULus, GL				
Standards	EN 60950-1, EN 61131-1, 2, EN 61000, EN 60947-4-1, EN 55022				

* **S** Article on stock
A Article available at short notice
R Article on request

Electronic load monitoring up to DC 16 A
1-channel version, single pole switching, DC 2 A – DC 16 A, characteristic can be set
Collective fault message: single/90% message, Remote Control input

Dimensions

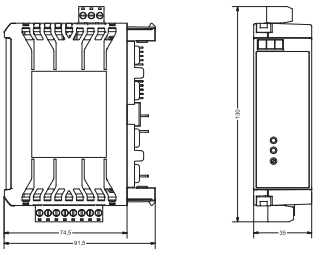


Description		Part-No.		Type	PU
Screw terminal					
Rated voltage U_N	DC 24 V	773000.1121	**A***	LCOS-CCI-1K-1P16-DC24V	1
Push-In					
Rated voltage U_N	DC 24 V	773100.1121	**S***	LCOS-CCI-1K-1P16-DC24V	1
Input					
Type of function	1-channel 1 pin switching				
Technology	Powerbus and terminal strip				
Rated voltage U_N	DC 24 V				
Operation voltage range	DC 20.4–28.8 V				
Rated current I_N	–				
Supply current	DC 32 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				
Isolation voltage	AC 1.5 kV, 1 min.				
Output					
Switching element	MosFet				
Output current	max. DC 16 A				
Voltage drop	<170 mV (10 A)				
Status display output	**Output 1:** LED green: no error, LED green flashing: 90 % utilisation **Output 2:** LED red flashing: triggered, LED red: unit off				
Switch-on capacity	>10000 µF				
Current range	2 A – 16 A (can be set via switch in 2 A steps)				
Characteristic	fast (1), medium (2), slow 1 (3), slow 2 (4), slow 3 (5), adjustable via switch				
Signal output					
Switching element	–				
Single channel message	–				
Signal level	–				
centralised fault signalling	–				
Communication internal					
Communication	internal data bus				
BUS physics	CANopen acc. to ISO 11898-1, 11898-2				
Participants	64 units				
BUS topology	Line				
Transfer rate	1 MBaud				
Bus length	Max. 25 m				
Galvanic isolation	500 V				
General					
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)				
Colour of the housing	RAL 7012 basalt grey				
Mounting	plug-in on LCOS function carrier 22.5 mm (Accessories) DIN rail mounting (EN 60715)				
Protection class	IP20				
Installation position	vertical				
Connection type load side	X1: 8-pin multi-point plug, RM 5.08				
Connection type control side	X2: 12-pin multi-point plug, RM 3.5				
MTBF	690000 h @ 40 °C, 100 operations button, 30 revolutions coding switch				
Operation temperature range	-25 °C … +55 °C				
Storage temperature range	-40 °C … +70 °C				
Dimensions (w × h × d)	22.5 × 110.0 × 102.0 mm (including function carrier, without plug-in terminals on the side)				
Weight	0.200 kg/piece				
Approvals	cULus, GL in preparation				
Standards	EN 60950-1, EN 61131-1, 2, EN 61000, EN 60947-4-1, EN 55022				

* **S** Article on stock
A Article available at short notice
R Article on request

Bus coupler for LCOS CCI and LOCC-Box
PROFINET

Dimensions

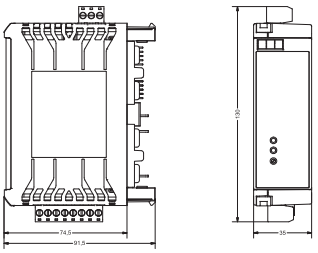


Description	Part-No.		Type	PU
Field bus coupler PROFINET				
	778000.1301	**S***	LCOS-BC-PN	1
Attention				
Note	**Bus/Power feed block 780730.575.1 also needs to be ordered.**			
Field bus connection				
Fieldbus/Network systems	PROFINET RT acc. IEC 61158-5-10			
BUS physics	Ethernet			
Interface mechanical	Square connector 10-pin			
Transfer rate	100 Mbit/s			
Transmission standard	IEE 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	–			
BUS participants	max. 80			
BUS topology	Line			
Interface mechanical	Plug-in spring terminal 2-pin, 0.2 – 2.5 mm^2 (AWG 24 – AWG 12)			
Communication LOCC-PADS				
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 USB				
BUS physics	USB specification 2.0			
Transfer rate	480 Mbit/s (USB High Speed)			
Interface mechanical	USB bush type B			
Status indication				
Status display communication	Power: red/green Maintenance: yellow Force: green Error: red BC error: red			
General				
Rated voltage range	DC 20.4 V – 30 V			
Power consumption	<5 W			
Protection device	Reverse diode			
Vibration resistance	4 g acc. to EN 60068-2-6			
Shock resistance	20 g acc. to EN 60068-2-26			
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	–			
Relative air humidity	20 – 95 % RH, not condensing			
Cooling	Air convection			
Colour of the housing	RAL 7012 basalt grey			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)			
Mounting	plug-in on component 780730.575.1 57.5 mm (Accessories)			
Application height	2000 m			
Protection class	IP20			
Standards	UL 61010, EN 61131-2, EN 55016, EN 61000-4-2/3/4/5/6, EN 55011, EN 60721-3-3, EN 60068-2-1-42			
Approvals	cULus, GL in preparation			
Dimensions (w × h × d)	22.5 × 100.0 × 110.0 mm			
Weight	0.25 kg/piece			

* **S** Article on stock
A Article available at short notice
R Article on request

Bus coupler for LCOS CCI and LOCC-Box EtherCAT

Dimensions

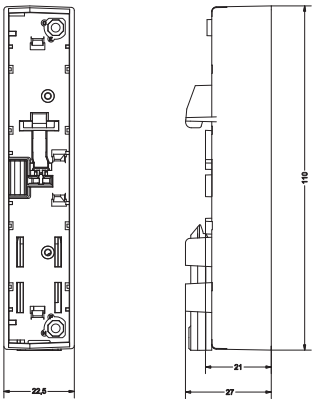


Description	Part-No.	Type	PU
Field bus coupler EtherCAT			
	778000.1401 **S***	LCOS-BC-PN	1
Attention			
Note	**Bus/Power feed block 780740.575.1 also needs to be ordered.**		
Field bus connection			
Fieldbus/Network systems	EtherCAT Slave acc. ETG.1300		
BUS physics	Ethernet		
Interface mechanical	Square connector 10-pin		
Transfer rate	100 Mbit/s		
Transmission standard	IEE 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	–		
BUS participants	max. 80		
BUS topology	Line		
Interface mechanical	Plug-in spring terminal 2-pin, 0.2 – 2.5 mm^2 (AWG 24 – AWG 12)		
Communication LOCC-PADS			
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 USB			
BUS physics	USB specification 2.0		
Transfer rate	480 Mbit/s (USB High Speed)		
Interface mechanical	USB bush type B		
Status indication			
Status display communication	Power: red/green Maintenance: yellow RUN: green Error: red BC error: red IN LINK/ACT: green OUT LINK/ACT		
General			
Rated voltage range	DC 20.4 V – 30 V		
Power consumption	<5 W		
Protection device	Reverse diode		
Vibration resistance	4 g acc. to EN 60068-2-6		
Shock resistance	20 g acc. to EN 60068-2-26		
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	–		
Relative air humidity	20 – 95 % RH, not condensing		
Cooling	Air convection		
Colour of the housing	RAL 7012 basalt grey		
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)		
Mounting	plug-in on component 780730.575.1 57.5 mm (Accessories)		
Application height	2000 m		
Protection class	IP20		
Standards	UL 61010, EN 61131-2, EN 55016, EN 61000-4-2/3/4/5/6, EN 55011, EN 60721-3-3, EN 60068-2-1-42		
Approvals	cULus, GL in preparation		
Dimensions (w × h × d)	22.5 × 100.0 × 110.0 mm		
Weight	0.25 kg/piece		

* **S** Article on stock
A Article available at short notice
R Article on request

LCOS function carrier 22.5 mm
Closed design
Integrated PE contact

Dimensions



Description		Part-No.		Type	PU
Function carrier					
Width	22.5 mm	780201.225.1	**A***	LCOS-FT-PE-225-00-00-1	1
	22.5 mm	780201.225.2	**S***	LCOS-FT-PE-225-00-00-1	10

Slots	**780201.225.1**	**780201.225.2**
Slots	1 × 22.5mm	
General		
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)	
Colour of the housing	pebble grey	
Mounting	Can be snapped onto hat profile TS35 (EN 60715)	
Application height	–	
Installation position	vertical	
MTBF	–	
Dimensions (w × h × d)	22.5 × 28.0 × 110.0 mm	
Weight	0.040 kg/piece	0.060 kg/piece
Approvals	UL, GL	
Standards	EN 60947-1, EN 50178, EN 50124-1, EN 50175, IEC 60068-2-42, 43, 8, 27, EN 60064-1	
General ambient conditions		
Operation temperature range	-40 °C … +85 °C	
Storage temperature range	-40 °C … +85 °C	
Protection class	IP20	
Relative air humidity	5 % – 95 % without condensation	
Shock resistance	15 g 11 ms acc. to IEC 60068-2-27	
Vibration resistance	4 g acc. to EN 60068-2-8	

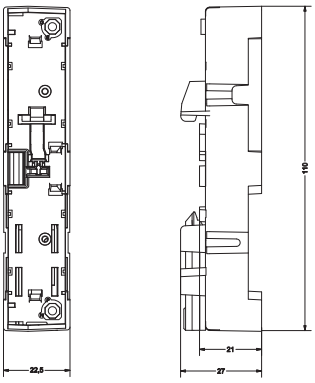
* **S** Article on stock
A Article available at short notice
R Article on request

LCOS function carrier 22.5 mm
Modular design
Integrated PE contact

Description		Part-No.		Type	PU
Function carrier					
Width	22.5 mm	780331.225.1	**A***	LCOS-FT-PE-225-00-03-1	1
	22.5 mm	780331.225.2	**S***	LCOS-FT-PE-225-00-03-1	10

Slots	**780331.225.1**	**780331.225.2**
Slots	1 × 22.5mm	
General		
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)	
Colour of the housing	pebble grey	
Mounting	Can be snapped onto hat profile TS35 (EN 60715)	
Application height	–	
Installation position	vertical	
MTBF	–	
Dimensions (w × h × d)	22.5 × 28.0 × 110.0 mm	
Weight	0.040 kg/piece	0.060 kg/piece
Approvals	UL, GL	
Standards	EN 60947-1, EN 50178, EN 50124-1, EN 50175, IEC 60068-2-42, 43, 8, 27, EN 60064-1	
General ambient conditions		
Operation temperature range	-40 °C … +85 °C	
Storage temperature range	-40 °C … +85 °C	
Protection class	IP20	
Relative air humidity	5 % – 95 % without condensation	
Shock resistance	15 g 11 ms acc. to IEC 60068-2-27	
Vibration resistance	4 g acc. to EN 60068-2-8	

Dimensions



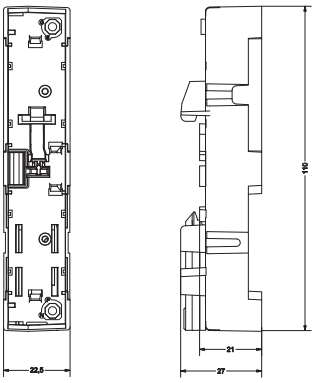
* **S** Article on stock
A Article available at short noticer
R Article on request

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

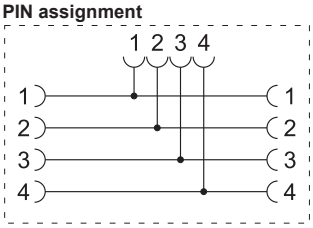
Description		Part-No.		Type	PU
Function carrier					
Width	22.5 mm	780402.225.1	**A***	LCOS-FT-PE-225-0P-02-1	1
	22.5 mm	780402.225.2	**S***	LCOS-FT-PE-225-0P-02-1	10

Electrical data Power Bus	**780402.225.1**	**780402.225.2**
Operating voltage	max. AC/DC 500 V	
Operating current	max. AC/DC 16 A/channel	
Voltage drop	<80 mV	
Slots		
Slots	1 × 22.5mm	
General		
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)	
Colour of the housing	pebble grey	
Mounting	Can be snapped onto hat profile TS35 (EN 60715)	
Application height	–	
Installation position	vertical	
MTBF	–	
Dimensions (w × h × d)	22.5 × 28.0 × 110.0 mm	
Weight	0.040 kg/piece	0.060 kg/piece
Approvals	UL, GL	
Standards	EN 60947-1, EN 50178, EN 50124-1, EN 50175, IEC 60068-2-42, 43, 8, 27, EN 60064-1	
General ambient conditions		
Operation temperature range	-40 °C … +85 °C	
Storage temperature range	-40 °C … +85 °C	
Protection class	IP20	
Relative air humidity	5 % – 95 % without condensation	
Shock resistance	15 g 11 ms acc. to IEC 60068-2-27	
Vibration resistance	4 g acc. to EN 60068-2-8	

Dimensions



PIN assignment



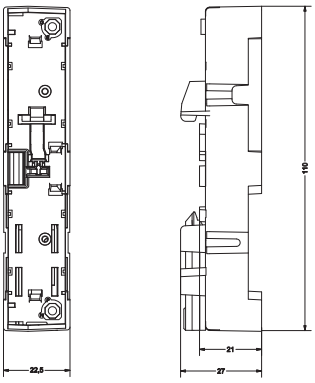
* **S** Article on stock
A Article available at short notice
R Article on request

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

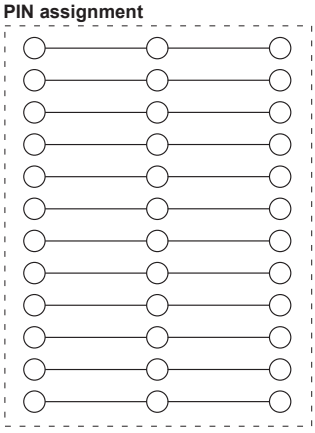
Description		Part-No.		Type	PU
Function carrier					
Width	22.5 mm	780403.225.1	**R***	LCOS-FT-PE-225-DP-03-1	1
	22.5 mm	780403.225.2	**S***	LCOS-FT-PE-225-DP-03-1	10

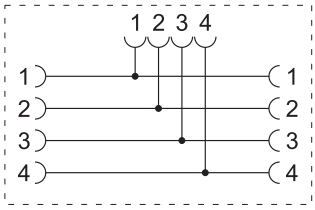
Electrical data Power Bus	**780403.225.1**	**780403.225.2**
Operating voltage	max. AC/DC 500 V	
Operating current	max. AC/DC 16 A/channel	
Voltage drop	<80 mV	
Data module		
Material PCB	FR4	
Material connector	PE-HT	
Operating voltage	max. DC 30 V	
Operating current	max. DC 2 A/contact	
System current	max. DC 8 A	
Pole number	Input/output: 10-pin, outlet: 2×10-pin	
Contact material	CuZn	
Slots		
Slots	1 × 22.5mm	
General		
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)	
Colour of the housing	pebble grey	
Mounting	Can be snapped onto hat profile TS35 (EN 60715)	
Application height	–	
Installation position	vertical	
MTBF	–	
Dimensions (w × h × d)	22.5 × 28.0 × 110.0 mm	
Weight	0.040 kg/piece	0.060 kg/piece
Approvals	cULus, GL	
Standards	EN 60947-1, EN 50178, EN 50124-1, EN 50175, IEC 60068-2-42, 43, 8, 27, EN 60064-1	
General ambient conditions		
Operation temperature range	-40 °C … +85 °C	
Storage temperature range	-40 °C … +85 °C	
Protection class	IP20	
Relative air humidity	5 % – 95 % without condensation	
Shock resistance	15 g 11 ms acc. to IEC 60068-2-27	
Vibration resistance	4 g acc. to EN 60068-2-8	

Dimensions



PIN assignment





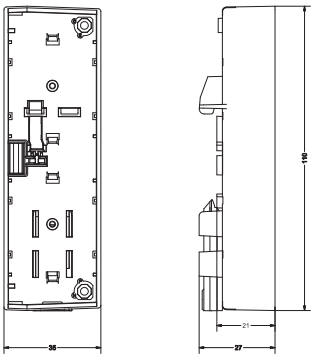
* **S** Article on stock
A Article available at short noticer
R Article on request

LCOS function carrier 35 mm
Closed design
Integrated PE contact

Description		Part-No.		Type	PU
Function carrier					
Width	35.0 mm	780201.350.1	**A***	LCOS-FT-PE-350-00-00-1	1
	35.0 mm	780201.350.2	**S***	LCOS-FT-PE-350-00-00-1	10

Slots	**780201.350.1**	**780201.350.2**
Slots	1 × 35mm	
General		
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)	
Colour of the housing	pebble grey	
Mounting	Can be snapped onto hat profile TS35 (EN 60715)	
Application height	–	
Installation position	vertical	
MTBF	–	
Dimensions (w × h × d)	35.0 × 28.0 × 110.0 mm	
Weight	0.040 kg/piece	0.060 kg/piece
Approvals	UL, GL	
Standards	EN 60947-1, EN 50178, EN 50124-1, EN 50175, IEC 60068-2-42, 43, 8, 27, EN 60064-1	
General ambient conditions		
Operation temperature range	-40 °C … +85 °C	
Storage temperature range	-40 °C … +85 °C	
Protection class	IP20	
Relative air humidity	5 % – 95 % without condensation	
Shock resistance	15 g 11 ms acc. to IEC 60068-2-27	
Vibration resistance	4 g acc. to EN 60068-2-8	

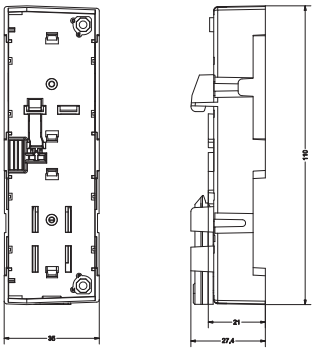
Dimensions



* **S** Article on stock
A Article available at short notice
R Article on request

LCOS function carrier 35 mm
Modular design
Integrated PE contact

Dimensions



Description		Part-No.		Type	PU
Function carrier					
Width	35.0 mm	780331.350.1	**A***	LCOS-FT-PE-350-00-03-1	1
	35.0 mm	780331.350.2	**S***	LCOS-FT-PE-350-00-03-1	10

Slots	**780331.350.1**	**780331.350.2**
Slots	1 × 35mm	
General		
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)	
Colour of the housing	pebble grey	
Mounting	Can be snapped onto hat profile TS35 (EN 60715)	
Application height	–	
Installation position	vertical	
MTBF	–	
Dimensions (w × h × d)	35.0 × 28.0 × 110.0 mm	
Weight	0.040 kg/piece	0.060 kg/piece
Approvals	UL, GL	
Standards	EN 60947-1, EN 50178, EN 50124-1, EN 50175, IEC 60068-2-42, 43, 8, 27, EN 60064-1	
General ambient conditions		
Operation temperature range	-40 °C … +85 °C	
Storage temperature range	-40 °C … +85 °C	
Protection class	IP20	
Relative air humidity	5 % – 95 % without condensation	
Shock resistance	15 g 11 ms acc. to IEC 60068-2-27	
Vibration resistance	4 g acc. to EN 60068-2-8	

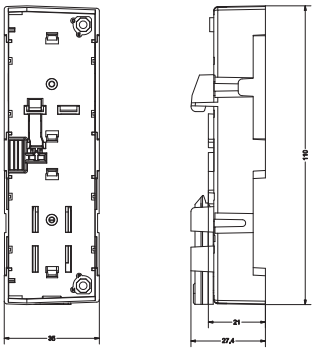
* **S** Article on stock
A Article available at short noticer
R Article on request

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

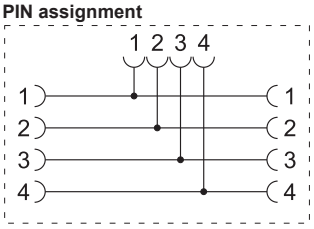
Description		Part-No.		Type	PU
Function carrier					
Width	35.0 mm	780402.350.1	**A***	LCOS-FT-PE-350-0P-02-1	1
	35.0 mm	780402.350.2	**S***	LCOS-FT-PE-350-0P-02-1	10

Electrical data Power Bus	**780402.350.1**	**780402.350.2**
Operating voltage	max. AC/DC 500 V	
Operating current	max. AC/DC 16 A/channel	
Voltage drop	<80 mV	
Slots		
Slots	1 × 35mm	
General		
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)	
Colour of the housing	pebble grey	
Mounting	Can be snapped onto hat profile TS35 (EN 60715)	
Application height	–	
Installation position	vertical	
MTBF	–	
Dimensions (w × h × d)	35.0 × 28.0 × 110.0 mm	
Weight	0.040 kg/piece	0.060 kg/piece
Approvals	UL, GL	
Standards	EN 60947-1, EN 50178, EN 50124-1, EN 50175, IEC 60068-2-42, 43, 8, 27, EN 60064-1	
General ambient conditions		
Operation temperature range	-40 °C … +85 °C	
Storage temperature range	-40 °C … +85 °C	
Protection class	IP20	
Relative air humidity	5 % – 95 % without condensation	
Shock resistance	15 g 11 ms acc. to IEC 60068-2-27	
Vibration resistance	4 g acc. to EN 60068-2-8	

Dimensions



PIN assignment



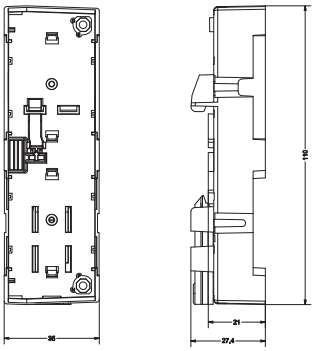
* **S** Article on stock
A Article available at short notice
R Article on request

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

Description		Part-No.		Type	PU
Function carrier					
Width	35.0 mm	780403.350.1	**A***	LCOS-FT-PE-350-DP-03-1	1
	35.0 mm	780403.350.2	**S***	LCOS-FT-PE-350-DP-03-1	10

Electrical data Power Bus	**780403.350.1**	**780403.350.2**
Operating voltage	max. AC/DC 500 V	
Operating current	max. AC/DC 16 A/channel	
Voltage drop	<80 mV	
Data module		
Material PCB	FR4	
Material connector	PE-HT	
Operating voltage	max. DC 30 V	
Operating current	max. DC 2 A/contact	
System current	max. DC 8 A	
Pole number	Input/output: 10-pin, outlet: 2×10-pin	
Contact material	CuZn	
Slots		
Slots	1 × 35mm	
General		
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)	
Colour of the housing	pebble grey	
Mounting	Can be snapped onto hat profile TS35 (EN 60715)	
Application height	–	
Installation position	vertical	
MTBF	–	
Dimensions (w × h × d)	35.0 × 28.0 × 110.0 mm	
Weight	0.040 kg/piece	0.060 kg/piece
Approvals	UL, GL	
Standards	EN 60947-1, EN 50178, EN 50124-1, EN 50175, IEC 60068-2-42, 43, 8, 27, EN 60064-1	
General ambient conditions		
Operation temperature range	-40 °C … +85 °C	
Storage temperature range	-40 °C … +85 °C	
Protection class	IP20	
Relative air humidity	5 % – 95 % without condensation	
Shock resistance	15 g 11 ms acc. to IEC 60068-2-27	
Vibration resistance	4 g acc. to EN 60068-2-8	

Dimensions



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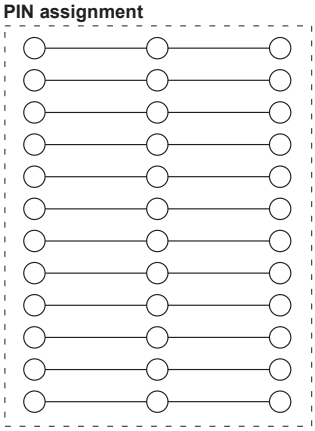
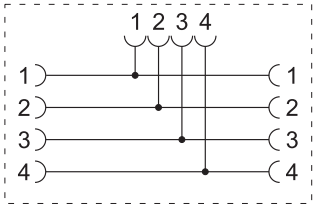
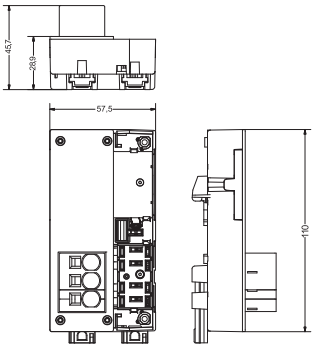




* **S** Article on stock
A Article available at short noticer
R Article on request

Function carrier with feed DC 24 V, integrated PE contact
Power bus: DC 24 V, 32 A max.
Internal data bus

Dimensions



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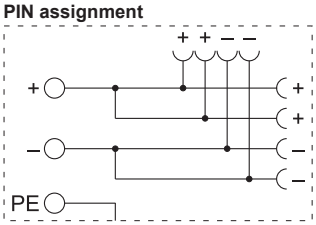
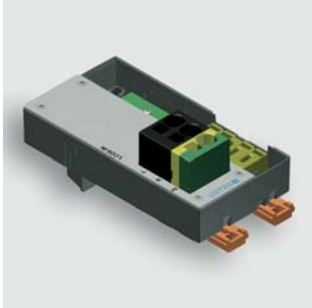


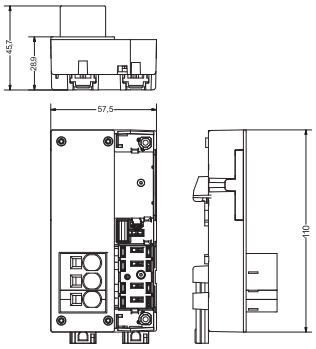
Description		Part-No.		Type	PU
Function carrier					
Width	57.5 mm	780700.575.1	**S***	LCOS-FTE-PE-575-NC-00-1	1
Electrical data Power Bus		**780700.575.1**			
Operating voltage		max. AC/DC 30 V			
Operating current		max. AC/DC 32 A			
Voltage drop		<80 mV			
Connection device		Spring terminal 3×16 mm^2, 3×10 mm^2 with AE			
Connection device		Spring terminal 3×AWG 6, 3×AWG 8 with AE			
Electrical data supplementary supply					
Operating voltage		–			
Rated voltage		–			
Operating current		–			
Protection device		–			
Connection type input		–			
Field bus connection					
Interface mechanical		–			
Status indication		–			
Slots					
Slots		1 × LCOS function housing 22.5 mm, 1 × data bus 10-pin			
General					
Housing material		PA 6.6 (UL 94 V-0, NFF I2, F2)			
Colour of the housing		pebble grey			
Mounting		Can be snapped onto hat profile TS35 (EN 60715)			
Application height		2000 m max.			
Installation position		vertical			
MTBF		9, 10, 11, 12			
Protection class		I			
Over voltage category		II			
Degree of polution		2			
Dimensions (w × h × d)		57.5 × 28.0 × 110.0 mm			
Weight		0.200 kg/piece			
Approvals		UL, GL			
Standards		EN 60934, EN 60664-1, EN 60947-1, EN 50178, EN 50124-1, EN 61140			
General ambient conditions					
Operation temperature range		-40 °C … +85 °C			
Storage temperature range		-40 °C … +85 °C			
Protection class		IP20			
Relative air humidity		5 % – 95 % without condensation			
Shock resistance		15 g 11 ms acc. to IEC 60068-2-27			
Vibration resistance		4 g acc. to EN 60068-2-8			

* **S** Article on stock
A Article available at short notice
R Article on request

Function carrier with feed AC 240 V, integrated PE contact
Power bus: AC 240 V, 32 A max.



Dimensions

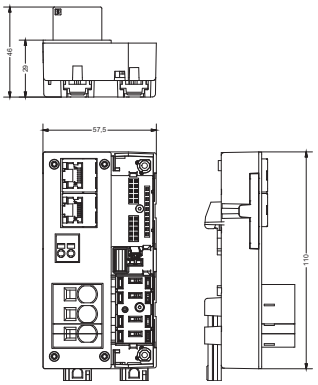


Description		Part-No.		Type	PU
Function carrier					
Width	57.5 mm	780701.575.1	**A***	LCOS-FTE-PE-575-NC-01-1	1
Electrical data Power Bus		**780701.575.1**			
Operating voltage		max. AC/DC 30 V			
Operating current		max. AC/DC 32 A			
Voltage drop		<80 mV			
Connection device		Spring terminal 3×16 mm^2, 3×10 mm^2 with AE			
Connection device		Spring terminal 3×AWG 6, 3×AWG 8 with AE			
Electrical data supplementary supply					
Operating voltage		–			
Rated voltage		–			
Operating current		–			
Protection device		–			
Connection type input		–			
Field bus connection					
Interface mechanical		–			
Status indication		–			
Slots					
Slots		1 × LCOS function housing 22.5 mm			
General					
Housing material		PA 6.6 (UL 94 V-0, NFF I2, F2)			
Colour of the housing		pebble grey			
Mounting		Can be snapped onto hat profile TS35 (EN 60715)			
Application height		2000 m max.			
Installation position		vertical			
MTBF		9, 10, 11, 12			
Protection class		I			
Over voltage category		II			
Degree of polution		2			
Dimensions (w × h × d)		57.5 × 28.0 × 110.0 mm			
Weight		0.200 kg/piece			
Approvals		UL, GL			
Standards		EN 60934, EN 60664-1, EN 60947-1, EN 50178, EN 50124-1, EN 61140			
General ambient conditions					
Operation temperature range		-40 °C … +85 °C			
Storage temperature range		-40 °C … +85 °C			
Protection class		IP20			
Relative air humidity		5 % – 95 % without condensation			
Shock resistance		15 g 11 ms acc. to IEC 60068-2-27			
Vibration resistance		4 g acc. to EN 60068-2-8			

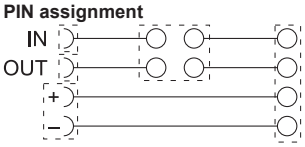
* **S** Article on stock
A Article available at short noticer
R Article on request

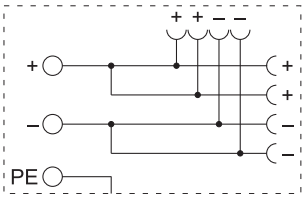
PROFINET Function carrier with feed DC 24 V, integrated PE contact
Power bus: DC 24 V, 32 A max.
Control voltage connection: DC 24 V

Dimensions



PIN assignment



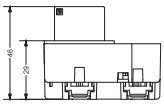


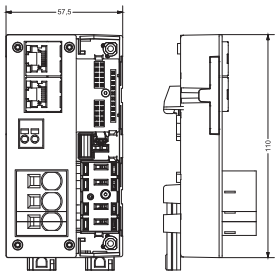
Description		Part-No.		Type	PU
Function carrier					
Width	57.5 mm	780730.575.1	**S***	LCOS-FTE-PE-575-PN-00-1	1
Electrical data Power Bus		**780730.575.1**			
Operating voltage		max. AC/DC 30 V			
Operating current		max. AC/DC 32 A			
Voltage drop		<80 mV			
Connection device		Spring terminal 3×16 mm^2, 3×10 mm^2 with AE			
Connection device		Spring terminal 3×AWG 6, 3×AWG 8 with AE			
Electrical data supplementary supply					
Operating voltage		DC 18 V – DC 31.2 V			
Rated voltage		DC 24 V			
Operating current		max. DC 2 A			
Protection device		Polarity reversal protection			
Connection type input		Spring terminal 2 × 2.5 mm^2 (AWG 26 – AWG 14)			
Field bus connection					
Interface mechanical		2xRJ45 bush with galvanic isolation 1.5 kV			
Status indication		Link, activity			
Slots					
Slots		1 × LCOS function housing 22.5 mm			
General					
Housing material		PA 6.6 (UL 94 V-0, NFF I2, F2)			
Colour of the housing		pebble grey			
Mounting		Can be snapped onto hat profile TS35 (EN 60715)			
Application height		2000 m max.			
Installation position		vertical			
MTBF		9, 10, 11, 12			
Protection class		I			
Over voltage category		II			
Degree of polution		2			
Dimensions (w × h × d)		57.5 × 28.0 × 110.0 mm			
Weight		0.250 kg/piece			
Approvals		UL, GL			
Standards		EN 60934, EN 60664-1, EN 60947-1, EN 50178, EN 50124-1, EN 61140			
General ambient conditions					
Operation temperature range		-40 °C … +85 °C			
Storage temperature range		-40 °C … +85 °C			
Protection class		IP20			
Relative air humidity		5 % – 95 % without condensation			
Shock resistance		15 g 11 ms acc. to IEC 60068-2-27			
Vibration resistance		4 g acc. to EN 60068-2-8			

* **S** Article on stock
A Article available at short notice
R Article on request

EtherCAT Function carrier with feed DC 24 V, integrated PE contact
Power bus: DC 24 V, 32 A max.
Control voltage connection: DC 24 V

Dimensions





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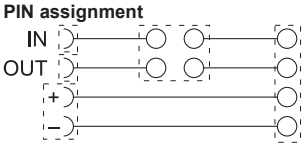
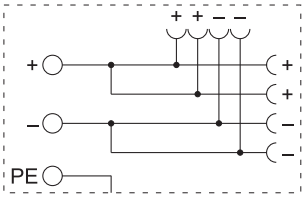


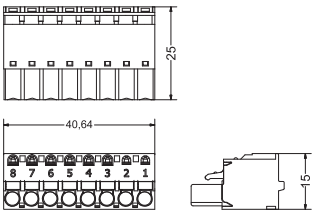


Description		Part-No.		Type	PU
Function carrier					
Width	57.5 mm	780740.575.1	**S***	LCOS-FTE-PE-575-EC-00-1	1
Electrical data Power Bus		**780740.575.1**			
Operating voltage		max. AC/DC 30 V			
Operating current		max. AC/DC 32 A			
Voltage drop		<80 mV			
Connection device		Spring terminal 3×16 mm^2, 3×10 mm^2 with AE			
Connection device		Spring terminal 3×AWG 6, 3×AWG 8 with AE			
Electrical data supplementary supply					
Operating voltage		DC 18 V – DC 31.2 V			
Rated voltage		DC 24 V			
Operating current		max. DC 2 A			
Protection device		Polarity reversal protection			
Connection type input		Spring terminal 2 × 2.5 mm^2 (AWG 26 – AWG 14)			
Field bus connection					
Interface mechanical		2xRJ45 bush with galvanic isolation 1.5 kV			
Status indication		Link, activity			
Slots					
Slots		1 × LCOS function housing 22.5 mm			
General					
Housing material		PA 6.6 (UL 94 V-0, NFF I2, F2)			
Colour of the housing		pebble grey			
Mounting		Can be snapped onto hat profile TS35 (EN 60715)			
Application height		2000 m max.			
Installation position		vertical			
MTBF		9, 10, 11, 12			
Protection class		I			
Over voltage category		II			
Degree of polution		2			
Dimensions (w × h × d)		57.5 × 28.0 × 110.0 mm			
Weight		0.250 kg/piece			
Approvals		UL, GL			
Standards		EN 60934, EN 60664-1, EN 60947-1, EN 50178, EN 50124-1, EN 61140			
General ambient conditions					
Operation temperature range		-40 °C … +85 °C			
Storage temperature range		-40 °C … +85 °C			
Protection class		IP20			
Relative air humidity		5 % – 95 % without condensation			
Shock resistance		15 g 11 ms acc. to IEC 60068-2-27			
Vibration resistance		4 g acc. to EN 60068-2-8			

* **S** Article on stock
A Article available at short noticer
R Article on request

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

Dimensions



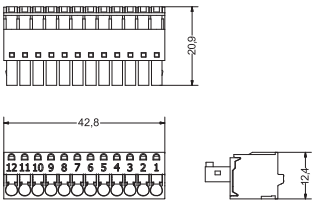
Description		Part-No.		Type	PU
LCOS plug-in terminal					
Connection device	Push-In	780921.000.2	**S***	LCOS-ZB-KL-FS-350-15-12	10
	Screw terminal	780921.002.2	**A***	LCOS-ZB-KL-SS-350-15-12	10

General	**780921.000.2**	**780921.002.2**
Design	Plug-in terminal RM 3,50	
Connection device	Push-In	Screw terminal
Connection cross-section	0.08 – 1.5 mm^2	
Connection cross-section	AWG 28 – AWG 16	
Housing material	PA 6.6 (UL 94 V-0)	
Colour of the housing	black	
Operating voltage	max. AC/DC 160 V	
Operating current	max. 8 A	
System current max.	–	
Over voltage category	III	
Degree of polution	3	
Pole number	12	
Contact material	CuNiZn	
Dimensions (w × h × d)	43.8 × 10.2 × 19.3 mm	
Weight	0.110 kg/piece	
Approvals	UR	
Standards	–	
General ambient conditions		
Operation temperature range	-40 °C … +85 °C	
Storage temperature range	-40 °C … +85 °C	
Protection class	IP00	

* **S** Article on stock
A Article available at short notice
R Article on request

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

Dimensions



Description		Part-No.		Type	PU
LCOS plug-in terminal					
Connection device	Push-In	780922.000.2	**S***	LCOS-ZB-KL-FS-508-25-8	10
	Screw terminal	780922.002.2	**A***	LCOS-ZB-KL-SS-508-25-8	10

General	**780922.000.2**	**780922.002.2**
Design	Plug-in terminal RM 5.08	
Connection device	Push-In	Screw terminal
Connection cross-section	0.08 – 2.5 mm^2	
Connection cross-section	AWG 28 – AWG 12	
Housing material	PA 6.6 (UL 94 V-0)	
Colour of the housing	black	
Operating voltage	max. AC/DC 300 V	
Operating current	max. 12 A	
System current max.	–	
Over voltage category	III	
Degree of polution	3	
Pole number	8	
Contact material	CuNiZn	
Dimensions (w × h × d)	43.1 × 12.7 × 16.8 mm	
Weight	0.100 kg/piece	
Approvals	UR	
Standards	–	
General ambient conditions		
Operation temperature range	-40 °C … +85 °C	
Storage temperature range	-40 °C … +85 °C	
Protection class	IP20	

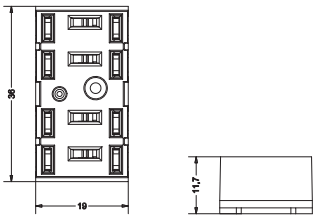
* **S** Article on stock
A Article available at short noticer
R Article on request

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

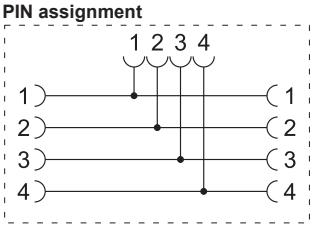
Description	Part-No.		Type	PU
Power module				
	780910.225.2	**S***	LCOS-ZB-PM-225-00-1	10
	780910.225.3	**S***	LCOS-ZB-PM-225-00-1	50

General	**780910.225.2**	**780910.225.3**
Material	PA 6.6 (UL 94 V0, NNF I2, F2)	
Operating voltage	max. AC/DC 500 V	
Operating current	max. AC/DC 16 A/phase	
System current max.	AC/DC 64 A	
Pole number	4	
Contact material	CuCrSiTi	
Mounting	latches into position on LCOS function carrier 22.5 mm	
Dimensions (w × h × d)	36.0 × 11.7 × 19.0 mm	
Weight	0.020 kg/piece	
Approvals	UR	
Standards	IEC 60068-2-42, 43, 8, 27, EN 60064-1, EN 50175, EN 50124-1	
General ambient conditions		
Operation temperature range	-40 °C … +85 °C	
Storage temperature range	-40 °C … +85 °C	
Protection class	IP20	
Relative air humidity	5 % – 95 % without condensation	
Shock resistance	15 g 11 ms acc. to IEC 60068-2-27	
Vibration resistance	4 g acc. to EN 60068-2-8	

Dimensions



PIN assignment



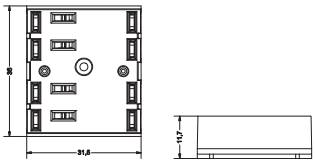
* **S** Article on stock
A Article available at short notice
R Article on request

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

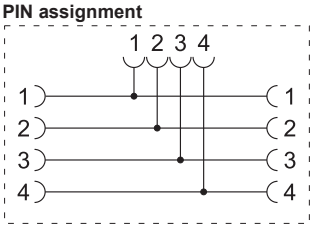
Description	Part-No.		Type	PU
Power module				
	780910.350.2	**S***	LCOS-ZB-PM-350-00-1	10
	780910.350.3	**S***	LCOS-ZB-PM-350-00-1	50

General	**780910.350.2**	**780910.350.3**
Material	PA 6.6 (UL 94 V0, NNF I2, F2)	
Operating voltage	max. AC/DC 500 V	
Operating current	max. AC/DC 16 A/phase	
System current max.	AC/DC 64 A	
Pole number	4	
Contact material	CuCrSiTi	
Mounting	latches into position on LCOS function carrier 35 mm	
Dimensions (w × h × d)	36.0 × 10.0 × 31.5 mm	
Weight	0.020 kg/piece	
Approvals	UR	
Standards	IEC 60068-2-42, 43, 8, 27, EN 60064-1, EN 50175, EN 50124-1	
General ambient conditions		
Operation temperature range	-40 °C … +85 °C	
Storage temperature range	-40 °C … +85 °C	
Protection class	IP20	
Relative air humidity	5 % – 95 % without condensation	
Shock resistance	15 g 11 ms acc. to IEC 60068-2-27	
Vibration resistance	4 g acc. to EN 60068-2-8	

Dimensions



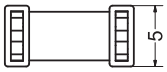
PIN assignment

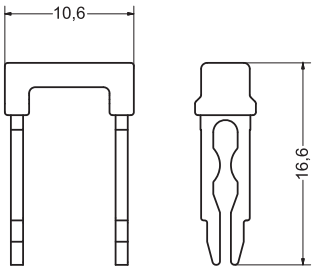


* **S** Article on stock
A Article available at short noticer
R Article on request

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

Dimensions





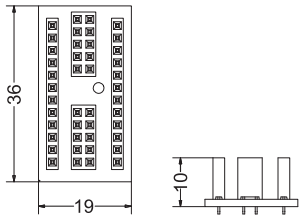
Description	Part-No.		Type	PU
Power bridge				
	780961.001.2	**S***	LCOS-ZB-PB-01-00	10
	780961.001.3	**S***	LCOS-ZB-PB-01-00	50

General	**780961.001.2**	**780961.001.3**
Material	PA 6.6 (UL 94 V0, NNF I2, F2)	
Operating voltage	max. AC/DC 500 V	
Operating current	max. AC/DC 16 A/phase	
System current max.	AC/DC 64 A	
Pole number	1	
Contact material	CuCrSiTi	
Mounting	latches into position on LCOS function carrier 22.5 mm or 35 mm	
Dimensions (w × h × d)		
Weight	0.020 kg/piece	
Approvals	UR	
Standards	IEC 60068-2-42, 43, 8, 27, EN 60064-1, EN 50175, EN 50124-1	
General ambient conditions		
Operation temperature range	-40 °C … +85 °C	
Storage temperature range	-40 °C … +85 °C	
Protection class	IP20	
Relative air humidity	5 % – 95 % without condensation	
Shock resistance	15 g 11 ms acc. to IEC 60068-2-27	
Vibration resistance	4 g acc. to EN 60068-2-8	

* **S** Article on stock
A Article available at short notice
R Article on request

LCOS data module
12-pin
22.5 mm

Dimensions



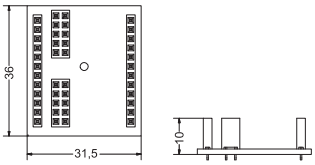
Description	Part-No.		Type	PU
LCOS data module				
	780900.225.2	**S***	LCOS-ZB-DM-225-12-00-1	10
	780900.225.3	**S***	LCOS-ZB-DM-225-12-00-1	50

General	**780900.225.2**	**780900.225.3**
Material PCB	FR4	
Material connector	PE-HT	
Operating voltage	max. DC 30 V	
Operating current	max. DC 2 A/contact	
System current	max. DC 8 A	
Pole number	Input/output: 12-ping, outlet: 2×10-pin	
Contact material	CuZn	
Mounting	latches into position on LCOS function carrier 22.5 mm	
Dimensions (w × h × d)	36.0 × 10.0 × 19.0 mm	
Weight	0.004 kg/piece	
Approvals	UR	
Standards	IEC 60068-2-42, 43, 8, 27, EN 60064-1, EN 50175, EN 50124-1	
General ambient conditions		
Operation temperature range	-40 °C … +85 °C	
Storage temperature range	-40 °C … +85 °C	
Protection class	IP20	
Relative air humidity	5 % – 95 % without condensation	
Shock resistance	15 g 11 ms acc. to IEC 60068-2-27	
Vibration resistance	4 g acc. to EN 60068-2-8	

* **S** Article on stock
A Article available at short noticer
R Article on request

LCOS data module
12-pin
35 mm

Dimensions



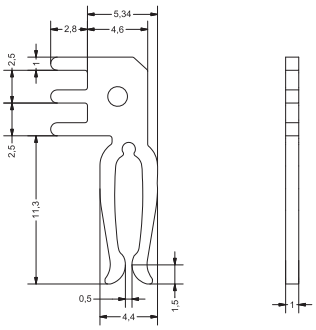
Description	Part-No.		Type	PU
LCOS data module				
	780900.350.2	**A***	LCOS-ZB-DM-350-12-00-1	10
	780900.350.3	**A***	LCOS-ZB-DM-350-12-00-1	50

General	**780900.350.2**	**780900.350.3**
Material PCB	FR4	
Material connector	PE-HT	
Operating voltage	max. DC 30 V	
Operating current	max. DC 2 A/contact	
System current	max. DC 8 A	
Pole number	Input/output: 12-ping, outlet: 2×10-pin	
Contact material	CuZn	
Mounting	latches into position on LCOS function carrier 35 mm	
Dimensions (w × h × d)	36.0 × 10.0 × 19.0 mm	
Weight	0.004 kg/piece	
Approvals	–	
Standards	IEC 60068-2-42, 43, 8, 27, EN 60064-1, EN 50175, EN 50124-1	
General ambient conditions		
Operation temperature range	-40 °C … +85 °C	
Storage temperature range	-40 °C … +85 °C	
Protection class	IP20	
Relative air humidity	5 % – 95 % without condensation	
Shock resistance	15 g 11 ms acc. to IEC 60068-2-27	
Vibration resistance	4 g acc. to EN 60068-2-8	

* **S** Article on stock
A Article available at short notice
R Article on request

LCOS PCB contact
matches LCOS power module
1-pin

Dimensions



Description	Part-No.		Type	PU
LCOS PCB contact				
	780962.000.4	**S***	LCOS-ZB-LPK-00	100
General	**780962.000.4**			
Material	–			
Operating voltage	max. AC/DC 500 V			
Operating current	max. AC/DC 10 A			
System current max.	–			
Pole number	1			
Contact material	CuCrSiTi			
Dimensions (w × h × d)				
Weight	0.001 kg/piece			
Approvals	–			
Standards	IEC 60068-2-42, 43, 8, 27, EN 60064-1, EN 50175, EN 50124-1			
General ambient conditions				
Operation temperature range	-40 °C … +85 °C			
Storage temperature range	-40 °C … +85 °C			

* **S** Article on stock
A Article available at short noticer
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Accessories

Description	Part-No.		Type	PU
Replace front plate, closed, function housing 22.5 mm	780600.225.3	**A***	LCOS-ZB-FPL-225-00-1	50
Replace front plate, closed, function housing 22.5 mm	780600.225.4	**A***	LCOS-ZB-FPL-225-00-1	100
Replace front plate, closed, function housing 35 mm	780600.350.3	**A***	LCOS-ZB-FPL-350-00-1	50
Replace front plate, closed, function housing 35 mm	780600.350.4	**A***	LCOS-ZB-FPL-350-00-1	100
Attachment screws data/power module	780991.000.4	**S***	LCOS-ZB-Schraube-00	100
Coding pins	780990.000.3	**S***	LCOS-ZB-Codier	50
Laboratory printed circuit board (PCB) FR4, 1.5 mm	780963.000.2	**S***	LCOS-ZB-EB-01	10
Cover plate, on the side	780600.000.4	**S***	LCOS-ZB-AD-00-1	100

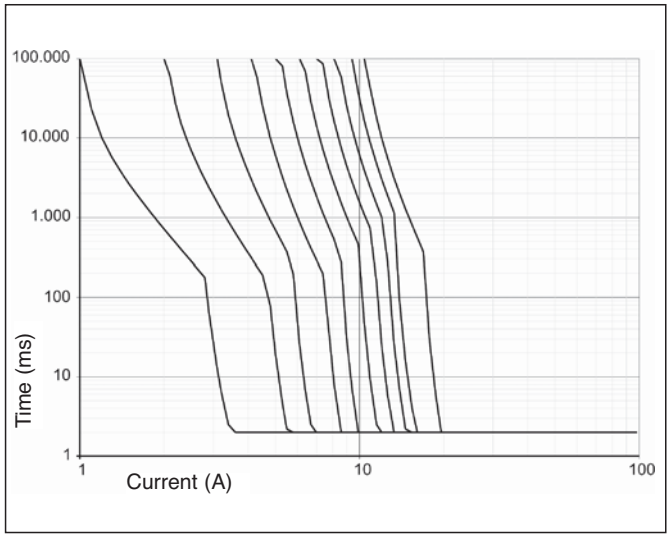
* **S** Article on stock
A Article available at short notice
R Article on request

LCOS-CC · Characteristic Curves

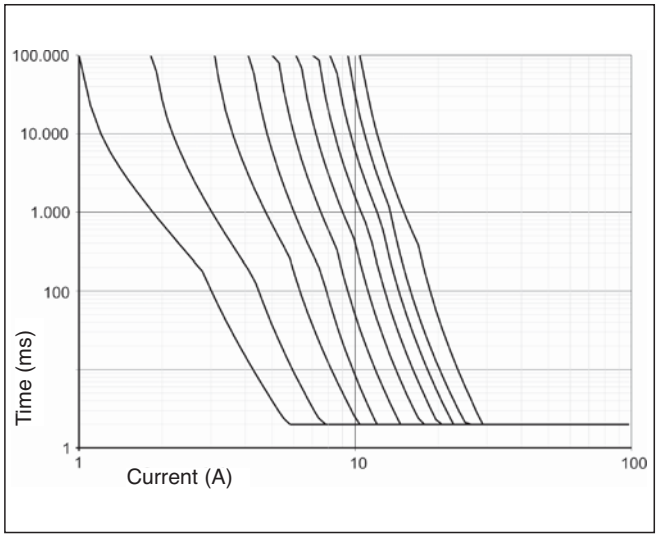
All devices have the same characteristic curves

1-10 A (6A)

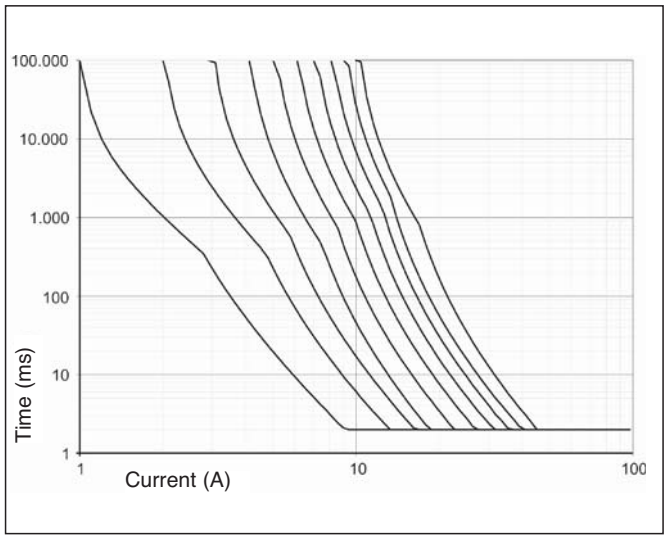
Switch position 1: Characteristic fast



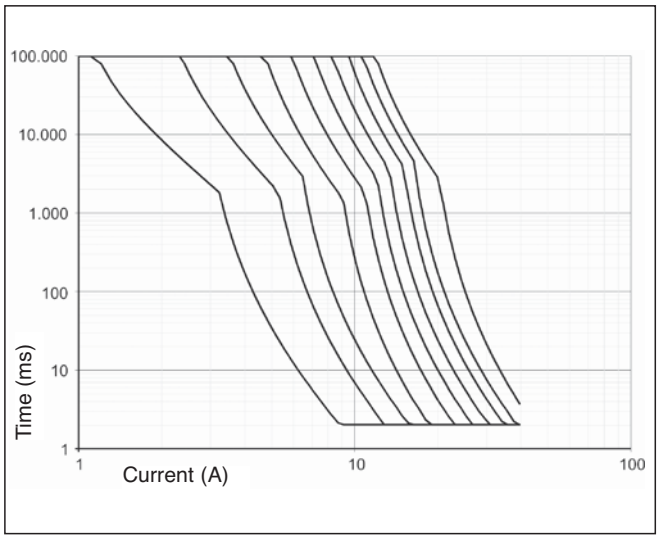
Switch position 2: Characteristic medium



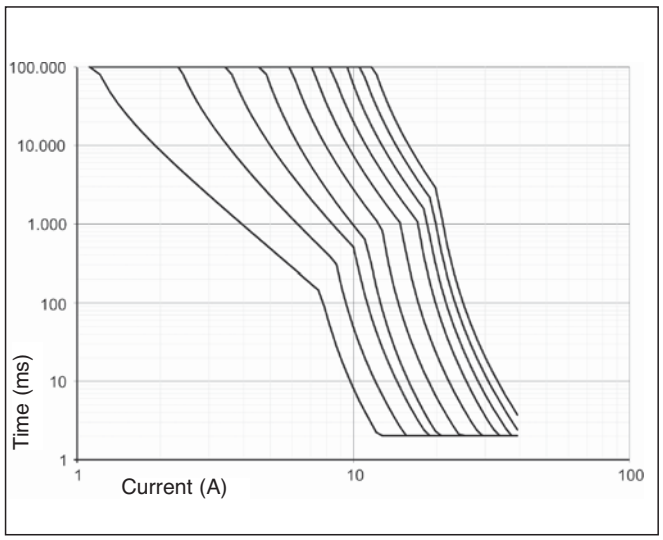
Switch position 3: Characteristic slow-1



Switch position 4: Characteristic slow-2



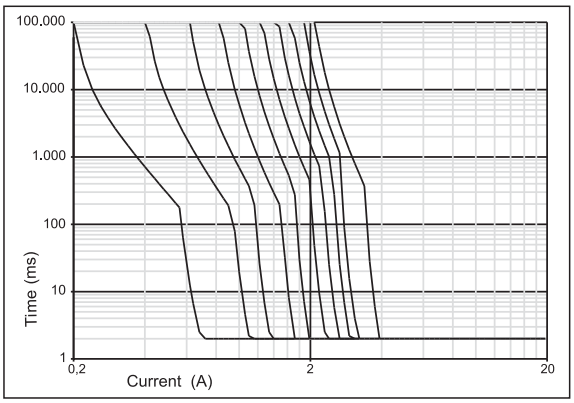
Switch position 5: Characteristic slow-3



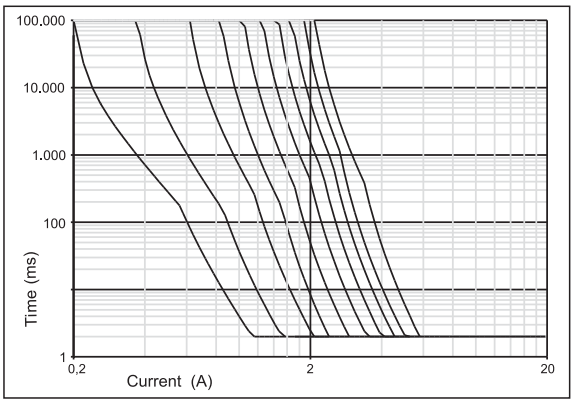
LCOS-CC · Characteristic Curves

Characteristic Curves 0-2 A

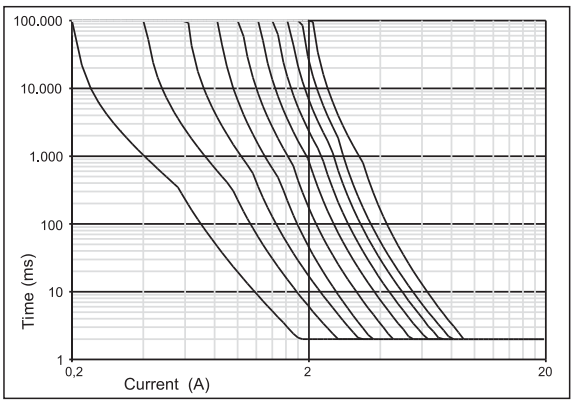
Switch position 1: Characteristic fast



Switch position 2: Characteristic medium

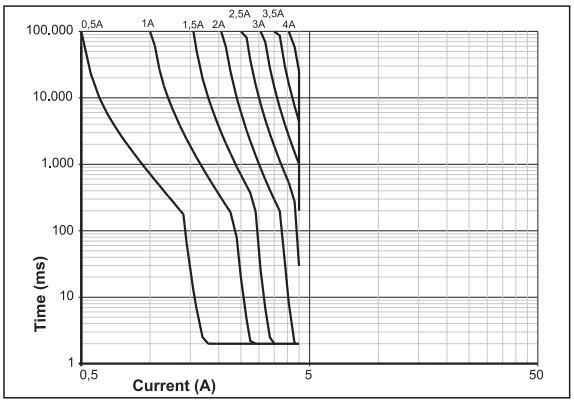


Switch position 3: Characteristic slow

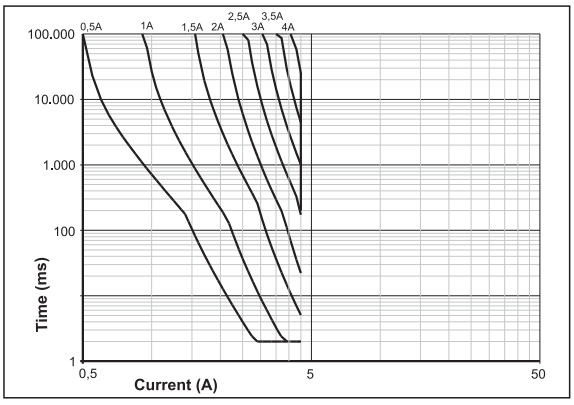


Characteristic Curves NEC Class 2

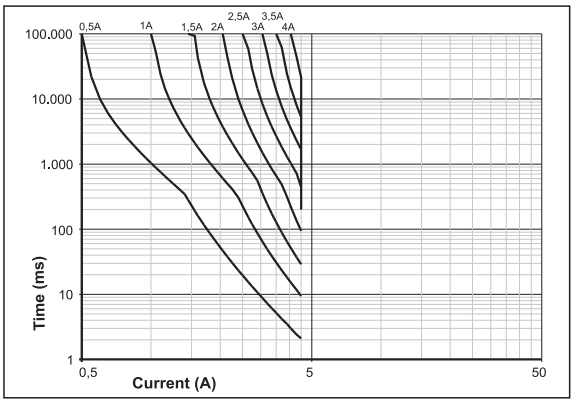
Switch position 1: Characteristic fast



Switch position 2: Characteristic medium



Switch position 3: Characteristic slow



Article number index

Notes

Notes

SkyBLUE

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Partner of the Engineering Industry Sustainability Initiative

Innovations-Allianz Green Carbody Technologies

ISO 14001

RoHS

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Cables

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Cable fittings

LSC Wiring System

Module and Interface Technology

Ethernet Connectivity

Suppression Technology

Power Supplies

Railway Technology

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