

Control Solutions

### Industrial Power Supplies

Delta Series Power Supplies Compact Series Power Supplies / USP LOCC-Box / LCOS CC – Intelligent DC Circuit Protection



## 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.

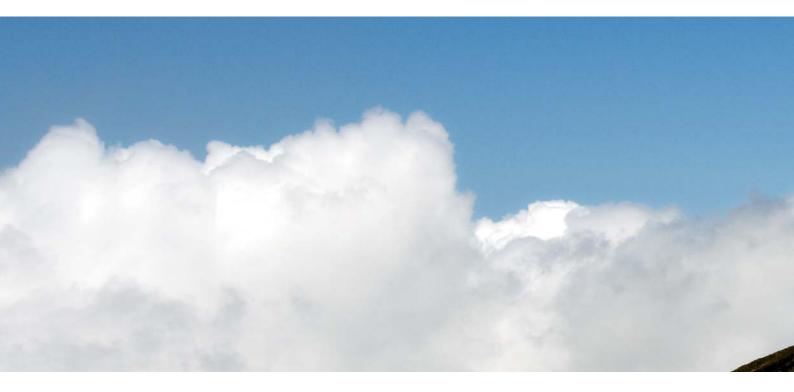
Thus LÜTZE creates value through efficiency. LÜTZE provides answers and demonstrates how to handle resources responsibly, with our environment and our future in mind. LÜTZE - Efficiency in Automation

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





# 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.



## 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.





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





### Power Supplies · Product Overview













Compact 3-phase

Compact 1-phase

### AC / DC Power Supplies

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### Power Supplies · Product Overview









LCOS CC

**DC - USP Supply** 

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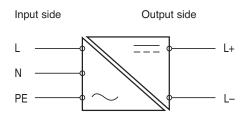
### **Power Supplies · Basics**

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.

### 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.

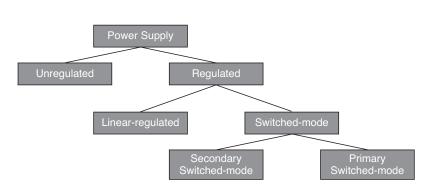
### 2.3 Safe isolation

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.



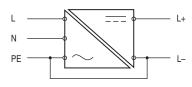
The key criteria in selection of a power supply are:

#### Input side:

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

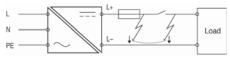
### Output side:

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



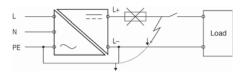
Secondary grounding

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.





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.



### **Power Supplies · Basics**

### 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 threephase 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.

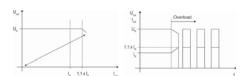
A short-circuit is a special form of overload. In this case, the outputs of the power supply are interconnected at very low resistance, as a result of which the output current may assume extremely high values.

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

### Fold-back characteristic/Hiccup mode

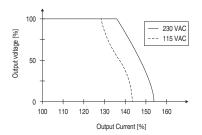
Lütze power supplies supply a current typically up to 1.2 times the nominal output current. They automatically switch off if the current consumption of the connected loads exceeds this value or if a short-circuit occurs. After a defined period of time, the power supply tries to restart the load. If the 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<sub>N</sub>. To do so, Lütze also offers devices with overload capacity of 1.5 I<sub>N</sub> 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.

### **Power Supplies · Basics**



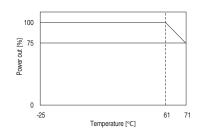
#### U/I characteristic

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

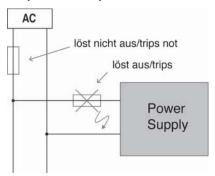
Alongside the output behaviour described in section 4, there is a U/I characteristic with an additional power reserve. However, all these output behaviour modes are ultimately not suitable for safe activation of standard line protection equipment. The reason lies in the technical design of the equipment. Only electronic protection devices capable of reacting fast enough to overload or shortcircuit 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

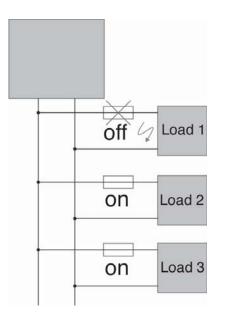
In case of series-connected fuses, the tripping coordination of fuses is considered as selective if only the fuse installed nearest to the fault trips. Fuses that are located nearer to the energy feeding point do not trip. This guarantees that as many system parts as possible remain operative in the 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 <sup>2</sup>	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

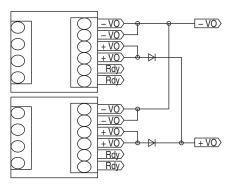
An increase of the output power can be obtained by connecting power supplies in parallel. This can be necessary if the current required by the load is higher than a single power supply can deliver, for example after the expansion of an existing installation. The following preconditions must be met when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

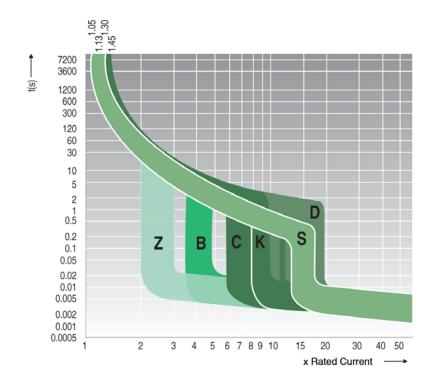
### Operating behaviour of primary switching controllers

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  $+45^{\circ}$ 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.

### I OCC-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!

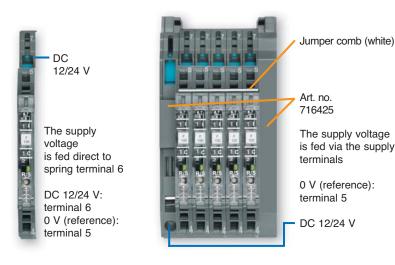
Here, too, the LOCC-Box system is setting new standards. The single-channel design with all the functionality described offers the highest possible flexibility. As shown below, customers can decide whether the supply is provided by each module individually or via the system supply (infeed terminal, copper

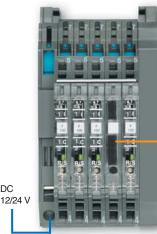
rail, end terminal). The particular advantage of this method of infeed is the screwless contact carriage, which permits exchanging of individual channels in operation without interrupting the entire supply. This additional provides functionality to switch off individual paths to perform essential work safely. The maximum supply current is dictated by the 6mm<sup>2</sup> 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





The empty casing, without contacts art. no. 716424, can be used as a placeholder for future enhancements.

### Use with additional supply terminals

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



Dual supply left

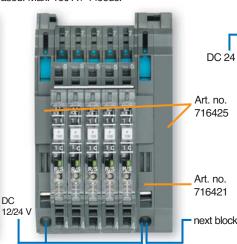
The supply terminal is accessed via an aperture in the left hand side wall. This enables a variable positioning in the system construction. The maximum total current can thus be increased. Max. 160 A / 4 feeds.

DC

DC



Additional supply in the middle



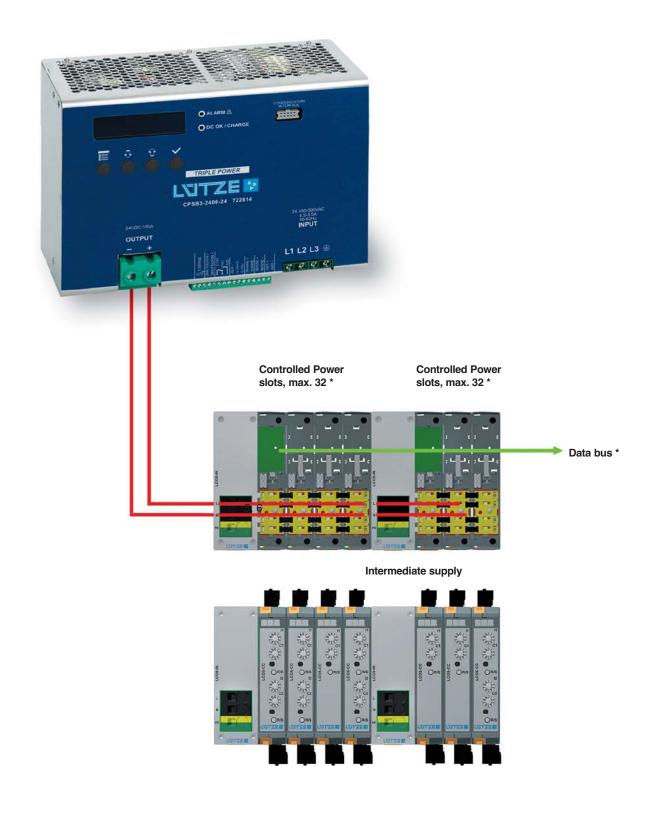
Additional supply right or outlet to next block

### Individual construction with distance terminal



The distance terminal Art. no. 716422 is used as a spacer or as isolation. Supply via spring terminal 6.

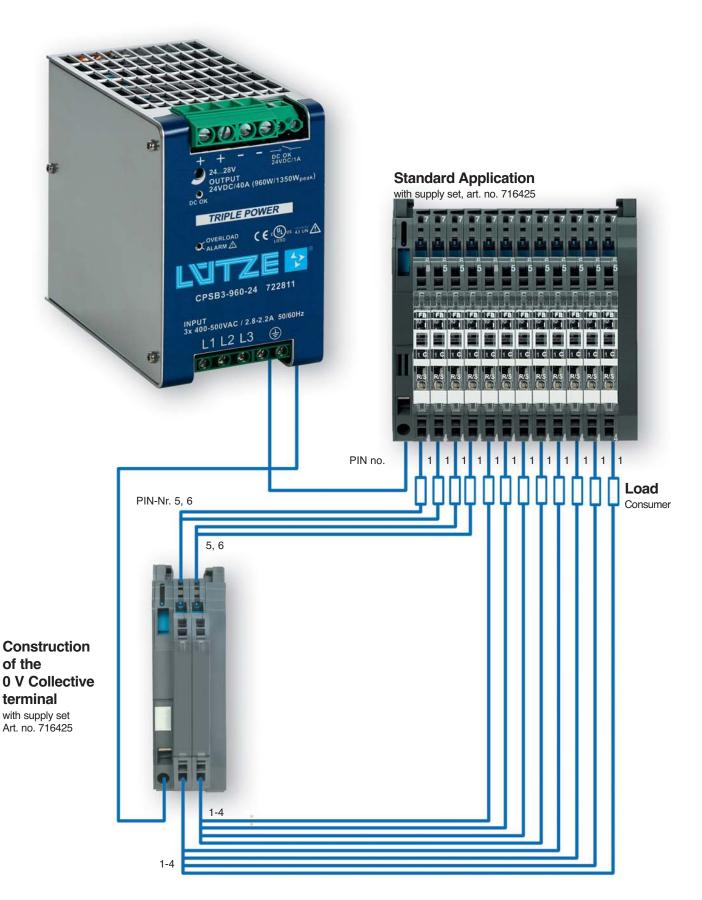
e.g. Switching power supply 722814 DC 24 V, 100 A.



\*Option with fieldbus – Design on request.

### LOCC-Box / LOCC-Box-Net · Application examples

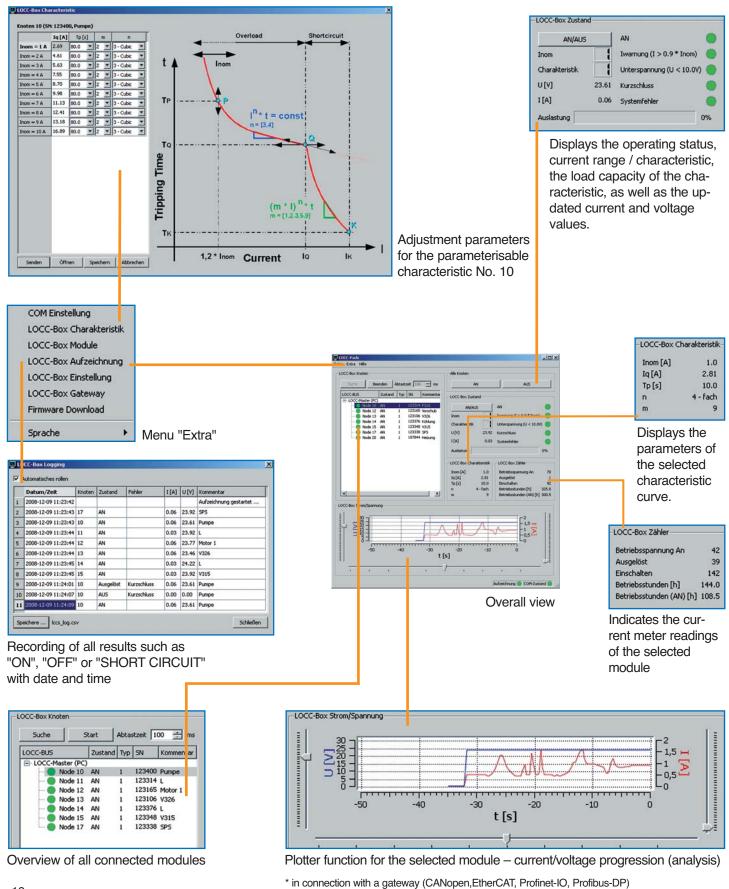
e.g. Switching power supply: 722811 DC 24 V, 40 V DC 24 V, 100 A.



17

### LOCC-Pads\*

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



18

# 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





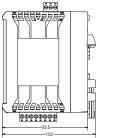
**Control Solutions** 

### Power supply · LCOS-PS controlled, 30 Watt

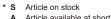
### Primary switchmode power supply, PFC, Single-phase Input: Wide range input AC 88 - 264 V Output: 24 V, adjustable







Description Complete device screw terminal		Part-No.		Туре	P
•	DC 24 V/1.25 A	779001.1213	S*	LCOS-PS-1-30-24	1
Function component screw connect			3	LCO3-F3-1-30-24	1
	DC 24 V/1.25 A	779001.0213	<b>A</b> *	LCOS-PS-1-30-24	1
Complete device Push-in					·
•	DC 24 V/1.25 A	779101.1213	<b>A</b> *	LCOS-PS-1-30-24	1
Function component Push-In (with	out function carr	ier)			
Output voltage/current	DC 24 V/1.25 A	779101.0213	S*	LCOS-PS-1-30-24	1
Input	779001.1213	779001.02	13	779101.1213 779101.0213	;
Number of phases				1	
Rated voltage U <sub>N</sub>		/		3–264 V	
Line frequency				60 Hz	
Rated current I <sub>N</sub>			<u> </u>	2 AC 230 V	
Inrush current				AC 230 V	
Internal fuse				AC 250 V	
External fuse		Mini-ci		oreaker: B 6 A	
Power Factor Correction P.F.C.			0	.59	
Output				24.24	
Rated voltage U <sub>N</sub>				24 V	
Rated current I <sub>N</sub>				25 A	
Max. output current				4 A	
Short-circuit current				-	
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>		[		–27.5 V	
Load regulation				.5 %	
Line regulation			-	.5 %	
Ripple and Noise				mV pp	
Hold up time				0 ms	
Parallel / redundant mode		r		devices	
Efficiency				9 %	
Protection device		Over		ge protection	
Over voltage protection			<3	32 V	
Power loss (nominal operations) max.				-	
Short circuit			HIC	ccup	
Status indication			NI	2007 201 G V	
Status display output Monitoring			n, gi	een ≥21.6 V	
Protection				pen collector	
Switching voltage		DCC		30 V	
Switching current				0.100 A	
Remote input			Παλ.	0.100 A	
control voltage			DC	24 V	
Control current				29 mA	
ON/OFF		11 V - 30		FF, DC 5 V: ON	
General		11 v - 30	, v. O		
Insulation voltage output / ground				.5 kV <sub>eff</sub>	
Insulation voltage input / output				.5 kV <sub>eff</sub>	
Insulation voltage input / output				.5 kV <sub>eff</sub>	
Operation temperature range				+70 °C	
Derating				: -1 W/°C	
Storage temperature range				+85 °C	
MTBF	>50			150000 h: MIL HDBK 217F	
Relative air humidity	~50			not condensing	
Cooling				nvection	
Colour of the housing				le grey	
Housing material				V-0, NFF I2, F2)	
Mounting				e TS35 (EN 60715)	
Application height				00 m or 5 °C/1000 m)	
Installation position		2000 11 (-7.5 1		rtical	
Protection class				220	
Protection class		14		/, PELV)	
Over voltage category			`	5 664-1)	
Degree of polution		1	•	2	
Weight				z kg/piece	
Connection device	$0.20 \text{ mm}^2$			AWG 12 input: 3-pin output: 8-pole	
Dimensions (w × h × d)	0.20 11111 -			0 × 110.0 mm	
Approvals				is in preparation	
	IEC 60950 IEC				)
Standards				1000-6-2 (2005), EN 60100-6-4 (2007 31000-5-5, EN 50178, EN 61558	),



A Article available at short noticeR Article on request

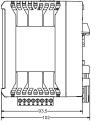


### Power supply · LCOS-PS controlled, 60 Watt

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



### Dimensions



Description		Part-No.		Туре		PU
Complete device screw terminal Output voltage/current	DC 24 V/2.5 A	779001.1313	C*	LCOS-PS-1-60-24		1
1 0			3.	LCOS-PS-1-00-24		-
Function component screw conr	DC 24 V/2.5 A	779001.0313	۸*	LCOS-PS-1-60-24		1
Output voltage/current Complete device Push-in	DC 24 V/2.3 A	119001.0313	Α.	LUU3-F3-1-00-24		1
	DC 24 V/2.5 A	779101.1313	۸*	LCOS-PS-1-60-24		1
Output voltage/current Function component Push-In (wi			A	LCO3-F3-1-00-24		
Output voltage/current	DC 24 V/2.5 A	779101.0313	C*	LCOS-PS-1-60-24		1
Output voltage/current	DC 24 V/2.3 A	119101.0313	3	LCO3-F3-1-00-24		i.
Input	779001.1313	779001.03	13	779101.1313	779101.0313	
Number of phases	110001.1010	110001.00		1	110101.0010	
Rated voltage $U_N$				–264 V		
Line frequency		,		60 Hz		
Rated current I <sub>N</sub>		0.60		AC 230 V		
Inrush current				AC 230 V		
Internal fuse			- U	C 250 V		
External fuse				oreaker: B 6 A		
Power Factor Correction P.F.C.		Will II-Ch		1.6		
Output			, c			
Rated voltage U <sub>N</sub>			DC	24 V		
Rated current I <sub>N</sub>				24 V 5 A		
Max. output current				5 A 8 A		
Short-circuit current				o A _		
Softing range U <sub>out min.</sub> /U <sub>out max.</sub>				– –27.5 V		
		L		-27.5 V .5 %		
Load regulation				5 % 5 %		
Line regulation			-			
Ripple and Noise Hold up time				mV pp ) ms		
Parallel / redundant mode						
		11		devices		
Efficiency		0				
Protection device		Over		ge protection		
Over voltage protection			< 3	2 V		
Power loss (nominal operations) max.				-		
Short circuit			Цiz	cup		
Status indication			T III	Joup		
Status display output			N ar	een ≥21.6 V		
Monitoring		DOC	n, gi	CON 221.0 V		
Protection		DC C	N or	en collector		
Switching voltage		000		30 V		
Switching current		r		0.100 A		
Remote input		1	nax.	J. 100 A		
control voltage			DC	24 V		
Control current				9 mA		
ON/OFF		11 \/ 30		FF, DC 5 V: ON		
General		11 V - 30	v. 0	11, DC 5 V. ON		
				5 k)/		
Insulation voltage output / ground Insulation voltage input / output				5 kV <sub>eff</sub> 5 kV <sub>eff</sub>		
Insulation voltage input / ground				5 kV <sub>eff</sub> +70 °C		
Operation temperature range Derating				+70 °C -2 W/°C		
0						
Storage temperature range MTBF	- 50			+85 °C	170	
	>50			150000 h: MIL HDBK 2		
Relative air humidity				not condensing		
Cooling				ivection		
Colour of the housing				le grey		
Housing material		· · ·		V-0, NFF I2, F2)		
Mounting				e TS35 (EN 60715)		
Application height		2000 m (-7.5 \		00 m or 5 °C/1000 m)		
Installation position				tical		
Protection class				20		
Protection class				/, PELV)		
Over voltage category			· ·	664-1)		
Degree of polution				2		
Weight	0.00			kg/piece		
Connection device	0.20 mm <sup>2</sup> –			AWG 12 input: 3-pin ou	tput: 8-pole	
Dimensions (w × h × d)				) × 110.0 mm		
Approvals	150 00000			s in preparation		
Standards	IEC 60950, IEC	950, EN 60950,	EN 6	1000-6-2 (2005), EN 60	0100-6-4 (2007),	
	EN 0400	A DIDIALEIOIAA	ENI	1000 E E EN 50470 5	NIG1660	
	EN 6100	0-4-2/3/4/5/6/11,	EN 6	1000-5-5, EN 50178, E	N 61558	



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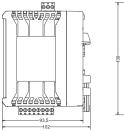
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### Power supply · LCOS-PS controlled, 120 Watt

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



### Dimensions



Description Complete device screw terminal		Part-No.		Туре	PL
Output voltage/current	DC 24 V/5 A	779001.1413	S*	LCOS-PS-1-120-24	1
Function component screw conne	ection (without fund	tion carrier)			
Output voltage/current	DC 24 V/5 A	779001.0413	<b>A</b> *	LCOS-PS-1-120-24	1
Complete device Push-in					
Output voltage/current	DC 24 V/5 A	779101.1413	<b>A</b> *	LCOS-PS-1-120-24	1
Function component Push-In (with		,			
Output voltage/current	DC 24 V/5 A	779101.0413	S*	LCOS-PS-1-120-24	1
Input	779001.1413	779101.04	13	779101.1413 7790	001.0413
Number of phases	110001.1410	775101.04	10	1	,01.0410
Rated voltage U <sub>N</sub>		A	AC 88	–264 V	
Line frequency			47 –	63 Hz	
Rated current I <sub>N</sub>		0.70	) A @	AC 230 V	
Inrush current		<20	A @	AC 230 V	
Internal fuse		T-	4 A/A	C 250 V	
External fuse		Mini-cir		oreaker: B 6 A	
Power Factor Correction P.F.C.			>(	0.96	
Output				<u> </u>	
Rated voltage U <sub>N</sub>				24 V	
Rated current I <sub>N</sub>		. 7			
Max. output current		>7.5 A,	5 S (	D U <sub>out</sub> > 90 %	
Short-circuit current Setting range U <sub>out min.</sub> /U <sub>out max.</sub>			0 22	– –27.5 V	
Load regulation				-27.5 V -2 % @ 5 A	
Line regulation		uown		-2 % @ 5 A 5 %	
Ripple and Noise				mV pp	
Hold up time				) ms	
Parallel / redundant mode	max	. 4 devices / re		ancy via decoupling diode	
Efficiency				3 %	
Protection device		Over	voltag	je protection	
Over voltage protection			3	5 V	
Power loss (nominal operations) max.		g	) W @	) 230 V	
Short circuit	C	urrent limit (ove	erload	I), Hiccup (short-circuit)	
Status indication					
Status display output				een ≥21.6 V	
Manifaring		I <sub>o</sub>	ut > 1	10 % I <sub>N</sub>	
Monitoring Protection			N or	on collector	
Switching voltage		DC O		en collector 30 V	
Switching current		r		0.100 A	
Remote input			nax.	5.10077	
control voltage			DC	24 V	
Control current			DC	5 mA	
ON/OFF		11 V – 30		FF, DC 5 V: ON	
General					
Insulation voltage output / ground			DC 0	5 kV <sub>eff</sub>	
Insulation voltage input / output				0 kV <sub>eff</sub>	
Insulation voltage input / ground			AC 1	5 kV <sub>eff</sub>	
Operation temperature range				+70 °C	
Derating				-4 W/°C	
Storage temperature range				+85 °C	
MTBF	>500			150000 h: MIL HDBK 217F	
Relative air humidity				not condensing	
Cooling				ivection	
Colour of the housing Housing material				le grey V-0, NFF I2, F2)	
Mounting		· ·		e TS35 (EN 60715)	
Application height				0 m	
Installation position				tical	
Protection class				20	
Protection class		1 (		/, PELV)	
Over voltage category				664-1)	
Degree of polution			•	2	
Weight		0	350	kg/piece	
Connection device	0.20 mm <sup>2</sup> – 2			AWG 12 input: 3-pin output: 8	-pole
Dimensions (w × h × d)				) × 110.0 mm	
Approvals				s in preparation	
Standards	IEC 60950, IEC 9	50. EN 60950.	FN 6	1000-6-2 (2005), EN 60100-6	-4 (2007)

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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						
71		-		62		
ř ()	1		32	18	12	
		. [		T .		
	1	4				
	89					45.5 6.8
	۳					1
		P				
	1					

Description		Part-No.		Туре	PU
Screw terminal	DO 041/// 0 1	700707	<b>D</b> +		
Output voltage/current	DC 24 V/1.2 A	722787	R*	CPSF-1-40-24	1
In			0		
Input Deted veltage LL				PSF-1-40-24	
Rated voltage U <sub>N</sub>				C 115/230 V	
Operation voltage range	AC	90-264 V		20–370 V (DC 300 V, UL508)	
Line frequency				47 – 63 Hz	
Rated current I <sub>N</sub>		0.9 A @	AC 1	00 V / 0.5 A @.AC 240 V	
Inrush current				<30 A	
nternal fuse				2 A/AC 250 V	
External fuse		Ν	lini-cir	cuit breaker: <4 A	
Power Factor Correction P.F.C.				>0.6	
Output					
Rated voltage U <sub>N</sub>				DC 24 V	
Rated current I <sub>N</sub>				2 A	
Max. output current			3	5 A @ 24 V	
Short-circuit current				-	
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>				_	
Accuracy				±1 %	
_oad regulation				<0.5 %	
_ine regulation				-	
Rise time				-	
Temperature coefficient				-	
Ripple and Noise				<50 mV pp	
Hold up time		>20 ms @	AC 1	20 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 / vi	a exte	rnal decoupling diodes e.g. 72298	37
Efficiency		>85 % @	AC 1	20 V / >87 % @ AC 240 V	
Heat dissipation		0		<6 W	
Rated over load protection				yes	
Over voltage protection				yes	
Short circuit			Н	iccup Mode	
General					
Switching frequency			api	prox. 110 kHz	
Insulation voltage input / output				AC 3.0 kV <sub>eff</sub>	
Insulation voltage input / ground				s 2, without PE	
Insulation voltage output / ground				s 2, without PE	
Insulation resistance at DC 500 V			Clas	$-M\Omega$	
Operation temperature range		2	<u></u> ۰۰	. +70 °C (Derating)	
Derating		-21		°C: -0.35 W/°C	
				°C +85 °C	
Storage temperature range MTBF	75	0000 6. 00		) / 250000 h: MIL HDBK 217F	
Relative air humidity	/5				
,				RH, not condensing	
Dimensions (w × h × d)	۸:			89.0 × 62.0 mm	
Cooling	Air co	invection, 2		distance top/bottom, 10 mm side	
Housing material		DINE		yl (UL 94 V-0)	
Nounting		DIN rai	i mour	table TS35 (EN 60715)	
Application height					
Installation position				vertical	
Protection class		IF	· ·	C 529, EN 60529)	
Protection class			II (	SELV, PELV)	
Over voltage category					
Degree of polution				2	
Weight				200 kg/piece	
Connection device	Scr	ew termina		mm <sup>2</sup> – 2.5 mm <sup>2</sup> max. 0.56 Nm	
Approvals				us (E249179)	
Standards		N 50178, E	N 615	EN 61000-4-2/3/4/5/6/11, EN 610 58, EN 61000-3-2, EN 50081-1, E 5022 Class B, EN 55011B	
Monitoring		EIN 00022	, ⊏IN 5	5022 Class B, EN 55011B	
Monitoring					
DC ON Control (Rdy)				-	
Switching voltage				-	
Switching current				-	
Switching capacity				-	



Switching capacity Isolation voltage

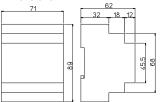


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### Primary switchmode power supply, PFC, Single-phase, Class 2 Input: wide-range input AC 90-264 V, DC 100-345 V Output: DC 24 V, adjustable



### Dimensions



Description		Part-No.		Туре	PU
Screw terminal	DO 04 1//2 A	700700	0.+		4
Output voltage/current	DC 24 V/3 A	722789	S	CPSF-1-80-24	1
Innut			CDG	SF-1-80-24	
Input Rated voltage U <sub>N</sub>				115/230 V	
Operation voltage range	Δ	C 00 264 V		0–345 V (DC 300 V, UL508)	
Line frequency	A	C 90-204 V		7 – 63 Hz	
Rated current I <sub>N</sub>		1100		V / 0.85 A @ AC 240 V	
Inrush current		1.4 A @		<30 A	
Internal fuse				-30 A A/AC 250 V	
External fuse		M		it breaker: C 4 A	
Power Factor Correction P F C		IVI	inii-circu	>0.6	
Output				-0.0	
Rated voltage U <sub>N</sub>			Г	C 24 V	
Rated current I <sub>N</sub>				3.3 A	
Max. output current			11	A @ 24 V	
Short-circuit current			47	20 A	
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>			23	.5-27.5 V	
Accuracy			20	_	
Load regulation				<1 %	
Line regulation				-	
Rise time				_	
Temperature coefficient				_	
Ripple and Noise			< 5	 50 mV pp	
Hold up time		>10 ms @		V / >30 ms @ AC 240 V	
Status indication DC ON LED green		- 10 III3 @	AC 120	yes	
Status indication DC LOW LED red				No	
Parallel / redundant mode	max 2	devices / vi	a extern	al decoupling diodes e.g. 722987	
Efficiency	max. 2			V / >89 % @ AC 240 V	
Heat dissipation		-01 /0 @	710 120	-	
Rated over load protection				yes	
Over voltage protection				yes	
Short circuit			Hic	cup Mode	
General			1110		
Switching frequency			appr	ox. 70 kHz	
Insulation voltage input / output				3.0 kV <sub>eff</sub>	
Insulation voltage input / ground				2, without PE	
Insulation voltage output / ground				2, without PE	
Insulation resistance at DC 500 V			010001	- MΩ	
Operation temperature range		-20 °C	⊦70 °C (	Derating) (55 °C UL 508)	
Derating		-20 0		C: -0.9 W/°C	
Storage temperature range				C +85 °C	
MTBF	7	50000 h SN		250000 h: MIL HDBK 217F	
Relative air humidity				RH, not condensing	
Dimensions ( $w \times h \times d$ )				9.0 × 62.0 mm	
Cooling	Air o			istance top/bottom, 10 mm side	
Housing material	, 0			(UL 94 V-0)	
Mounting		DIN rai		able TS35 (EN 60715)	
Application height		Shiria		-	
Installation position			,	vertical	
Protection class		IP		529, EN 60529)	
Protection class				ELV, PELV)	
Over voltage category			., (01	11	
Degree of polution				2	
Weight			0.25	0 kg/piece	
Connection device	Sc	rew termina		$m^2 - 2.5 \text{ mm}^2 \text{ max. } 0.56 \text{ Nm}$	
Approvals				s (E249179)	
Standards		N 50178, E	60950, E N 61558	:N 61000-4-2/3/4/5/6/11, EN 61000 6, EN 61000-3-2, EN 50081-1, EN 5 222 Class B, EN 55011B	
Monitoring		LIN 33022	, EN 550		
DC ON Control (Rdy)				_	
Switching voltage				_	
Switching current				_	
Switching capacity				_	
ownoning capacity					



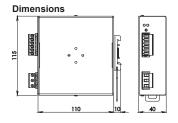
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### Power supply · regulated, 120 W

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

Description





Description	Part-No		Гуре	PU
Screw terminal				
Output voltage/current	DC 24 V/5 A 723500	S*	CPSB1-120-24	1
Input		CPSB1-	120-24	
Rated voltage U <sub>N</sub>		AC 120	/240 V	
Operation voltage range	AC		DC 110–345 V	
Line frequency		47 – 6		
Rated current I <sub>N</sub>	2.1 A @		1.2 A @ AC 240 V	
Inrush current		<40	0	
Internal fuse		T3, 15 A/A		
External fuse	N	,	eaker: C 6 A	
Power Factor Correction P.F.C.		>0		
Output		Ŭ		
Rated voltage U <sub>N</sub>		DC 2	24 V	
Rated current I <sub>N</sub>		5		
Max. output current		7 A, 3		
Short-circuit current				
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>		DC 23-	-28 V	
Accuracy				
Load regulation		<1		
Line regulation		-		
Rise time		_		
Temperature coefficient		_		
Ripple and Noise		<60		
Hold up time	>10 ms @		>60 ms @ AC 230 V	
Status indication DC ON LED green		221.≥21	_	
Status indication DC LOW LED green		≤21.		
Parallel / redundant mode	ves/via exte		ling diode e.g. 722999	
Efficiency	yes/via exte	87 </td <td></td> <td></td>		
Heat dissipation		<18		
Rated over load protection		<10	~~	
Over voltage protection		>DC 33 V	$(1)_{1} = 24 (1)$	
Overtemperature protection		ye		
Short circuit		Hiccup		
General		Thecup	Mode	
Switching frequency		_		
Insulation voltage input / output		DC 4.	2 k\/	
Insulation voltage input / ground		DC 4. DC 2.		
Insulation voltage output / ground		DC 2		
Insulation resistance at DC 500 V		– N		
Operation temperature range	2		°C (Derating)	
Derating	-2	>60 °C: -2		
Storage temperature range		-25 °C		
MTBF		-25 C	+85 C	
Relative air humidity				
2	4	- 	× 110.0 mm	
Dimensions (w × h × d) Cooling			× 110.0 mm nce top/bottom, 20 mm side	
Housing material	All convection, c	Alumi		
	DIN rai		TS35 (EN 60715)	
Mounting	DINTA	i mountable	1535 (EN 60715)	
Application height Installation position				
Protection class	IF	verti	), EN 60529)	
	IF	`	, ,	
Protection class Over voltage category				
8 8 9		2		
Degree of polution		2 0.400 ko		
Weight	Correst to m		g/piece m <sup>2</sup> – 2.5 mm <sup>2</sup> plug-in	
Connection device Approvals	Screw terr	ninal 0.20 m cULus (E		
Standards			EN 61000-6-2, EN 61000-6-4	4,
Monitoring				
DC ON Control (Rdy)		N/O co	Intact	
Switching voltage		AC 300 V /		
Switching current		AC 300 V /		
		300 VA		
Switching canacity				
Switching capacity Isolation voltage		AC 5		

Part-No.

Туре



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PU

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



40	isions		128	
	115			_
		1		_

Description	Part-No. Type	PU
Screw terminal	DC 48 V/2.5 A 722784 <b>R</b> * CPSB1-120-48R	1
Output voltage/current	DC 48 V/2.5 A 722784 R* CPSB1-120-48R	1
1	00001 100 100	
Input	CPSB1-120-48R	
Rated voltage U <sub>N</sub>	AC 120/230 V	
Operation voltage range	AC 90–264 V / DC 110–370 V	
Line frequency	47 – 63 Hz	
Rated current I <sub>N</sub>	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 <sub>N</sub>	DC 48 V	
Rated current I <sub>N</sub>	2.5 A	
Max. output current	4 A, 30 s	
Short-circuit current	15 A, 50 ms	
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>	DC 45–55 V	
Accuracy	-	
Load regulation	<1 %	
Line regulation		
Rise time	_	
Temperature coefficient	-	
Ripple and Noise		
	30 mV >17 ms @ AC 120 V / >72 ms @ AC 230 V	
Hold up time		
Status indication DC ON LED green		
Status indication DC LOW LED red		
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	- ΜΩ	
Operation temperature range	-20 °C +60 °C (Derating)	
	>50 °C: -2.5 W/°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)	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		
Over voltage category		
Degree of polution	2	
Weight	0.400 kg/piece	
Connection device	Screw terminal 0.20 mm <sup>2</sup> – 2.5 mm <sup>2</sup> 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/	
Monitoring	5/6/11	
DC ON Control (Rdy)	N/O contact	
DC ON CONTOI (Ray)		
( ),	AC 300 V / DC 150 V	
Switching voltage		
( ),	AC 300 V / DC 150 V AC/DC 1 A 300 VA / 30 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



40		128	
	115		-

Description	Pa	rt-No.	Туре	PU
Screw terminal, pluggable		2005 0*	CDCD2 100 04	4
Output voltage/current	DC 24 V/5 A 72	2995 <b>S</b> *	CPSB2-120-24	1
I		0.00	D0 400 04	
Input			B2-120-24 200–500 ∨	
Rated voltage U <sub>N</sub>			V / DC 270–725 V	
Operation voltage range Line frequency			– 63 Hz	
Rated current I <sub>N</sub>	1		V / 0.7 A @ AC 500 V	
Inrush current		<u> </u>	V / <40 A @ AC 500 V	
Internal fuse	~2	0 A @ AC 230	V / <40 A @ AC 500 V	
External fuse	Mini-circuit br	aker D6A C	6 A / safety fuse: T 4 A (required)	
Power Factor Correction P.F.C.			>0.55	
Output			-0.00	
Rated voltage U <sub>N</sub>		D	C 24 V	
Rated current I <sub>N</sub>		D	5 A	
Max. output current (limited current)			-	
Max. output current			-	
(HICCUP, 5 sec)		00	– 	
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>		20	-27,5 V	
Accuracy Load regulation			_ <1 %	
Line regulation			-1 /0	
Rise time		9 mc /5 (		
Temperature coefficient		5 ms (3–5	- (@ 400 V	
Ripple and Noise		210	 0 mV pp	
Hold up time	>20		V / >80 ms @ AC 230 V	
Status indication DC ON LED green	-20	-	21.6 V	
Status indication DC LOW LED red			>110 % I <sub>N</sub>	
Parallel / redundant mode	ves/vi		oupling diode e.g. 722987	
Efficiency	y 03/ VI		>86 %	
Heat dissipation			<18 W	
Rated over load protection			yes	
Over voltage protection		U.	ycc mt>36 ∨	
Short circuit			cup Mode	
General		1.100		
Switching frequency			-	
insulation voltage input / output		D	C 4.2 kV	
Insulation voltage input / ground			C 2.2 kV	
nsulation voltage output / ground			C 750 V	
Insulation resistance at DC 500 V			- ΜΩ	
Operation temperature range	-20 °C	C +70 °C (ov	vertemperature protection)	
Derating			C: -4 W/°C	
Storage temperature range			C +85 °C	
MTBF	>500000		>150000 h: MIL HDBK 217F	
Relative air humidity			H, not condensing	
Dimensions ( $w \times h \times d$ )			0.0 × 115.0 mm	
Cooling	Air convec		stance top/bottom, 20 mm side	
Housing material			uminum	
Shock resistance	30 g 6 ms, 20 g 11 ms, 3		on, 18 shocks in total, IEC60068-2-27	2008
Vibration resistance	<b>•</b> • •		g 2 hours/axes X,Y,Z, IEC 60068-2-6	
Vounting			ble TS35 (EN 60715)	
Application height			000 m	
nstallation position		v	rertical	
Protection class		IP20 (IEC	529, EN 60529)	
Protection class			l í	
Over voltage category			Ш	
Degree of polution			2	
Weight			0 kg/piece	
Connection device	Screw termina	0.20 mm <sup>2</sup> – 2	.5 mm <sup>2</sup> AWG 24 – AWG 12 plug-in	
Approvals			; (E249179)	
Standards	IEC 950, EN 6	60950, UL 609	50, EN 61000-6-2, EN 61000-6-4, )-4-2/3/4/5/6/11	
Monitoring				
		N/C	) contact	
DC ON Control (Rdy)			0 contact 10 V / DC 150 V	
Monitoring DC ON Control (Rdy) Switching voltage Switching current		AC/DC 30		



Isolation voltage



AC 500 V

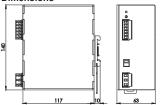
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### Primary switchmode power supply, PFC, Single-phase Input: AC 90–132 V, AC 187–264 V, DC 270–345 V Output: 24 V, adjustable

Description



Dimensions



Description	Part-No.	•	Туре	PU
Screw terminal, pluggable				
Output voltage/current	DC 24 V/10 A 723600	S*	CPSB1-240-24E	1
Input			-240-24E	
Rated voltage U <sub>N</sub>			0 V (manual)	
Operation voltage range	AC 90–132		–264 V / DC 270–345 V	
Line frequency			63 Hz	
Rated current I <sub>N</sub>	4 A @		/ 2 A @ AC 240 V	
Inrush current			0 A	
Internal fuse			AC 250 V	
External fuse	Mini-circuit b		0 A / Safety fuse: T 10 A	
Power Factor Correction P.F.C.		>	0.6	
Output			<u> </u>	
Rated voltage U <sub>N</sub>			24 V	
Rated current I <sub>N</sub>			D A	
Max. output current		13.57	A, 30 s	
Short-circuit current		<b>DO 00</b>	-	
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>			–27.5 V	
Accuracy			-	
Load regulation		<′	1 %	
Line regulation Rise time			-	
			-	
Temperature coefficient		~100		
Ripple and Noise	> C0 ma @		mV pp	
Hold up time			/ >70 ms @ AC 240 V	
Status indication DC ON LED green Status indication DC LOW LED red			1.6 V	
Parallel / redundant mode			1.6 V	
	yes/via exte		pling diode e.g. 722999	
Efficiency			7 % 5 W	
Heat dissipation Rated over load protection		~3	5 VV	
			– ′ (U <sub>A</sub> =24 V)	
Over voltage protection Overtemperature protection			(O <sub>A</sub> -24 V)	
Short circuit			p Mode	
General		Theod	pillode	
Switching frequency			_	
Insulation voltage input / output		DC.4	1.2 kV	
Insulation voltage input / ground			2.2 kV	
Insulation voltage output / ground			750 V	
Insulation resistance at DC 500 V			ΜΩ	
Operation temperature range	-21		) °C (Derating)	
Derating			: -5 W/°C	
Storage temperature range			+85 °C	
MTBF			-	
Relative air humidity			-	
Dimensions (w × h × d)	6	3.0 × 117.0	) × 140.0 mm	
Cooling	Air convection, 5	50 mm dista	ance top/bottom, 20 mm side	
Housing material			ninum	
Mounting	DIN rai	il mountable	e TS35 (EN 60715)	
Application height			_	
Installation position		ver	tical	
Protection class	IF	20 (IEC 52	29, EN 60529)	
Protection class			-	
Over voltage category				
Degree of polution			2	
Weight			kg/piece	
Connection device	Screw tern	ninal 0.20 r	$mm^2 - 2.5 mm^2$ plug-in	
Approvals			E249179)	
Standards			), EN 61000-6-2, EN 61000-6- I-2/3/4/5/6/11	4,
Monitoring				
DC ON Control (Rdy)		N/O d	contact	
Switching voltage			/ DC 150 V	
Switching current			DC 1 A	
Switching capacity			A / 30 W	
Isolation voltage			500 V	

Part-No.

Туре

PU



### 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



Dimensio	ns	_	139	
	1	[		_
	140			

Description	Part-No.	Туре	PU
Screw terminal, pluggable Output voltage/current	DC 48 V/5 A 722786 <b>R</b> *	CPSB1-240-48R	1
Juipui voltage/current	DC 46 V/5 A 722766 R <sup>a</sup>	GPSB1-240-46R	1
nput	CP	SB1-240-48R	
Rated voltage U <sub>N</sub>		) / 230 V (manual)	
Operation voltage range		C 187–264 V, DC 270–345 V	
Line frequency		47 – 63 Hz	
Rated current I <sub>N</sub>		15 V / 2 A @ AC 230 V	
Inrush current	<u> </u>	15 V / 35 A @ AC 230 V	
Internal fuse		3 A/AC 250 V	
External fuse	Mini-circ	uit breaker: C 10 A	
Power Factor Correction P.F.C.		>0.6	
Output			
Rated voltage U <sub>N</sub>		DC 48 V	
Rated current I <sub>N</sub>		5 A	
Max. output current (limited current)		-	
Max. output current		_	
(HICCUP, 5 sec)			
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>		45-55 V	
Accuracy		-	
Load regulation		±1 %	
Line regulation		-	
Rise time		-	
Temperature coefficient		-	
Ripple and Noise		100 mV	
Hold up time	>80 ms @ AC 1	20 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 / v	a external decoupling diodes	
Efficiency		90 %	
Heat dissipation		<34 W	
Rated over load protection		yes	
Over voltage protection		yes	
Short circuit	F	liccup Mode	
General			
Switching frequency	ар	prox. 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		- ΜΩ	
Operation temperature range		. +70 °C (Derating)	
Derating		0 °C: -5 W/°C	
Storage temperature range		°C +85 °C	
MTBF		0 / >150000 h: MIL HDBK 217F	
Relative air humidity		RH, not condensing	
Dimensions (w × h × d)		140.0 × 139.0 mm	
Cooling	Air convection, 100 mn	distance top/bottom, 20 mm side	
Housing material		Aluminum	
Shock resistance		ction, 18 shocks in total, IEC60068-2-27: 200	
Vibration resistance	,	:: 2 g 2 hours/axes X,Y,Z, IEC 60068-2-6: 200	)7
Mounting	DIN rail mou	ntable TS35 (EN 60715)	
Application height		-	
Installation position		vertical	
Protection class	IP20 (IE	C 529, EN 60529)	
Protection class		1	
Over voltage category		III.	
Degree of polution		2	
Weight		720 kg/piece	
Connection device		$1^2 - 2.5 \text{ mm}^2 \text{ plug-in max. } 0.56 \text{ Nm}$	
Approvals		us (E249179)	
Standards	, , ,	EN 61000-4-2/3/4/5/6/11, EN 61000-6-2, 8, EN 50081-1, EN 50082-2, EN 55022 Class	В
Monitoring			
DC ON Control (Rdy)		I/O contact	
Switching voltage		00 V / DC 150 V	
Switching current		AC/DC 1 A	
Switching capacity		00 VA / 30 W	
Isolation voltage		AC 500 V	



\* S Article on stock

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### 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



Dimer 54	isions	5	130	
	115			

Description Screw terminal, pluggable		Part-No.		Туре	PU
Output voltage/current	DC 24 V/10 A	722996	S*	CPSB-123-240-24	1
ouput voitage/ourient	DO 24 WION	122000	Ŭ	01 00-120-240-24	
Input			CPSI	B-123-240-24	
Rated voltage U <sub>N</sub>				200–500 V	
Operation voltage range	AC	187–550 V		50-725 V (UL: DC 300-500 V)	
Line frequency			4	7 – 63 Hz	
Rated current I <sub>N</sub>	1-/	2-phase: 2.2	2 A @ A	AC 220 V / 1.1 A @ AC 500 V,	
	3	-phase: 1.5	A @ A	C 220 V / 0.8 A @ AC 500 V	
Inrush current		<20 A @	AC 23	0 V / <40 A @ AC 500 V	
Internal fuse				-	
External fuse	Mini-circu			C 6 A / safety fuse: T 6.3 A (req	uired)
Power Factor Correction P.F.C.		>0.	6 @ 23	0 V, >0.5 @ 400 V	
Output					
Rated voltage U <sub>N</sub>			1	DC 24 V	
Rated current I <sub>N</sub>				10 A	
Max. output current				15 A, 5 s	
Short-circuit current				38 A, 5 s	
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>			2	23-27,5 V	
Accuracy				-	
Load regulation				<1 %	
Line regulation			4 /-		
Rise time		14	4 ms (5	i–95 %) @ 400 V	
Temperature coefficient				-	
Ripple and Noise		. 45		100 mV pp	
Hold up time		>15 ms @		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				coupling diode e.g. 722987	
Efficiency		•		0 V / >92 % @ AC 400 V	
Heat dissipation		<24 W @	AC 23	0 V, <21 W @ AC 400 V	
Rated over load protection				yes	
Over voltage protection				C 33 V	
Short circuit			HI	ccup Mode	
General				_	
Switching frequency			-	– DC 4.2 kV	
Insulation voltage input / output					
Insulation voltage input / ground				DC 2.2 kV DC 750 V	
Insulation voltage output / ground Insulation resistance at DC 500 V			L	– MΩ	
Operation temperature range		20 °C +6	0 °C (o	ver-temperature protection)	
Derating		-20 C +0		°C: -6 W/°C	
				°C +85 °C	
Storage temperature range MTBF	5	10000 b. SV		/ >150000 h: MIL HDBK 217F	
Relative air humidity	>0			RH, not condensing	
Dimensions (w × h × d)				30.0 × 115.0 mm	
Cooling	Airo			distance top/bottom, 20 mm side	<b>A</b>
Housing material	AILC			Aluminum	
Shock resistance	30 a 6 ms 20 a 11	me 3 shool		tion, 18 shocks in total, IEC600	68-2-27.2008
Vibration resistance				2 g 2 hours/axes X,Y,Z, IEC 60	
	J - 17.0 HZ. ±1.01			able TS35 (EN 60715)	500-2-0. 2007
Mounting Application height			mount	2000 m	
Application neight Installation position				vertical	
Protection class			20 /15	vertical C 529, EN 60529)	
Protection class Protection class		IP IP	20 (IEC	529, EN 60529)	
Over voltage category					
Degree of polution				2	
			0.0		
Weight Connection device	Caraut	minal 0.00		50 kg/piece 2.5 mm <sup>2</sup> AWG 30 – AWG 12 pl	
	Screw te	minai 0.20		2.5 mm² AvvG 30 – AvvG 12 pi is (E249179)	ug-m
Approvals Standards	IEC 60950, EN 6	0950, EN 6		JS (E249179) -2, EN 61000-6-4, EN 61000-4-	2/3/4/5/6/11,
	-,			0-5-5, EN 55011	,
Monitoring				(O contact	
DC ON Control (Rdy)				O contact	
Switching voltage				DC 30 V	
Switching current				DC 1 A	
Switching capacity				30 W	

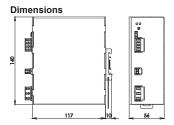


\* S Article on stock

### 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





Description Screw terminal		Part-No.	Туре	PU
	DC 24 V/20 A	723700 <b>S</b> *	CPSB1-480-24E	1
Output voltage/current L	00 24 V/20 A	123100 3	GF 3D 1-400-24L	1
Input		CPS	B1-480-24E	
Rated voltage U <sub>N</sub>			120/240 V	
Operation voltage range			V / DC 110–345 V	
Line frequency			7 – 63 Hz	
Rated current I <sub>N</sub>		-	0 V / 2.4 A @ AC 240 V	
Inrush current		4.077 @770 12	<35 A	
Internal fuse			T8 A	
External fuse		Mini-circuit br	eaker: C 16 A, T 10 A	
Power Factor Correction P.F.C.			90, enabled	
Output		<i>~</i> 0,	so, enabled	
Rated voltage U <sub>N</sub>			DC 24 V	
Rated current I <sub>N</sub>			20 A	
		20 4 5 4		
Max. output current		30 A, 5 S	@ Hiccup Mode	
Short-circuit current			-	
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>			22-29 V	
Accuracy			-	
Load regulation			<1.5 %	
Line regulation			-	
Rise time			-	
Temperature coefficient			-	
Ripple and Noise			150 mV pp	
Hold up time			s @ 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 de	coupling diodes e.g. 72299	99
Efficiency		>93 %	6 @ AC 240 V	
Heat dissipation			<36.5 W	
Rated over load protection			-	
Over voltage protection		>DC 3	3 V (U <sub>A</sub> =24 V)	
Overtemperature protection			yes	
Short circuit		Hi	ccup Mode	
General				
Switching frequency			_	
Insulation voltage input / output		DC 4	l.2 kV, 1 min.	
Insulation voltage input / ground			2.2 kV, 1 min.	
Insulation voltage output / ground			750 V, 1 min.	
Insulation resistance at DC 500 V			- ΜΩ	
Operation temperature range		-20 °C	+70 °C (Derating)	
Derating	>5(		0 120 V, -7.2 W/°C @ 240	V
Storage temperature range	- 00		°C +85 °C	v
MTBF		-20	-	
Relative air humidity				
Dimensions (w × h × d)		EG 0 - 4	– 17.0 × 140.0 mm	
· · · · · · · · · · · · · · · · · · ·	A :=			sido
Cooling	AIF CON		distance top/bottom, 20 mm	ISIUE
Housing material			Aluminum	
Mounting		Din rail mount	able TS35 (EN 60715)	
Application height			-	
Installation position			vertical	
Protection class		IP20 (IE0	C 529, EN 60529)	
Protection class			-	
Over voltage category			III	
Degree of polution			2	
Weight			00 kg/piece	
Connection device		Screw termina	$10.20 \text{ mm}^2 - 2.5 \text{ mm}^2$	
Approvals			ıs (E249179)	
Standards			2, EN 55011 Class B, EN 5 5/6/11, IEC 60068-2-27, EN	
Monitoring				
DC ON Control (Rdy)		N	/O contact	
( ),			800 V / DC 150 V	
Switching voltage				
Switching voltage Switching current Switching capacity		A	C/DC 1 A 0 VA / 30 W	



\* S Article on stock

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### 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



Dime	nsions	140	
	125		
	<b>v</b>		

Description Screw terminal, pluggable		Part-No.		Туре	P
Output voltage/current	DC 24 V/20 A	722801	S*	CPSB-123-480-24	1
Input				123-480-24	
Rated voltage U <sub>N</sub>		One-, two	<ul> <li>and three</li> </ul>	e-phase AC 200-500 V	
Operation voltage range	AC	C 187–550 V	/ DC 250	–725 V (UL: DC 300–500 V)	
Line frequency			47 -	– 63 Hz	
Rated current I <sub>N</sub>	1-/2-phase: 2.9 A	@ AC 200 \		@ AC 500 V, 3-phase: 1.8 A @ AC 200 V / ) 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 <sub>N</sub>			DC	C 24 V	
Rated current I <sub>N</sub>			:	20 A	
Max. output current			28	A, 5 s	
Short-circuit current			:	50 A	
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>			23-	-27,5 V	
Load regulation				<1 %	
Rise time				-	
Temperature coefficient				-	
Ripple and Noise			<10	0 mV pp	
Hold up time				20 ms	
Status indication DC ON LED green				21.6 V	
Status indication DC LOW LED red				>1.1 I <sub>N</sub>	
Parallel / redundant mode		ves/v		al decoupling diode	
Efficiency		, , .		92 %	
Heat dissipation				21 W	
Over voltage protection				C 33 V	
Overtemperature protection				yes	
Short circuit				up Mode	
General			1100	ap	
Insulation voltage input / output			DC	4.2 kV	
Insulation voltage input / ground				2.2 kV	
Insulation voltage output / ground				2.2 KV	
Operation temperature range		-21		60 °C (Derating)	
Derating		-20		: -16 W/°C	
0				+85 °C	
Storage temperature range MTBF	~5	00000 b. SN		>150000 h: MIL HDBK 217F	
	>5			5.0 × 140.0 mm	
Dimensions (w × h × d)	۸:				
Cooling	Alro	convection, 5		tance top/bottom, 20 mm side	
Housing material	20 a 6 ma 20 a 4	1 ma 2 abc -		Iminum	0
Shock resistance				on, 18 shocks in total, IEC60068-2-27: 2008	
Vibration resistance	5 – 17.8 HZ: ±1.6			g 2 hours/axes X,Y,Z, IEC 60068-2-6: 200	1
Mounting		DIN rai		ble TS35 (EN 60715)	
Installation position					
Protection class		IF	20 (IEC 5	529, EN 60529)	
Protection class				1	
Over voltage category					
Degree of polution				2	
Weight				) kg/piece	
Connection device	Screw te	erminal 0.20		5 mm <sup>2</sup> AWG 24 – AWG 12 plug-in	
Approvals				(E249179)	
Standards	UL 508C, IEC			1000-6-2, EN 61000-6-4, EN 55011, EN 51000-4-2/3/4/5/6/11	
Monitoring					
DC ON Control (Rdy)			N/O	contact	
Switching voltage			AC/	DC 30 V	
Switching current			AC	/DC 1 A	
Switching capacity			30 V	A / 30 W	
				500 V	

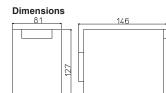


### Primary switchmode power supply, PFC, 3-phase Input: Wide range input AC 340 - 550 V Output: 24 V, 48 V, adjustable

Description

Sorow terminal





Screw terminal						
Output voltage/current	DC 24 V/20 A	722800		CPSB3-500		1
	DC 48 V/10 A	722815	R*	CPSB3-500	)-48	1
lanavé	CDCD	3-500-24			CPSB3-500-48	
Input Rated voltage U <sub>N</sub>	CF3D	3-300-24	3 × AC 4	100–500 V	CF3D3-300-40	
Operation voltage range				340–550 V		
Line frequency				63 Hz		
Rated current I <sub>N</sub>		1.3 A @		/ 1.1 A @ AC	C 500 V	
Inrush current				50 A		
Internal fuse				-		
External fuse	Mir	ni-circuit br	eaker: 3 ×	B 16 A, C 10	A (required)	
Power Factor Correction P.F.C.			>	0.6		
Output						
Rated voltage U <sub>N</sub>	DC	24 V			DC 48 V	
Rated current I <sub>N</sub>		0 A			10 A	
Max. output current (limited current)	2	2 A			11 A	
Max. output current	3	0 A			15 A	
(HICCUP, 5 sec)	0.4	00.1/				
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>	24-	-28 V			45-55 V	
Accuracy				- 1 %		
Load regulation Line regulation			<	1 70		
Rise time				_		
Temperature coefficient				-		
Ripple and Noise	100	mV pp			<100 mV pp	
Hold up time	100	44.	>20 ms @	) AC 400 V	···· ··· · ···	
Status indication DC ON LED green				1.6 V		
Status indication DC LOW LED red			≤2	1.6 V		
Parallel / redundant mode	max. 2 devices / via	a external d	lecoupling	max. 4 devi	ces / via external decoupling	
	diodes e	.g. 722987		d	iodes e.g. 722987	
Efficiency			>94 % @	) AC 400 V		
Heat dissipation	<30 W @	) AC 380 V	/	<	15 W @ AC 380 V	
Rated over load protection			,	es		
Over voltage protection			,	res		
Short circuit		Hie	ccup Mode	e / Current lim	hit	
General						
Switching frequency				70-110 kHz		
Insulation voltage input / output				4.2 kV		
Insulation voltage input / ground				2.2 kV 750 V		
Insulation voltage output / ground Insulation resistance at DC 500 V				750 V MΩ		
Operation temperature range		20		0 °C (Derating	a)	
Derating		-20		-10 W/°C	9)	
Storage temperature range				+85 °C		
MTBF	>50	0000 h <sup>.</sup> SN			L HDBK 217F	
Relative air humidity				, not condens		
Dimensions (w × h × d)				0 × 146.0 mm	•	
Cooling	Air co				om, 20 mm side	
Housing material		, 0		ninum		
Shock resistance	30 g 6 ms, 20 g 11 r	ns, 3 shocl			n total, IEC60068-2-27: 2008	
Vibration resistance					X,Y,Z, IEC 60068-2-6: 2007	
Mounting		DIN rail	mountabl	e TS35 (EN 6	60715)	
Application height				-		
Installation position				rtical		
Protection class		IP	20 (IEC 5	29, EN 60529	)	
Protection class				1		
Over voltage category						
Degree of polution				2		
Weight				kg/piece	0.00.1	
Connection device	Scre	ew termina			max. 0.62 Nm	
Approvals				E249179)		
Standards					61000-6-2, EN 61000-6-4, -2, EN 55022 Class B	
Monitoring			110			
DC ON Control (Rdy)				contact		
Switching voltage				/ DC 150 V		
Switching current						
Switching capacity				A / 30 W		
Isolation voltage			AC	500 V		
		<b>◆</b>		* S A R	Article on stock Article available at short notice Article on request	

Part-No.

Туре

PU



### 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

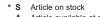


Dimensions

81		146
	127	-
		-

Description Screw terminal		Part-No.		Туре	PU	
	DC 24 V/30 A	722802	S*	CPSB3-720-24	1	
Output voltage/current	DC 24 V/30 A DC 48 V/15 A	722802	R*	CPSB3-720-24 CPSB3-720-48	1	
nput	CPS	B3-720-24		CPSB3-720-48		
Rated voltage U <sub>N</sub>	0-3	DJ-720-24	3 × 10	C 400–500 V		
Operation voltage range				C 340–550 V		
				2 - 63 Hz		
Line frequency		1000				
Rated current I <sub>N</sub> nrush current		1.9 A @	AC 400	V / 1.7 A @ AC 500 V <50 A		
nternal fuse				<50 A		
External fuse	Δ	lini circuit br	ookory 9			
Power Factor Correction P.F.C.	IV	ini-circuit br	eaker: 3	× B 16 A, C 10 A (required)		
				>0.65		
Output	D	0.041/				
Rated voltage U <sub>N</sub>	D	C 24 V		DC 48 V		
Rated current I <sub>N</sub>		30 A		15 A		
Max. output current (limited current)		32 A		16,5 A		
Max. output current		45 A		22,5 A		
HICCUP, 5 sec)				,		
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>	2	4-28 V		45-55 V		
Accuracy				_		
_oad regulation				<1 %		
_ine regulation				-		
Rise time				-		
Temperature coefficient				-		
Ripple and Noise	<15	50 mV pp		<100 mV pp		
Hold up time			>15 ms	s @ 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 / vi	a extern	al decoupling diodes e.g. 72299	9	
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			ccup Mc	ode / Current limit		
General						
Switching frequency			approx	. 70-110 kHz		
Insulation voltage input / output						
<b>3</b> 1 1	DC 4.2 kV DC 2.2 kV					
Insulation voltage input / ground						
Insulation voltage output / ground			D	C 750 V - MΩ		
Insulation resistance at DC 500 V			00.0			
Operation temperature range			-20 *	C +60 °C		
Derating				-		
Storage temperature range				C +85 °C		
MTBF	>500000 h: SN29500 / >150000 h: MIL HDBK 217F					
Relative air humidity				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 1	1 ms, 3 shoc	ks/direct	tion, 18 shocks in total, IEC60068	3-2-27: 2008	
/ibration resistance	5-17.8 Hz: ±1.6	mm, 17.8 –	500 Hz: :	2 g 2 hours/axes X,Y,Z, IEC 6006	68-2-6: 2007	
Vounting		DIN rai	l mounta	able TS35 (EN 60715)		
Application height						
nstallation position				vertical		
Protection class		IF		529, EN 60529)		
Protection class			, -			
Over voltage category						
Degree of polution				2		
Veight			1 20	00 kg/piece		
Connection device	S	crew termina		$m^2 - 6.0 \text{ mm}^2 \text{ max. } 0.62 \text{ Nm}^2$		
Approvals				s (E249179)		
Standards			000-4-2	/3/4/5/6/11, EN 61000-6-2, EN 6		
Monitoring	EN 50178	, EN 01558,	LIN 5008	81-1, EN 50082-2, EN 55022 Cla	a55 D	
DC ON Control (Rdy)				O contact		
Switching voltage				V / DC 150 V		
Switching current				C/DC 1 A		
Switching capacity				VA / 30 W		
Isolation voltage			A	C 500 V		





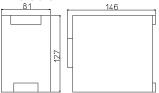
A Article available at short noticeR Article on request

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

Description



Dimensions
81



Screw terminal			.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
Output voltage/current	DC 24 V/40 A 722	2811 <b>S</b> *	CPSB3-960-2	24				
		2812 <b>A</b> *	CPSB3-960-4					
	DC 72 V/13.3 A 722	2813 <b>R</b> *	CPSB3-960-7	'2				
Input	CPSB3-960-24	CPSB3	3-960-48	CPSB3-960-72				
Rated voltage U <sub>N</sub>	3 × AC 400–500 V							
Operation voltage range	3 × AC 340–550 V							
Line frequency	47 – 63 Hz							
Rated current I <sub>N</sub>	2.8	3 A @ AC 400 V	-	500 V				
Inrush current		<5	50 A					
Internal fuse	Mini oire			(required)				
External fuse Power Factor Correction P.F.C.	IVIIII-CIIC	cuit breaker: 3 ×	0.7	(required)				
Output		- (	5.1					
Rated voltage U <sub>N</sub>	DC 24 V	DC	48 V	DC 72 V				
Rated current I <sub>N</sub>	40 A		0 A	13.3 A				
Max. output current (limited current)	44 A		,5 A	14 A				
Max. output current	60 A		, 0 А	20 A				
(HICCUP, 5 sec)								
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>	24-28 V	45-	55 V	72-84 V				
Accuracy			-					
Load regulation		<1	1 %					
Line regulation		-	-					
Rise time Temperature coefficient			-					
Ripple and Noise	~1(	00 mV pp	-	<300 mV pp				
Hold up time		ms @ AC 400 V	/ >15 ms @ A0					
Status indication DC ON LED green	≥21.6 V		3.2 V	≥64.8 V				
Status indication DC LOW LED red	≤21.6 V		3.2 V	≤64.8 V				
Parallel / redundant mode	max. 2 device	es / via external o	decoupling dio	des e.g. 722999				
Efficiency	>91 %		3 %	>94 %				
Heat dissipation	<95 W	<7	2 W	<62 W				
Rated over load protection		> 90°C, a	auto-reset					
Over voltage protection	<33 V		60 V	<94 V				
Short circuit		Hiccup Mode	/ Current limit					
General		_						
Switching frequency			0-110 kHz					
Insulation voltage input / output Insulation voltage input / ground			4.2 kV					
Insulation voltage input / ground			2.2 kV 750 V					
Insulation resistance at DC 500 V			MΩ					
Operation temperature range			) °C (Derating)					
Derating	>50 °	C: -15 W/°C, UL		15 W/°C				
Storage temperature range			+85 °C					
MTBF	>500000	h: SN29500 / >1	150000 h: MIL I	HDBK 217F				
Relative air humidity		20 – 90 % RH,	not condensine	g				
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			ninum					
Shock resistance				total, IEC60068-2-27: 2008				
Vibration resistance		•		(,Y,Z, IEC 60068-2-6: 2007				
Mounting	D	IN rail mountable	3 1535 (EN 60	(15)				
Application height Installation position			- tical					
Protection class	vertical IP20 (IEC 529, EN 60529)							
Protection class			1 					
Over voltage category								
Degree of polution			2					
Weight		1.200	kg/piece					
Connection device	Screw terminal	-		0 mm <sup>2</sup> – 6.0 mm <sup>2</sup>				
	0.20 mm <sup>2</sup> – 10.0 mm <sup>2</sup> max. 0.62 Nm		max. 0.					
Approvals			E249179)					
Standards				000-6-2, EN 61000-6-4, , EN 55022 Class B				
Monitoring			, 00002 2	,				
DC ON Control (Rdy)		N/O c	contact					
			/ DC 150 V					
Switching voltage	AC/DC 1 A							
Switching current			300 VA / 30 W					
Switching current Switching capacity		300 VA	A / 30 W					
Switching current		300 VA	A / 30 W 500 V	Article on stock				

Part-No.

Туре

PU



## 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

Description

Screw terminal

Output voltage/current



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 protecding 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<sub>N</sub> and I<sub>N</sub>
- Hiccup autoreset based on cur-rent 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 bat-tery charging function
- Display and compensation of the voltage drop for long cables Remote On/Off of the output vol-
- 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

- CPSB3-2400-48 DC 48 V/50 A 722816 **S**\* DC 24 V/100 A DC 48 V/50 A Input Rated voltage U<sub>N</sub> 3 × AC 400-500 V AC 340-550 V / DC 520-750 V Operation voltage range Line frequency 47 – 63 Hz Rated current I<sub>N</sub> 4.5 A @ AC 400 V / 3.5 A @ AC 500 V Inrush current < 10 A (active inrush current limitation) Internal fuse Mini-circuit breaker: 3 × C 10 A (required) External fuse 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<sub>N</sub> DC 24 V DC 48 V Rated current I<sub>N</sub> 100 A 50 A Max. output current >150 A, 5 s @ U<sub>out</sub> > 90 % >75 A, 5 s @  $U_{out}$  > 90 % Short-circuit current 150 A, 5 s 75 A, 5 s Setting range Uout min./Uout max DC 11.5-29 V DC 23-56 V Load regulation <1 % < 4.5 S Rise time 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 Hiccup Mode / current limit / constant current Short circuit General Insulation voltage input / output DC 4.2 kV Insulation voltage input / ground DC 2.2 kV Insulation voltage output / ground DC 750 V -20 °C ... +60 °C (Derating) Operation temperature range Derating >45 °C: -40 W/°C Storage temperature range -25 °C ... +85 °C >500000 h: SN29500 / >150000 h: MIL HDBK 217F MTBF 233.0 × 158.0 × 102.0 mm Dimensions (w × h × d) Cooling Air convection, forced cooling >45°C, 80 mm distance top/bottom, 10 mm side Housing material Aluminum Shock resistance 30a 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 Over voltage category Ш Degree of polution Weight 2.800 kg/piece Connection device Screw terminal Input 0.20 mm<sup>2</sup> - 4.0 mm<sup>2</sup> Output 0.20 mm<sup>2</sup> - 35.0  $mm^2$  Auxiliary 0.20  $mm^2 - 1.5 mm^2$ cULus (E249179) Approvals UL 508, IEC 950, EN 60950, EN 55011, EN 61000-4-5, Surge immunity level IV, Standards 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 AC/DC 30 V, 1 A, 30 W Switching capacity AC 500 V Isolation voltage 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) galvanically isolated DC 12 V, 100 mA Auxiliary voltage output NTC Temperature-controlled battery charging (mandatory)

Part-No.

722814 \$

DC 24 V/100 A

Туре

CPSB3-2400-24



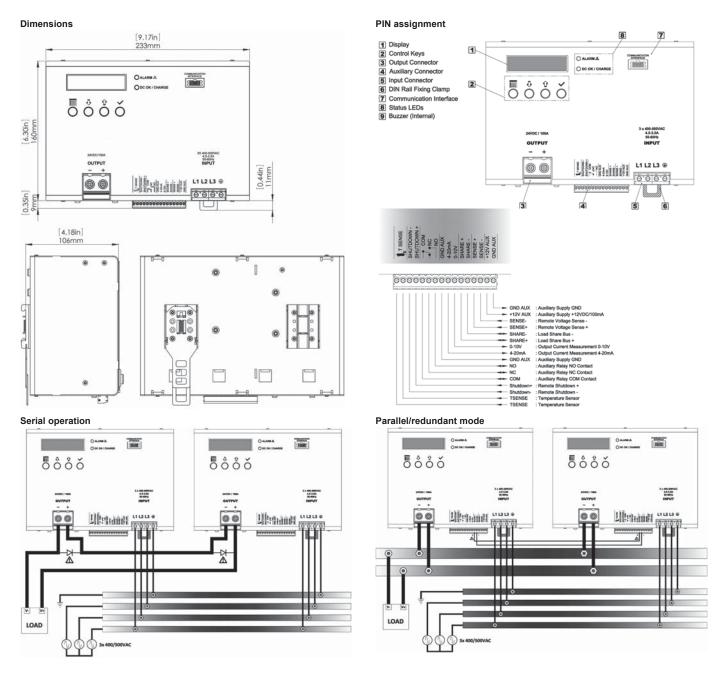
- \* S Article on stock
- Article available at short notice

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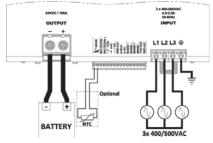
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#### Primary switchmode power supply, PFC, 3-phase Input: Wide range input AC 340 - 550 V Output: DC 24 V, 100 A / DC 48 V, 50 A



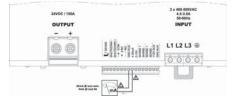
#### **Charging operation**



#### 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

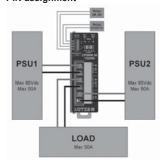




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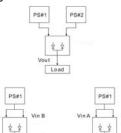
PIN assignment

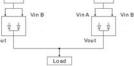
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Use

40





Description		Part-No.		Туре	PU
Screw terminal					
Output voltage/current	DC 12 V-85 V/50 A	722999	S*	CPSRM50	1
Input			CPS	RM50	
Rated voltage U <sub>N</sub>				_	
Operation voltage range				– 2–85 V	
No. of inputs				2	
Rated current $I_N$				∠ A per input	
Internal fuse			max. 50 F	a per input	
External fuse				-	
				-	
Output					
Rated voltage U <sub>N</sub>				٨	
Rated current I <sub>N</sub>				A	
Max. output current				0 A	
Voltage drop				.2 V	
Inverse voltage				V	
Heat dissipation				10 W	
No-load power				5 W	
Status indication DC ON LED green			,	N2 OK	
Status indication DC ON LED red				ancy error	
Overtemperature protection				10	
Over voltage protection			N	10	
General					
Operation temperature range			-20 °C .	+50 °C	
Derating				-	
Storage temperature range			-25 °C .	+85 °C	
MTBF				-	
Dimensions (w × h × d)		4		) × 110.0 mm	
Cooling				ivection	
Housing material				ninum	
Shock resistance	30 g 6 ms, 20 g 11 m	ns, 3 shocl	ks/direction	i, 18 shocks in total, IEC60068-2-27: 2	2008
Vibration resistance	5 – 17.8 Hz: ±1.6 mr	n, 17.8 – 5	500 Hz: 2 g	2 hours/axes X,Y,Z, IEC 60068-2-6: 2	2007
Mounting		DIN rai	mountable	e TS35 (EN 60715)	
Application height					
Installation position				tical	
Protection class		IP	20 (IEC 52	29, EN 60529)	
Over voltage category				II	
Degree of polution				2	
Weight				kg/piece	
Connection device	Outpu	ut Screw t	erminal plu	g-in 0.20 mm <sup>2</sup> – 16.0 mm <sup>2</sup> g-in 0.20 mm <sup>2</sup> – 16.0 mm <sup>2</sup> ug-in 0.20 mm <sup>2</sup> – 1.5 mm <sup>2</sup>	
Standards			022 Class	B, EN 55024, EN 61000-4-2/3/4/6/8, 04-3	EN
Monitoring					
DC ON Control (Rdy)				contact	
Switching voltage				/ DC 24 V	
Switching current			AC/D	OC 1 A	
Switching capacity			300 VA	A / 30 W	
				100 V	





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

Description



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П			-
L.	<b>•</b>		-

	DC UPS 24 V 723110 <b>S</b> * CNUPS24	1					
Note							
Comments	Suitable for power supply with settable output voltage Load mode with simultaneous charging						
	Integrated battery fuse Deep discharging protection						
Input	Deep discharging protection						
nput 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 <sub>4</sub> )						
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 <sup>2</sup> (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							
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						
Vonitoring							
Monitoring Monitored functions	Battery mode						
Monitored functions	Battery mode						
Monitored functions Number of channels	1						
Monitored functions							

Part-No.

Туре



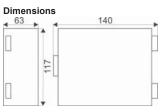
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## DC UPS Battery Management System · 480 W

#### Uninterrupted DC system voltage DC UPS for lead batteries, NiMH (NiCd), Li-ION (LiFePO<sub>4</sub>) Input: wide-range input DC 12 V, DC 24 V, output: max. DC 20 A

Description





	DC UPS 12 V / 24 723100 S* CDCU20 12/24DC UPS	1
	V	
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	Remote On / On	
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 <sub>4</sub> )	
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		
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 <sub>N</sub>	-	
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 <sup>2</sup> ,Grid dimensions 5.08 Auxiliary: 7 pin connector 0.5 mm <sup>2</sup> , 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	~19 \M	
(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	
L	* S Article on stock A Article available at short notice R Article on request	

Part-No.

Туре

PU

# DC UPS Battery Management System · Maintenance-free buffer module

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

Description



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-	-		

Beeenpaen					
	0 ""	700400	0.1	ODUMENU	
	Capacitive energy store	723120	S	CBU150U	1
	SIDIE				
Note					
Comments		Input vol	tade rand	e DC 12 V to DC 85 V	
				ection of DC supply	
	Inexpensi	ive desigr	thanks t	o standard electrolyte capacitors	
			0	al control	
			Com	pact size	
Input					
Input voltage	DC 12	2 V / 24 V		2 V or automatic recognition	
Input current				1ax. 20 A	
Status display input				selected voltage	
Parameterisation		Butto	on Selecti	on of input voltage	
Energy storage					
Memory type				pacitive	
Discharge time at load current max	12 V: 6	600 ms, 24	4 V: 300n	ns, 48 V: 150 ms, 72 V: 75 ms	
Output					
Output voltage				oltage -1 V	
Max. output current			-	20 A	
Ripple and Noise		<2	<u> </u>	) DC 24 V, 20 A	
Short circuit				abled	
Protection device			•	protection, active	
Status display output		green LE	ED: DC O	K, red LED: Overload	
General					
Housing material				minum	
Protection class				IP20	
Dimensions (w × h × d)		6	3.0 × 140	.0 × 117.0 mm	
Mounting				ole TS35 (EN 60715)	
Installation position				distance to other devices	
Connection device	PI	ug-in scre		al 2.5 mm <sup>2</sup> (AWG 24–12)	
Operation temperature range				+70 °C	
Storage temperature range			-20 °C	+82 °C	
Weight				kg/piece	
Cooling				onvection	
Relative air humidity				t condensing	
Insulation voltage input / ground			0.	75 kV	
Approvals				(E249179)	
Standards			UL 508, 0	CE, EN 55011	
Monitoring					
Number of channels				2	
Switching voltage				C 12 V	
Switching current			D	C 1 A	
Contact type			N/O	contact	

Part-No.

Туре

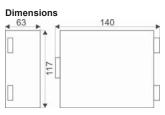
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# DC UPS Battery Management System · Lead acid battery housing

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





Description		Part-No.		Туре	PU
	D // 1 .	700445		010000	
	Battery housing without battery	723115	A^	CNBP30	1
Note					
Comments		Quitable for		nd DC24V applications	
Comments				elf-healing fuse	
Energy storage					
Memory type		2× lea	d batteries	s 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		1	5 A, auton	natic resetting	
Deep discharge protection				-	
General					
Housing material			Alur	ninum	
Protection class			IP20 (E	N 60529)	
Dimensions (w × h × d)		6	3.0 × 117.	0 × 140.0 mm	
Mounting		DIN rai	mountabl	e TS35 (EN 60715)	
Installation position		vertical, with	n 20 mm d	istance to other devices	
Connection device		Connector v	vith screws	s: 2.5 mm <sup>2</sup> (AWG 24–12)	
Operation temperature range			-20 °C	+40 °C	
Storage temperature range			-20 °C	+40 °C	
Configured weight max.			1.2 k	g/piece	
Cooling			free co	nvection	
Relative air humidity			95 % not	condensing	
Insulation voltage input / ground			0.5 k\	/, 1 min.	
Over voltage category				II	
Degree of polution			2 (IEC	C 664-1)	
Approvals				-	
Standards				_	



\* S Article on stock

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# **DELTA Power Supplies**



# **DELTA Series**

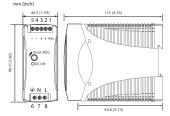
- One- and three-phase
- 30 W to 960 W
- Parallel operation
- · Overload and short circuit protection
- · Redundant operation with integrated diodes
- High efficiency
- Protection class IP20
- UL Listed
- Class 1 Div.2, A, B, C, D, T4
- Economical

#### 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

Description



#### Dimensions



Description	Par	τ-NO.	Гуре		PU
Screw terminal					
Output voltage/current	DC 5 V/6 A 722	2763 <b>S</b> *	DRA30-5A		1
		2768 <b>S</b> *	DRA30-12A		1
	DC 24 V/1.25 A 722	2753 <b>S</b> *	DRA30-24A		1
Input	DRA30-5A		A30-12A	DRA30-24A	
Rated voltage U <sub>N</sub>		AC 1	100–240 V		
Operation voltage range		AC 85–264	V / DC 90–375 V		
Line frequency		47	′ – 63 Hz		
Rated current I <sub>N</sub>	360 m	nA @ AC 115	V / 190 mA @ AC 230	) V	
Inrush current	20	A @ AC 115	V / 40 A @ AC 230 V		
Internal fuse		-	A/AC 250 V		
External fuse			it breaker: B 4 A		
Power Factor Correction P.F.C.			-		
Output					
Rated voltage U <sub>N</sub>	DC 5V	<b></b>	IC 12 V	DC 24 V	
		D			
Rated current I <sub>N</sub>	6 A		2.5 A	1.25 A	
Max. output current			-		
Short-circuit current			-		
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>	5.0-5.5 V	1	I2-14 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			V / 30 ms @ 230 V		
-	≥4 V	-	≥9.6 V	≥19.2 V	
Status indication DC ON LED green Status indication DC LOW LED red	≥4 V		29.0 V	219.2 V	
			-		
Parallel / redundant mode		s / via extern	al decoupling diodes e	0	
Efficiency	79 %		84 %	86 %	
Heat dissipation	8.5 W @ AC 230 V	5.6 W	•	.5 W @ AC 230 V	
Rated over load protection	120–136 %		110–140 %	1	
Over voltage protection		12	5–137 %		
Short circuit		Hic	cup Mode		
General					
Switching frequency		appr	ox. 80 kHz		
Insulation voltage input / output			C 4.2 kV		
Insulation voltage input / ground			C 2.1 kV		
Insulation voltage output / ground			C 700 V		
Insulation resistance at DC 500 V			100 MΩ		
Operation temperature range			⊦70 °C (Derating)		
Derating	Ca		%/°C starting at 60 °C		
Storage temperature range		-25 °(	C +85 °C		
MTBF	551000 h	5	82000 h	588000 h	
Relative air humidity		20 – 95 % R	RH, not condensing		
Dimensions (w $\times$ h $\times$ d)		40.5 × 90	0.0 × 115.0 mm		
Cooling	Air co		mm clearance all-rour	nd	
Housing material		,	Plastic		
Mounting			able TS35 (EN 60715)		
<u> </u>					
Application height			2000 m vertical		
Installation position					
Protection class			IP20		
Protection class			<u> </u>		
Over voltage category			II		
Degree of polution			2		
Weight		0.29	0 kg/piece		
Connection device	Screw ter		m <sup>2</sup> – 2.5 mm <sup>2</sup> max. 0.	56 Nm	
Approvals			s (E249179)		
Standards		Class 2, EN 6 61000-3-3, EN 000-4-4, EN 6	· /	2, EN 61000-4-2,	
Monitoring					
Monitoring		O	n Collector		
DC ON Control (Rdy)			n Collector		
DC ON Control (Rdy) Switching voltage		C	DC 24 V		
DC ON Control (Rdy)		C			

Part-No.

Туре





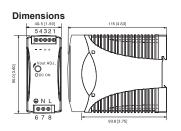
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PU

## 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





Description	Part-	No.	Туре	PU
Screw terminal Output voltage/current	DC 5 V/10 A 7227	64 <b>R</b> *	DRA60-05A	1
Supur voltage/current	DC J V/IOA 1221	04 <b>K</b>	DIA00-03A	1
Input		DI	RA60-05A	
Rated voltage U <sub>N</sub>		AC	100–240 V	
Operation voltage range			4 V / DC 90–375 V	
Line frequency		4	7 – 63 Hz	
Rated current I <sub>N</sub>	550 m/		5 V / 280 mA @ AC 230 V	
Inrush current		-	5 V / 40 A @ AC 230 V	
Internal fuse		-	A/AC 250 V	
External fuse	N	ini-circuit b	oreaker: B 4 A, C 2 A	
Power Factor Correction P.F.C.			_	
Output				
Rated voltage U <sub>N</sub>			DC 5V	
Rated current I <sub>N</sub>			10 A	
Max. output current			_	
Short-circuit current			_	
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>		Ę	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 @ 11	5 V / 30 ms @ 230 V	
Status indication DC ON LED green		-	≥4 V	
Status indication DC LOW LED red			-	
Parallel / redundant mode	max. 2 d	evices / via	external decoupling diodes	
Efficiency			79 %	
Heat dissipation		12.5 V	V @ AC 230 V	
Rated over load protection		11	10–150 %	
Over voltage protection		12	20–136 %	
Short circuit		Hie	ccup Mode	
General			·	
Switching frequency		app	rox. 80 kHz	
Insulation voltage input / output		D	OC 4.2 kV	
Insulation voltage input / ground		C	OC 2.1 kV	
Insulation voltage output / ground		0	DC 700 V	
Insulation resistance at DC 500 V			100 MΩ	
Operation temperature range		-25 °C	+70 °C (Derating)	
Derating	Ca	pacity: -2.5	%/°C starting at 60 °C	
Storage temperature range		-25 °	°C +85 °C	
MTBF		4	198000 h	
Relative air humidity		20 – 90 % I	RH, not condensing	
Dimensions (w × h × d)		40.5 × 9	0.0 × 115.0 mm	
Cooling	Air co	vection, 2	5 mm clearance all-round	
Housing material			Plastic	
Mounting	DIN	rail mount	able TS35 (EN 60715)	
Application height			2000 m	
Installation position			vertical	
Protection class			IP20	
Protection class			1	
Over voltage category			II	
Degree of polution			2	
Weight			40 kg/piece	
Connection device	Screw tern		$nm^2 - 2.5 mm^2 max. 0.56 Nm$	
Approvals			ıs (E249179)	
Standards	EN 61000-3-3, EN 55	024, EN 6	00-6-3, EN 55022 Class B, EN 1000-6-2, EN 61000-4-2, EN 6 61000-4-6, EN 61000-4-8, EN	1000-4-3,
Monitoring		, LN	5.555 F 0, EN 01000-4-0, EN	5.000 <del>-</del> 11
DC ON Control (Rdy)			_	
Switching voltage			_	
Switching current			_	
Switching capacity			-	
			_	



## Power supply · regulated, 60 W

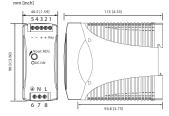
#### Primary switchmode power supply, Single-phase, Class 2 Input: wide-range input AC 85-264 V, DC 90-375 V Output: 12 V / 24 V, adjustable

Description

Screw terminal



#### Dimensions



Screw terminal						
Output voltage/current	DC 12 V/5 A	722769		DRA60-12A		1
	DC 24 V/2.5 A	722754	S*	DRA60-24A		1
Input	DR	60-12A			DRA60-24A	
Rated voltage U <sub>N</sub>	DIG	100-124	A	C 100–240 V	DIA00-24A	
Operation voltage range		AC		64 V / DC 90–375 \	/	
Line frequency				47 – 63 Hz		
Rated current I <sub>N</sub>		690 mA @	AC 1	15 V / 360 mA @ A	C 230 V	
Inrush current		20 A @	AC 1	15 V / 40 A @ AC 2	230 V	
Internal fuse			Τź	2 A/AC 250 V		
External fuse		N	ini-cir	cuit breaker: B 6 A		
Power Factor Correction P.F.C.				-		
Output						
Rated voltage U <sub>N</sub>		2 12 V			DC 24 V	
Rated current I <sub>N</sub>		5 A			2.5 A	
Max. output current				-		
Short-circuit current	10			-	04.00.1/	
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>	12	2-14 V		±1 %	24-28 V	
Accuracy 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 m	s @ 1	15 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 / vi	a exte	rnal decoupling dio	des e.g. 722987	
Efficiency		36 %			89 %	
Heat dissipation	9 A @	AC 230 V			3 W @ AC 230 V	
Rated over load protection				110-150 %		
Over voltage protection				125–138 %		
Short circuit General			F	liccup Mode		
Switching frequency			20	prox. 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		-2	5 °C	. +70 °C (Derating)	I	
Derating				5 %/°C starting at 6		
Storage temperature range				°C +85 °C		
MTBF	50	4000 h			520000 h	
Relative air humidity		20 -	- 90 %	RH, not condensir	ıg	
Dimensions (w × h × d)				90.0 × 115.0 mm		
Cooling		Air conve	ction, 2	25 mm clearance a	ll-round	
Housing material				Plastic	>	
Mounting		DIN rai	l mour	ntable TS35 (EN 60	(715)	
Application height				2000 m		
Installation position				vertical		
Protection class Protection class				IP20		
Over voltage category				1		
Degree of polution				2		
Weight			0	340 kg/piece		
Connection device	Sc	rew termina		$mm^2 - 2.5 mm^2 m$	ax 0.56 Nm	
Approvals				us (E249179)		
Standards	EN 61000-6-3, EN 61000-6-2,	EN 55022 ( EN 61000-4	ss 2, I Class I 1-2, El	EN 60950-1, ÉN 61 3, EN 61000-3-2, E	558-1, EN 61558-2-17 N 61000-3-3, EN 5502 1000-4-4, EN 61000-4- 000-4-11	24,
Monitoring				, ,		
DC ON Control (Rdy)			O	pen Collector		
Switching voltage				DC 24 V		
Switching current				≤35 mA		
Switching capacity				-		
Isolation voltage				none		

Part-No.

Туре

PU



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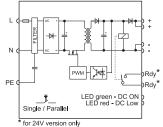
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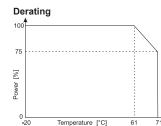
#### Primary switchmode power supply, PFC, Single-phase Input: wide-range input AC 90-132 V, AC 186-264 V, DC 210-370 V Output: 12 V / 24 V / 48 V, adjustable



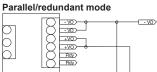
#### Dimensions 6 ← 1 000000000 DC OUTPUT 1[]+++My 116.6 [4.59] 7.0 [0.3] OVout ADJ. ..6 [4.87] 3 [5.63] EE ⊕ C€ DRAN 120 U.L.N. <u> 영 영 명</u> 63.2 [2.49] 7---+9

**PIN** assignment

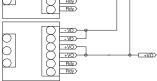




Temperature [°C]



71 61



		Part-No.	Туре		PU	
Screw terminal, pluggable Output voltage/current	DC 12 V/10 A 7	22770 <b>A</b> *	DRAN120-12B		1	
ouput ronago, ourronn		22758 <b>S</b> *	DRAN120-24B		1	
		22777 <b>R</b> *	DRAN120-48B		1	
Input	DRAN120-12B	DR	AN120-24B	DRAN120-48B		
Rated voltage U <sub>N</sub>			230 V (auto select)			
Operation voltage range	AC 9	90–132 V / AC	186–264 V / DC 210–	370 V		
Line frequency		4	7 – 63 Hz			
Rated current I <sub>N</sub>	1.	25 A @ AC 11	5 V / 0.63 A @ AC 23	0 V		
Inrush current		24 A @ AC 11	5 V / 48 A @ AC 230	V		
Internal fuse		T3, 1	5 A/AC 250 V			
External fuse		Mini-circ	uit breaker: B 6 A			
Power Factor Correction P.F.C.			0.7			
Output						
Rated voltage U <sub>N</sub>	DC 12 V		DC 24 V	DC 48 V		
Rated current I <sub>N</sub>	10 A		5 A	2.5 A		
Max. output current			-			
Short-circuit current			-			
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>	11.4-14.5 V	2	2.5/28.5 V	45-55 V		
Accuracy			±1 %			
Load regulation		Single ±1	%, Parallel ±5 %			
Line regulation		5 -	±0.5 %			
Rise time			1 s			
Temperature coefficient		+(	).03 % / °C			
Ripple and Noise		20	50 mV			
Hold up time		25 ms @ 11	5 V / 30 ms @ 230 V			
Status indication DC ON LED green	≥10–11.2 V	<u> </u>	7.6–19.4 V	≥37–43 V		
Status indication DC LOW LED red			7.6–19.4 V	≤37–43 V		
Parallel / redundant mode			ad current, manual sv			
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	2477 @ 770 200 V		05–125 %	10 // @ //0 200 V		
Over voltage protection			25–145 %			
Short circuit			urrent limit			
General		C				
Switching frequency		0.00	orox. 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 100 MΩ			
Insulation resistance at DC 500 V						
Operation temperature range			+70 °C (Derating)	<b>`</b>		
Derating			%/°C starting at 60 °C	J		
Storage temperature range	4400001		°C +85 °C	4000001		
MTBF	440000 h		450000 h	482000 h		
Relative air humidity			RH, not condensing			
Dimensions (w × h × d)			42.0 × 116.0 mm			
Cooling	Air	r convection, 2	5 mm clearance all-ro	und		
Housing material			Metal			
Mounting		DIN rail mount	table TS35 (EN 60715	)		
Application height			2000 m			
Installation position			vertical			
Protection class			IP20			
Protection class			1			
Over voltage category			II			
			2			
Degree of polution						
Degree of polution Weight			( of 2   1			
Degree of polution Weight Connection device	0.920 kg/piece Screw terminal 0.20 mm <sup>2</sup> – 2.5 mm <sup>2</sup> plug-in max. 0.56 Nm 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					
Degree of polution Weight	UL 508 listed, UL 6 EN 61000-3-2, EN 6	60950-1, EN 60 1000-3-3, EN 6	0950-1, EN 61000-6-3 61000-6-2, EN 61000-	, EN 55022 Class B, 6-3 Class I, EN 55024		
Degree of polution Weight Connection device Approvals	UL 508 listed, UL 6 EN 61000-3-2, EN 6	60950-1, EN 60 1000-3-3, EN 6	950-1, EN 61000-6-3	, EN 55022 Class B, 6-3 Class I, EN 55024		
Degree of polution Weight Connection device Approvals <b>Monitoring</b>	UL 508 listed, UL 6 EN 61000-3-2, EN 6	60950-1, EN 60 1000-3-3, EN 6 Class I, Divisio	0950-1, EN 61000-6-3 61000-6-2, EN 61000- on 2, Groups A, B, C, I	, EN 55022 Class B, 6-3 Class I, EN 55024		
Degree of polution Weight Connection device Approvals Monitoring DC ON Control (Rdy)	UL 508 listed, UL 6 EN 61000-3-2, EN 6	60950-1, EN 60 1000-3-3, EN 6 Class I, Divisio N	0950-1, EN 61000-6-3 51000-6-2, EN 61000- on 2, Groups A, B, C, I /O contact	, EN 55022 Class B, 6-3 Class I, EN 55024 D		
Degree of polution Weight Connection device Approvals Monitoring DC ON Control (Rdy) Switching voltage	UL 508 listed, UL 6 EN 61000-3-2, EN 6	80950-1, EN 60 1000-3-3, EN 6 Class I, Divisio N	0950-1, EN 61000-6-3 61000-6-2, EN 61000- on 2, Groups A, B, C, I /O contact DC 60 V	, EN 55022 Class B, 6-3 Class I, EN 55024 D		
Degree of polution Weight Connection device Approvals Monitoring DC ON Control (Rdy)	UL 508 listed, UL 6 EN 61000-3-2, EN 6 – –	80950-1, EN 60 1000-3-3, EN 6 Class I, Divisio N	0950-1, EN 61000-6-3 51000-6-2, EN 61000- on 2, Groups A, B, C, I /O contact	, EN 55022 Class B, 6-3 Class I, EN 55024 D – –		



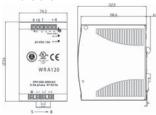
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#### Primary switchmode power supply, PFC, 3-phase Input: wide-range input AC 340-575 V, DC 480-820 V Output: 24 V, adjustable



#### Dimensions



Description		Part-No.		Туре	PU
Screw terminal Output voltage/current	DC 24 V/5 A	722803	Δ*	WRA120-24	1
ouput voltage/current	D0 24 1/3 A	122005	^	WIGA 120-24	
Input			WR	A120-24	
Rated voltage U <sub>N</sub>			3 × AC	380–480 V	
Operation voltage range		3 × AC 3	40-575	V / 3 × DC 480–820 V	
Line frequency				– 63 Hz	
Rated current I <sub>N</sub>		0580		/ / 0.35 A @ AC 500 V	
Inrush current		0.071 @7		10 A	
Internal fuse				A/AC 600 V	
External fuse			- , -	reaker: 3 × B 6 A	
Power Factor Correction P.F.C.		IVIIII	I-CII CUIL D	0.6	
				0.0	
Output			D	24.14	
Rated voltage U <sub>N</sub>			DU	C 24 V	
Rated current I <sub>N</sub>				5 A	
Max. output current				-	
Short-circuit current				-	
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>				5/28.5 V	
Accuracy				1 %	
Load regulation				±1 %	
Line regulation			:	±1 %	
Rise time				1 s	
Temperature coefficient			±0.0	3 % / °C	
Ripple and Noise				00 mV	
Hold up time				. 20 ms	
Status indication DC ON LED green				6–19.4 V	
Status indication DC LOW LED red				6–19.4 V	
Parallel / redundant mode	max 2 da	vicos / vir		l decoupling diodes e.g. 722987	
	IIIdX. 2 UC			39 %	
Heat dissipation	445 405 0/ 1		-	) AC 380 V	
Rated over load protection	115–135 %, temper	rature: dis	whe	on at 100–110°C and automatic activation cool off	n
Over voltage protection				-137 %	
Short circuit			HICC	up Mode	
General					
Switching frequency			appro	ox. 70 kHz	
Insulation voltage input / output			DC	4.2 kV	
Insulation voltage input / ground			DC	2.1 kV	
Insulation voltage output / ground			DC	C 700 V	
Insulation resistance at DC 500 V			1(	00 ΜΩ	
Operation temperature range		-25	5 °C +	71 °C (Derating)	
Derating		Capacity	v: -2.5 %	/°C starting at +61 °C	
Storage temperature range				+85 °C	
MTBF				9000 h	
Relative air humidity		20 -		I, not condensing	
Dimensions ( $w \times h \times d$ )				.6 × 118.8 mm	
				mm clearance all-round	
Cooling	<i>F</i>	an convec	, -		
Housing material		DIN "		Metal	
Mounting		UIN rail		ble TS35 (EN 60715)	
Application height				000 m	
Installation position				ertical	
Protection class				IP20	
Protection class					
Over voltage category				II	
Degree of polution				2	
Weight				) kg/piece	
Connection device	Screv	w termina	l 0.20 mn	n <sup>2</sup> – 4.0 mm <sup>2</sup> max. 0.62 Nm	
Approvals			cULus	(E249179)	
Standards				)-6-3, EN 55022 Class B, EN 61000-3-2, 000-6-2, EN 55024 Class I	
Monitoring		2.000.04	.,		
			N/O	contact	
DC ON Control (Rdy)					
DC ON Control (Rdy) Switching voltage			D	C 60 V	
DC ON Control (Rdy)			D		

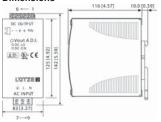


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#### Primary switchmode power supply, PFC, Single-phase Input: wide-range input AC 88-264 V, DC 120-375V Output: 24 V / 48 V, adjustable



Dimensions



Description Screw terminal, pluggable		Part-No.		Туре			PU
Output voltage/current	DC 24 V/10 A	722759	S*	DRA	240-24B		1
	DC 48 V/5 A	722778		DRA2	240-48B		1
Screw terminal							
Output voltage/current	DC 24 V/10 A	722781	S*	DRA2	240-24A		1
n <b>put</b> Rated voltage U <sub>N</sub>	DRA240-24B			DRA240-48E AC 115/230 \		DRA240-24A	
		10		264 V / DC 12			
Operation voltage range		AC	88–2		20-375 V		
Line frequency				47 – 63 Hz	~	. ,	
Rated current I <sub>N</sub>		-		115 V / 12 A	•		
nrush current		30 A @		115 V / 60 A	•	V	
nternal fuse				6, 3 A/AC 250			
External fuse		Mini-c	ircui	t breaker: B ′	10 A, C 6 A		
Power Factor Correction P.F.C.				0.7			
Output							
Rated voltage U <sub>N</sub>	DC 24 V			DC 48 V		DC 24 V	
Rated current I <sub>N</sub>	10 A			5 A		10 A	
Max. output current				-			
Short-circuit current				_			
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>	22.5/28.5 V			47-56 V		22.5/28.5 V	
Accuracy				±1 %			
_oad regulation		Si	ngle	±1 %, Paralle	el ±5 %		
_ine regulation			5.5	±0.5 %			
Rise time				1 s			
Temperature coefficient				±0.03 % / °C			
Ripple and Noise				100 mV			
		25 m	. @		a @ 220.V/		
Hold up time	N17 6 10 1 V	20 11	sw	115 V / 30 m	s @ 230 v	N176 10 4 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	<u> </u>	000	≤37–43 V		≤17.6–19.4 V	
Parallel / redundant mode		3 units at	90%	load current	, manual sv		
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			a	pprox. 40 k⊢	lz		
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		-4(	O°C	+71 °C (D	eratina)		
Derating				.5 %/°C start		0	
Storage temperature range		oupuon		5 °C +85		•	
MTBF	423000 h		-2	437000 h	0	423000 h	
Relative air humidity	+20000 H	20	. 00.	% RH, not co	ndensing	+20000 II	
5				% RH, 101 CO 126.0 × 116	0		
Dimensions (w × h × d)						und	
Cooling	1	HILCOUVE	stion	, 25 mm clea	rance all-rol	unu	
Housing material		DIV.		Metal		<b>N</b>	
Mounting		DIN rai	mo	untable TS35	(EN 60715	)	
Application height				4850 m			
nstallation position				vertical			
Protection class				IP20			
Protection class				I			
Over voltage category				II			
Degree of polution				2			
Weight				I.000 kg/piec	е		
Connection device	5	Screw teri	mina	1		Screw terminal	
	0.20 mi	m <sup>2</sup> – 2.5 r max. 0.56	mm²	plug-in	(	).20 mm <sup>2</sup> – 4.0 mm <sup>2</sup> max. 0.62 Nm	
Approvals				JLus (E24917			
Standards						ss B, EN 61000-3-2, 2, Groups A, B, C, I	
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				-			
solation voltage	DC 500 V			-		DC 500 V	
U							
				* S /	Article on stoc		



#### 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]
191.72
WRA 240
3 - 8 - 1 - 4 89
Consecution of the second seco
PIN assignment
PE (
LED green - DC OK
Single / Lataliei
* for 24V version only
Derating
100
75
[%]
Power [%]
· · · · · · · · · · · · · · · · · · ·

Description		Part-No.	Туре	PU
Screw terminal				
Output voltage/current	DC 24 V/10 A	722804 <b>S</b> *	WRA240-24	1
			<b>BAG40 04</b>	
Input			RA240-24	
Rated voltage U <sub>N</sub>			C 340-500 V	
Operation voltage range			5 V / 3 × DC 480–820 \	/
Line frequency			7 – 63 Hz	
Rated current I <sub>N</sub>		0.85 A @ AC 38	80 V / 0.7 A @ AC 500 Y	V
Inrush current			20 A	
Internal fuse			, 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 <sub>N</sub>		[	DC 24 V	
Rated current I <sub>N</sub>			10 A	
Max. output current			-	
Short-circuit current			-	
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>		22	2.5/28.5 V	
Accuracy			1 %	
Load regulation		Single ±1	%, Parallel ±5 %	
Line regulation			±1 %	
Rise time			1 s	
Temperature coefficient		±0	0.03 % / °C	
Ripple and Noise			100 mV	
Hold up time		m	nin. 20 ms	
Status indication DC ON LED green		≥1	7.6–19.4 V	
Status indication DC LOW LED red		≤1	7.6–19.4 V	
Parallel / redundant mode	max	. 2 units at 90% lo	ad current, manual swi	tch S/P
Efficiency			90 %	
Heat dissipation		30 A	@ AC 380 V	
Rated over load protection	Temperature: Dead		10°C and automatic acti	vation after cooling off
Over voltage protection			25–137 %	3
Short circuit			ccup Mode	
General				
Switching frequency		apr	rox. 25 kHz	
Insulation voltage input / output			DC 4.2 kV	
Insulation voltage input / ground			OC 2.1 kV	
Insulation voltage output / ground			DC 700 V	
Insulation resistance at DC 500 V			100 MΩ	
Operation temperature range			+71 °C (Derating)	
Derating			%/°C starting at +61 °C	
Storage temperature range			°C +85 °C	
MTBF			188000 h	
			RH, not condensing	
Relative air humidity			23.6 × 117.5 mm	
Dimensions (w × h × d)			5 mm clearance all-rou	nd
Cooling		All convection, 2		
Housing material		DIN sellers 1	Metal	
Mounting			able TS35 (EN 60715)	
Application height			3000 m	
Installation position			vertical	
Protection class			IP20	
Protection class			1	
Over voltage category				
Degree of polution			2	
Weight			00 kg/piece	
Connection device			nm <sup>2</sup> – 4.0 mm <sup>2</sup> max. 0.	
Approvals		EN 61000-3-3, EN	950-1, EN 61000-6-3, I 61000-6-2, EN 55024	
Monitoring		Grou	ps A, B, C, D	
Monitoring DC ON Control (Rdy)		NI		
( )/			O contact	
Switching voltage			DC 60 V	
Switching current		ma	ax. 300 mA	
Switching capacity		-	-	
Isolation voltage			DC 500 V	



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Temperature [°C]

Parallel/redundant mode

71

61

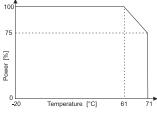
#### Primary switchmode power supply, PFC, Single-phase Input: wide-range input AC 90–264 V, DC 120–370 V Output: 24 V, adjustable



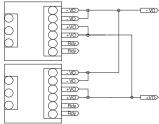
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118/200 VAC 10.5A 474040 24 VDC / 26A	
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<b>J</b>	
- 1 - 1 1 1 1	

\* for 24V version only





Parallel/redundant mode



Description	Part-	NO.	Туре	PU
Screw terminal	DC 24 V/20 A 7227	20 <b>6</b> *		4
Output voltage/current	DC 24 V/20 A 7227	32 <b>S</b> *	DRA480-24A	1
In mar 4			A480-24A	
Input				
Rated voltage U <sub>N</sub>			30 V (auto select)	
Operation voltage range			V / DC 120–370 V	
Line frequency	10.4		-63 Hz	
Rated current I <sub>N</sub>		•	V / 2.45 A @ AC 230 V	
Inrush current	25 A	0	V / 50 A @ AC 230 V	
Internal fuse			A/AC 250 V	
External fuse		Mini-circui	breaker: B 16 A	
Power Factor Correction P.F.C.			0.99	
Output				
Rated voltage U <sub>N</sub>		D	C 24 V	
Rated current I <sub>N</sub>			20 A	
Max. output current			_	
Short-circuit current			-	
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>		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		1	00 mV	
Hold up time		mi	n. 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	s at 90% loa	d current, manual switch S/P	
Efficiency			89 %	
Heat dissipation		63 A (	@ AC 230 V	
Rated over load protection			0–140 %	
Over voltage protection		. –	5–137 %	
Short circuit			rrent limit	
General		Ou		
Switching frequency		annr	ox. 80 kHz	
Insulation voltage input / output			C 4.2 kV	
			C 2.1 kV	
Insulation voltage input / ground			C 700 V	
Insulation voltage output / ground				
Insulation resistance at DC 500 V			00 MΩ	
Operation temperature range	0		-71 °C (Derating)	
Derating	Ca		/°C starting at +61 °C	
Storage temperature range			C +85 °C	
MTBF			03000 h	
Relative air humidity			H, not condensing	
Dimensions (w × h × d)			25.0 × 116.0 mm	
Cooling	Air cor	vection, 25	mm clearance all-round	
Housing material			Metal	
Mounting	DIN		ble TS35 (EN 60715)	
Application height			2000 m	
Installation position		`	vertical	
Protection class			IP20	
Protection class			1	
Over voltage category			II	
Degree of polution			2	
Weight		1.92	0 kg/piece	
Connection device	Screw term	inal 0.20 m	m <sup>2</sup> – 4.0 mm <sup>2</sup> max. 0.62 Nm	
Approvals			950-1, EN 61000-6-3, EN 55022 Class 9-3-3, EN 61000-6-2, EN 55024	В,
Monitoring				
		N/0	D contact	
DC ON Control (Rdy)				
5			0C 60 V	
DC ON Control (Rdy) Switching voltage		C	0C 60 V	
DC ON Control (Rdy)		C		



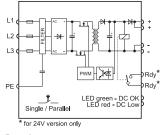
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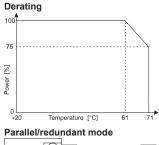
#### Primary switchmode power supply, PFC, 3-phase Input: wide-range input AC 340–576 V, DC 480–820 V Output: 24 V, adjustable

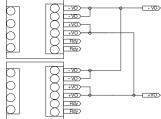


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PIN assignment







Isolation voltage

Description	Part-No.	13	/pe	PU
Screw terminal		C* 14		4
Output voltage/current	DC 24 V/20 A 722805	S^ VV	RA480-24	1
			04	
nput		WRA480		
Rated voltage U <sub>N</sub>	0	3 × AC 380-		
Operation voltage range	3 × AC 3		× DC 480–820 V	
Line frequency		47 – 63		
Rated current I <sub>N</sub>	1.5 A @		2 A @ AC 480 V	
Inrush current		20 A		
Internal fuse		T3, 15 A/pro		
External fuse	Mini-cire		× B 10 A, C 6 A	
Power Factor Correction P.F.C.		0.7		
Output				
Rated voltage U <sub>N</sub>		DC 24	V	
Rated current I <sub>N</sub>		20 A		
Max. output current		-		
Short-circuit current		-		
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>		22.5/28.	5 V	
Accuracy		1 %		
Load regulation	Si	ngle ±1 %, Pa	rallel ±5 %	
Line regulation		±1 %		
Rise time				
Temperature coefficient		±0.03 %	/°C	
Ripple and Noise		100 m		
Hold up time		min. 20		
Status indication DC ON LED green		≥17.6–19		
Status indication DC LOW LED red		≤17.6–19		
Parallel / redundant mode	max 3 units at		rent, manual switch S/P	
	max. 5 units at	90 % 10ad cull		
Efficiency				
Heat dissipation		58 A @ AC		
Rated over load protection		115-135		
Over voltage protection		125–137		
Short circuit	Current limit (C) / H	ICCUP Mode (L	), switching with switch C/D n 3 s and restart after 30 s	
General	HICCup Mode. dea		II 5 S and lestart after 50 S	
Switching frequency		approx. 80		
Insulation voltage input / output		DC 4.2		
Insulation voltage input / ground		DC 2.1		
Insulation voltage output / ground		DC 700		
Insulation resistance at DC 500 V		100 M		
Operation temperature range		5 °C +71 °C	· • •	
Derating	Capacit		tarting at +61 °C	
Storage temperature range		-25 °C +		
MTBF		411000		
Relative air humidity		- 90 % RH, no		
Dimensions (w × h × d)	15	50.0 × 125.0 ×	116.0 mm	
Cooling	Air conveo	ction, 25 mm c	learance all-round	
Housing material		Metal		
Mounting	DIN rai	I mountable T	S35 (EN 60715)	
Application height		3000 r		
Installation position		vertica		
Protection class		IP20		
Protection class				
Over voltage category				
Degree of polution		2		
Weight		1.750 kg/p	niece	
Connection device	Sorow torming		4.0 mm <sup>2</sup> max. 0.62 Nm	
			4.0 mm <sup>2</sup> max. 0.62 Nm EN 61000-6-3, EN 55022 Class B	
Approvals			EN 61000-6-3, EN 55022 Class B EN 61000-6-2, EN 55024	,
Monitoring	LN 01000-3-2, E	14 0 1000-3-3,	LIV 0 1000-0-2, LIV 00024	
DC ON Control (Rdy)		N/O cont	tact	
		DC 60		
Switching voltage		max. 300		
Switching current		max. 300	IIIA	
Switching capacity		-		
Isolation voltage		DC 500	V	



\* S Article on stock

DC 500 V

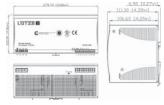
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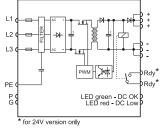
#### Primary switchmode power supply, PFC, 3-phase Input: wide-range input AC 340-576 V, DC 480-820 V Output: 24 V, adjustable



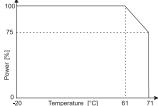
#### Dimensions



PIN assignment





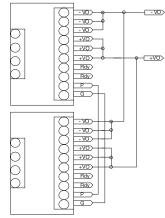


Temperature [°C]

61

Isolation voltage





Description Scrow terminal		Part-No.		Туре	PL
Screw terminal	DC 24 V/40 A	722806	۸*	WRA960-24	1
Output voltage/current	DG 24 V/40 A	122000	A	VVI\A300-24	1
Input			WRA	960-24	
Rated voltage U <sub>N</sub>				400–500 V	
Operation voltage range		3 × AC 3		7/3 × DC 480–820 V	
Line frequency				63 Hz	
Rated current I <sub>N</sub>		2.4 A @		/ / 1.6 A @ AC 480 V	
Inrush current		2.1.7.1 (6)		0 A	
Internal fuse				per Phase	
External fuse		Mini-circ		r: 3 × B 16 A, C 10 A	
Power Factor Correction P.F.C.				0.7	
Output					
Rated voltage U <sub>N</sub>			DC	24 V	
Rated current I <sub>N</sub>				0 A	
Max. output current				_	
Short-circuit current				_	
Setting range U <sub>out min.</sub> /U <sub>out max.</sub>			22.5	 /28.5 V	
Accuracy				%	
Load regulation		C		, Parallel ±5 %	
Line regulation		3	•	1 %	
Rise time				1 % 1 s	
Rise time Temperature coefficient				3 % / °C	
•				) mV	
Ripple and Noise					
Hold up time				5 ms	
Status indication DC ON LED green				–19.4 V –19.4 V	
Status indication DC LOW LED red		+ 0.00/ 1-			
Parallel / redundant mode	max. 2 unit	s at 92% lo		, terminal P and G for current share	
Efficiency			9	2 %	
Heat dissipation			100 1100	-	
Rated over load protection	Temperature: Dea	activation at		C and automatic activation after cooli	ing off
Over voltage protection				-137 %	
Short circuit			HICCL	ip Mode	
General					
Switching frequency				(. 52 kHz	
Insulation voltage input / output				4.2 kV	
Insulation voltage input / ground				2.1 kV	
Insulation voltage output / ground				700 V	
Insulation resistance at DC 500 V				0 ΜΩ	
Operation temperature range		-2	5 °C +7	1 °C (Derating)	
Derating		Capacit	ty: -3.5 %/°	°C starting at +61 °C	
Storage temperature range				+85 °C	
MTBF				2000 h	
Relative air humidity				, not condensing	
Dimensions (w × h × d)		27	76.0 × 125	.0 × 118.0 mm	
Cooling		Air conve	ction, 25 n	nm clearance all-round	
Housing material			N	letal	
Mounting		DIN rai	l mountab	e TS35 (EN 60715)	
Application height				00 m	
Installation position			ve	rtical	
Protection class			I	20	
Protection class				1	
Over voltage category					
Degree of polution				2	
Weight			3.200	_ kg/piece	
Connection device	Scr	ew termina		$^{2}$ – 10.0 mm <sup>2</sup> max. 0.62 Nm	
Approvals	UL 508 listed, I	UL 60950-1	, EN 6095 3-3, EN 6 <sup>-</sup>	0-1, EN 61000-6-3, EN 55022 Class 1000-6-2, EN 55024 Class I, Division A, B, C, D	
Monitoring			Groups	Α, Β, Ο, Β	
-			NI/O	contact	
DC ON Control (Rdy)				contact	
Switching voltage				60 V	
Switching current			max.	300 mA	
Switching capacity				-	
Isolation voltage			DC	500 V	



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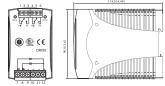
DC 500 V

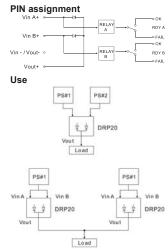
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#### Redundant module 20 A with 2 inputs Potential-free signalling contact and Status LED per input Over- and undervoltage control



#### Dimensions





Description		Part-No.		Туре	PU			
Screw terminal								
Output voltage/current	DC 24 V/20 A	722987	R*	DRP20-24	1			
nput			DPD	20-24				
•				24 V				
Rated voltage U <sub>N</sub>				1–28 V				
Operation voltage range			DC 2	2				
No. of inputs		max. 20 A in total						
Rated current I <sub>N</sub>								
nternal fuse				-				
External fuse				-				
Dutput			0	4.57				
Rated voltage U <sub>N</sub>				4 V				
Rated current I <sub>N</sub>				0 A				
Max. output current		30 A, 5 s @ 24 V						
/oltage drop				.5 V				
nverse voltage			-	0 V				
Heat dissipation				. 10 W				
Status indication DC ON LED green		ON: DC	input A o	r B OK / OFF: Error				
Rated over load protection			1	No				
Over voltage protection			l	No				
General								
Operation temperature range			-5 °C .	+70 °C				
Derating				-				
Storage temperature range			-25 °C	+85 °C				
MTBF			659	1000 h				
Dimensions (w × h × d)		5	4.0 × 90.0	) × 114.0 mm				
Cooling			Air co	nvection				
Housing material			Pl	astic				
Vounting		DIN rail	mountabl	le TS35 (EN 60715)				
Application height		Dirtrai		50 m				
nstallation position				rtical				
Protection class		IP		29, EN 60529)				
Over voltage category				 				
Degree of polution				2				
Weight			0.210	kg/piece				
Connection device	li li	nnut Scre		$10.20 \text{ mm}^2 - 4.0 \text{ mm}^2$				
				$a10.20 \text{ mm}^2 - 4.0 \text{ mm}^2$				
	R	elays Scr	ew termin	al 0.20 mm <sup>2</sup> – 2.5 mm <sup>2</sup>				
Approvals		,		_				
Standards	UL 508 listed, UL 60	950-1, El		Class B, EN 55024, EN 61000-4-2/3 1204-3	/4/6/8,			
Monitoring			20					
DC ON Control (Rdy)				contact per input				
		t voltage	>20 V or <	<30 V, connection 2(5) - 3(6) closed				
	Error: input v	voltage <		0 V, connection 2(5) - 1(4) closed				
Switching voltage			AC 300 V	7 / DC 150 V				
Switching current			AC/I	DC 1 A				
Switching capacity			300 V	A / 30 W				
solation voltage			AC	100 V				





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# 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



# **SkyBLUE**

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



# **SkyBLUE**

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

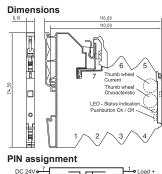
UL508, GL approvals

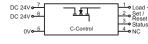
Plug-in functional assemblies



#### 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

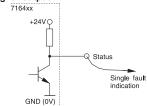


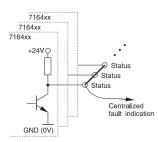












Description		Part-No.		Туре	PL
Spring terminal					
Rated voltage U <sub>N</sub>	DC 12/24 V	716400		LOCC-Box-FB 7-6400	1
	DC 12/24 V	716401		LOCC-Box-FB 7-6401	1
	DC 12/24 V	716401.0	050 <b>S</b>	* LOCC-Box-FB 7-6401	50
Input	LOCC-Box-FB	7-6400		LOCC-Box-FB 7-6401	
Rated voltage U <sub>N</sub>				: 12/24 V	
Operation voltage range			DC	10–30 V	
Rated current I <sub>N</sub>			D	C 10 A	
Supply current		DC 40	0 A over	Cu-rails 10 × 3 mm	
Reverse voltage protection	internal electronics				
Connection type input		ş	screwles	s 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			Ν	/losFet	
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 cur- ves'				
Signal output					
Signal level	DC 12/24 V: oper tage on standby, DC 0 V: er output switch	no error, D ror, D		V: operating voltage on stand rror, output switched off and n	
Switching element		Transistor	, collecto	or with pull-up resistance	
General					
Housing material		PA 6	6.6 (UL 9	4 V-0, NFF I2, F2)	
Mounting	DIN rail mountable TS35 (EN 60715)				
Protection class					
Installation position				any	
Connection device		Spring	terminal	$0.25 \text{ mm}^2 - 2.5 \text{ mm}^2$	
Operation temperature range				C +50 ℃	
Storage temperature range			-40 °C	C +85 ℃	
Dimensions (w × h × d)		8	8.1 × 114	l.5 × 116.0 mm	
Weight			0.12	0 kg/piece	
Approvals				E135145), GL	
Standards	EN 6005		· ·	EN 61000, EN 60947-4-1, EN 5	55022



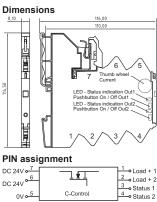


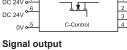
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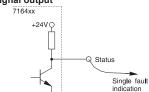
#### Electronic load monitoring up to DC 6 A Two-channel version; adjustable current range: DC 1 A - 6 A **Fixed characteristic**

Description

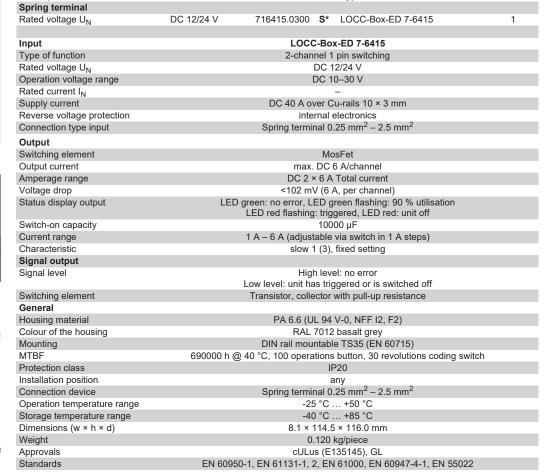






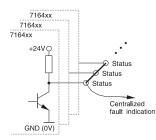


GND (0V)



Part-No.

Туре

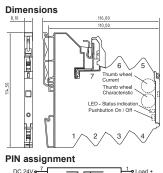




PU

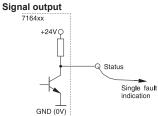
#### Electronic load monitoring up to DC 2 A Single-channel design, Adjustable current range: DC 0.2 A – 2 A Adjustable characteristics, fast, medium, slow

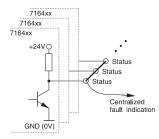




DC 24V • 7 DC 24V • 6 ТŧТ 2 Set / 3 Reset 4 NC 0V•<u>5</u> C-Contro NC

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





Description		Part-No.		Туре	PU			
Spring terminal								
Rated voltage U <sub>N</sub>	DC 12/24 V	716409	S*	LOCC-Box-FB2A 7-6409	1			
Input		L		-FB2A 7-6409				
Rated voltage U <sub>N</sub>				12/24 V				
Operation voltage range		DC 10–32 V						
Rated current I <sub>N</sub>		DC 2 A						
Supply current		DC 40		Cu-rails 10 × 3 mm				
Reverse voltage protection				electronics				
Connection type input		5	screwless	contact slide				
Control input (Set / Reset)								
Signal level		DC	12/24 V a	cc. to EN 61131				
OFF		Pulse with	n falling eo	lge >100 ms, <800 ms				
ON		Pu	lse with fa	lling edge > 1 s				
Output								
Switching element			M	osFet				
Output current	max. DC 2 A							
Voltage drop	<140 mV (2 A)							
Status display output	LED green: operating voltage present, no error							
				or 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				oltage on standby, no error, tched off and manual "OFF"				
Switching element	_	,		with pull-up resistance				
General		Tunoloton	, concotor					
Housing material		PA 6	6 (UL 94	V-0, NFF I2, F2)				
Mounting			· ·	le TS35 (EN 60715)				
Protection class		2		P20				
Installation position				any				
Connection device		Spring		$1.25 \text{ mm}^2 - 2.5 \text{ mm}^2$				
Operation temperature range	-25 °C +50 °C							
Storage temperature range				+75 °C				
Dimensions ( $w \times h \times d$ )		R		5 × 116.0 mm				
Weight		C		kg/piece				
Approvals		cl II ue		), GL in preparation				
Standards	EN 600			V 61000, EN 60947-4-1, EN 5502	22			
Stanuarus	EN 0093	0-1, EN 0113	, ∠, Eľ	N 01000, EIN 00947-4-1, EIN 550	~~			

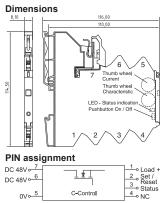


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#### Electronic load monitoring up DC 48 V to 6 A Single-channel design, Adjustable current range: DC 1 A – 6 A Adjustable characteristics, fast, medium, slow 1, -2, -3

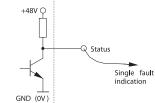












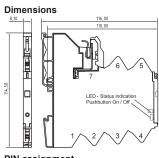
#### 7164xx 7164xx 7164xx ... +48V Q 🔊 Status Status Status Centralized fault indication GND (0V)

Description		Part-No.		Туре	PU		
Spring terminal							
Rated voltage U <sub>N</sub>	DC 48 V	716406	S*	LOCC-Box-FB48 7-6406	1		
Input		LO		B48 7-6406			
Rated voltage U <sub>N</sub>			DC 4				
Operation voltage range			DC 39				
Rated current I <sub>N</sub>			DC				
Supply current				-rails 10 × 3 mm			
Reverse voltage protection			internal el	ectronics			
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			Mos	Fet			
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 (ad	djustable v	ia switch in 1 A steps)			
Characteristic	fast-acting (1	), medium (2), sl	low 1 (3), s curv	low 2 (4), slow 3 (5) see 'characteristic	;		
Current limitation			13.7	5 A			
Signal output							
Signal level				ge on standby, no error, hed off and manual "OFF"			
Switching element				ith pull-up resistance			
General		riditereter,					
Housing material		PA 6.	6 (UL 94 V	′-0, NFF I2, F2)			
Mounting			· ·	TS35 (EN 60715)			
Protection class		Dirtian	IP2	· · · · · ·			
Installation position			an				
Connection device		Spring te		$5 \text{ mm}^2 - 2.5 \text{ mm}^2$			
Operation temperature range		opinig to	-25 °C				
Storage temperature range			-20 °C				
Dimensions (w × h × d)		Q ·		× 116.0 mm			
Weight		0.	0.120 k				
Approvals			cULus (E				
Standards	EN 600	50-1 EN 61131	,	61000, EN 60947-4-1, EN 55022			
Glandalus		50-1, LN 01131	i-i, ∠, ∟IN (	J1000, LIN 00347-4-1, LIN JJUZZ			



#### 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)





**PIN** assignment

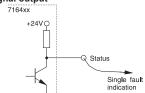
DC 12/24V • 7 DC 12/24V • 6 -• Load + lt 2 o Load + 3 o Status 4 o Load + C-Control 0V•\_\_\_\_

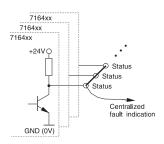
1:	+	Output

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

Signal output

GND (0V)





Description		Part-No.		Туре	PU			
Spring terminal								
Rated voltage U <sub>N</sub>	DC 12/24 V	716407.xxxx	<b>A</b> *	LOCC-Box-EC-I-C	1			
Input		LO	СС-В	ox-EC-I-C				
Rated voltage U <sub>N</sub>		DC 12/24 V						
Operation voltage range		DC 10–30 V						
Rated current I <sub>N</sub>		DC 10 A						
Supply current		DC 40 A over Cu-rails 10 × 3 mm						
Reverse voltage protection		inte	ernal e	electronics				
Connection type input		screv	vless	contact slide				
Control input (Set / Reset)								
Signal level				_				
OFF				-				
ON				_				
Output								
Switching element			Мо	sFet				
Output current		1	nax. [	DC 10 A				
Voltage drop		<	170 m	יע (10 A)				
Status display output		LED areen: operation	atina	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	fast (1), medium (2), slow 1 (3), slow 2 (4), slow 3 (5) (see order code), see 'Cha-						
		ra	cterist	tic curves'				
Signal output								
Signal level				oltage on standby, no error,				
	D	DC 0 V: error, output switched off and manual "OFF"						
Switching element		Transistor, coll	ector	with pull-up resistance				
General								
Housing material		,		V-0, NFF I2, F2)				
Mounting		DIN rail mou		e TS35 (EN 60715)				
Protection class			IF	20				
Installation position				any				
Connection device		Spring term	inal 0.	.25 mm <sup>2</sup> – 2.5 mm <sup>2</sup>				
Operation temperature range				+50 °C				
Storage temperature range		-4	0 °C .	+85 °C				
Dimensions ( $w \times h \times d$ )		8.1 ×	114.5	5 × 116.0 mm				
Weight		C	.120	kg/piece				
Approvals		cL	JLus (	E135145)				
Standards	EN 6095	0-1, EN 61131-1,	2, EN	61000, EN 60947-4-1, EN 55022				
Order code								
7164	07. 2 3 50							

<u>716407. 2</u>	<u>2 3 50</u>
Туре	PU
	00 1 pc.
	50 50 pcs.
Current range	Characteristic
1 1A	1 fast
<b>2</b> 2A	2 medium
3 3A	3 slow-1
:	4 slow-2
0 10A	5 slow-3

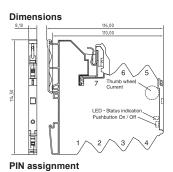


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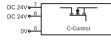
#### Electronic load monitoring up to DC 10 A Single-channel design, Adjustable current range: DC 1 A - 10 A Fixed characteristic: fast, medium, slow 1, -2, -3 (see order code)



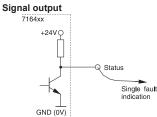


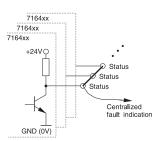
-• Load +

2 Load + 3 Status 4 Load +

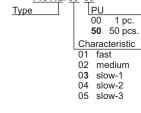


1: Load + 2: Load + 3: Status output 4: Load + 5: 0V 6: + Supply (alternative) 7: + Supply





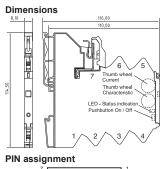
Description		Part-No.		Туре	PU		
Spring terminal							
Rated voltage U <sub>N</sub>	DC 12/24 V	716412.xxxx	<b>A</b> *	LOCC-Box-EC-I-C	1		
Input		LO		ox-EC-I-C			
Rated voltage U <sub>N</sub>			DC 1	2/24 V			
Operation voltage range			DC 1	0–30 V			
Rated current I <sub>N</sub>			DC	10 A			
Supply current		DC 40 A c	ver C	u-rails 10 × 3 mm			
Reverse voltage protection	internal electronics						
Connection type input		screv	vless	contact slide			
Control input (Set / Reset)							
Signal level		DC 12/2	4 V a	cc. to EN 61131			
OFF		Pulse with falli	ng ed	ge >100 ms, <800 ms			
ON		Pulse w	ith fa	lling edge > 1 s			
Output							
Switching element			Mc	osFet			
Output current		1	max. [	DC 10 A			
Voltage drop		<	170 m	ηV (10 A)			
Status display output		LED areen: oper	atina	voltage present, no error			
1 7 1				or in load circuit			
Switch-on capacity			100	00 μF			
Current range		1 A – 10 A (adju	stable	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	2 12/24 V: operat	ina vo	oltage on standby, no error,			
5				ched off and manual "OFF"			
Switching element				with pull-up resistance			
General		,					
Housing material		PA 6.6 (l	JL 94	V-0, NFF I2, F2)			
Mounting		DIN rail mou	untabl	e TS35 (EN 60715)			
Protection class			IF	20			
Installation position			a	any			
Connection device		Spring term	inal 0	$.25 \text{ mm}^2 - 2.5 \text{ mm}^2$			
Operation temperature range				+50 °C			
Storage temperature range		-4	0 °C .	+85 °C			
Dimensions ( $w \times h \times d$ )		8.1 ×	114.5	5 × 116.0 mm			
Weight		(	0.120	kg/piece			
Approvals				E135145)			
Standards	EN 60950		,	61000, EN 60947-4-1, EN 55022	2		
Order code		. ,					
71641	<u>2. 03 50</u>						

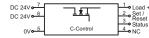




#### Electronic load monitoring up to DC 5 A Single-channel design, Adjustable current range: DC 1 A – 5 A Adjustable characteristics, fast, medium, slow 1

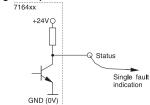


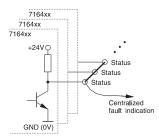




1: + Output 2: Control input (Set/Reset) 3: Status output 4: NC 5: 0V 6: + Supply (alternative) 7: + Supply

Signal output





Description		Part-No.		Туре	PU		
Spring terminal							
Rated voltage U <sub>N</sub>	DC 12/24 V	716408	<b>A</b> *	LOCC-Box-SC 7-6408	1		
Input				x-SC 7-6408			
Rated voltage U <sub>N</sub>				12/24 V			
Operation voltage range				0–30 V			
Rated current I <sub>N</sub>				C 5 A			
Supply current		DC 4		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 a	cc. to EN 61131			
OFF		Pulse with	h falling ed	lge >100 ms, <800 ms			
ON		Pu	lse with fa	lling edge > 1 s			
Output							
Switching element			Mo	osFet			
Output current			max.	DC 5 A			
Voltage drop			<85 n	nV (5 A)			
Status display output				voltage present, no error or in load circuit			
Switch-on capacity			100	00 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	1		
Signal output							
Signal level	C D	C 12/24 V: o C 0 V: error, o	perating vo output swit	oltage on standby, no error, tched off and manual "OFF"			
Switching element		Transistor	, collector	with pull-up resistance			
General							
Housing material		PA 6	6.6 (UL 94	V-0, NFF I2, F2)			
Mounting		DIN rai	l mountabl	le TS35 (EN 60715)			
Protection class			11	20			
Installation position			á	any			
Connection device		Spring	terminal 0	$.25 \text{ mm}^2 - 2.5 \text{ mm}^2$			
Operation temperature range		. 0	-25 °C	+50 °C			
Storage temperature range				+85 °C			
Dimensions (w × h × d)	8.1 × 114.5 × 116.0 mm						
Weight			0.120	kg/piece			
Approvals				E135145)			
Standards	EN 6095	0-1, EN 6113		1 61000, EN 60947-4-1, EN 55	5022		
		,	, ,	,,			



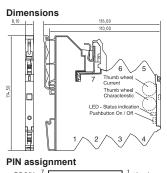


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# Load monitoring · LOCC-Box Class 2

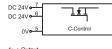
#### Electronic load monitoring up to DC 24 A - DC 4 A Single channel version, adjustable current range, adjustable characteristic with current limitation acc. to NEC class 2





2 Set / 3 Reset 4 NC

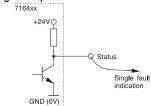
NC

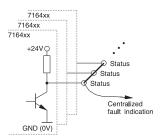






Signal output



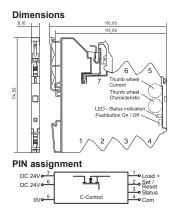


Description		Part-No		Туре	PU			
Spring terminal								
Rated voltage U <sub>N</sub>	DC 12/24 V	716413	S*	LOCC-Box-C2 7-6413	1			
Input			LOCC-B	ox-C2 7-6413				
Rated voltage U <sub>N</sub>				12/24 V				
Operation voltage range				11–30 V				
Rated current I <sub>N</sub>				DC 5 A				
Supply current	DC 5 A DC 40 A over Cu-rails 10 × 3 mm							
Reverse voltage protection		DC 4		al electronics				
0 1				s contact slide				
Connection type input Control input (Set / Reset)			screwies	s contact side				
• • • •		DO	40/04 \/	acc. to EN 61131				
Signal level OFF			,					
				edge >100 ms, <800 ms				
ON		PL	lise with	falling edge > 1 s				
Output								
Switching element				/losFet				
Output current			max	k. DC 5 A				
Voltage drop				-				
Status display output				g voltage present, no error rror in load circuit				
Switch-on capacity			4	700 µF				
Current range		0.5 A – 4 A (	can be s	et via switch in 0.5 A steps)				
Characteristic	fast	(1), medium	(2), slow	1 (3) see 'Characteristic curves'				
Signal output								
Signal level				voltage on standby, no error, vitched off and manual "OFF"				
Switching element		Transisto	, collecto	or with pull-up resistance				
General								
Housing material		PA	6.6 (UL 9	4 V-0, NFF I2, F2)				
Mounting		DIN rai	il mounta	ble TS35 (EN 60715)				
Protection class				IP20				
Installation position				any				
Connection device		Sprina	terminal	$0.25 \text{ mm}^2 - 2.5 \text{ mm}^2$				
Operation temperature range		1		C +50 °C				
Storage temperature range			-40 °0	C +75 °C				
Dimensions ( $w \times h \times d$ )	8.1 × 114.5 × 116.0 mm							
Weight	0.120 kg/piece							
Approvals	ci il us	(E135145)		paration, NEC Class 2 (E170585)				
Standards				EN 61000, EN 60947-4-1, EN 5502				
	2., 0000		. , <u>.</u> , <u>.</u>					



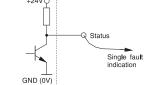
#### Electronic load monitoring up to DC 10 A, with communication, parameterized Single-channel design, Adjustable current range: DC 1 A - 10 A Adjustable characteristics, fast, medium slow 1, -2, -3

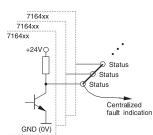












Description		Part-No.		Туре	PU		
Spring terminal							
Rated voltage U <sub>N</sub>	DC 12/24 V	716403	R*	LOCC-Box-Net 7-6403	1		
	DC 12/24 V	716404	R*	LOCC-Box-Net 7-6404	1		
Input	LOCC-E	Box-Net 7-64	03	LOCC-Box-Net 7	-6404		
Rated voltage U <sub>N</sub>			DC	C 12/24 V			
Operation voltage range			DC	: 10–32 V			
Rated current I <sub>N</sub>			C	DC 10 A			
Supply current	DC 40 A over Cu-rails 10 × 3 mm						
Reverse voltage protection			interna	al electronics			
Connection type input			screwles	ss contact slide			
Control input (Set / Reset)							
Signal level		DC 1	2/24 V a	acc. to IEC 61131-2			
OFF			L	ow level			
ON		Hi	gh level	(automatic reset)			
Output							
Switching element			ſ	MosFet			
Output current			max	c. 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				voltage on standby, no error, off, and manual "OFF" (parame			
Switching element				or with pull-up resistance			
General			,				
Housing material		PA	5.6 (UL 9	94 V-0, NFF I2, F2)			
Mounting				able TS35 (EN 60715)			
Protection class		2		IP20			
Installation position				any			
Connection device		Sprina	terminal	$0.25 \text{ mm}^2 - 2.5 \text{ mm}^2$			
Operation temperature range		1		C +50 °C			
Storage temperature range				C +85 °C			
Dimensions ( $w \times h \times d$ )		8		4.5 × 116.0 mm			
Weight				20 kg/piece			
Approvals		cULus		45), GL in preparation			
Standards	EN 6095			EN 61000, EN 60947-4-1, EN	55022		

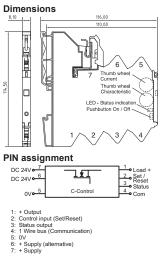


\* S Article on stock

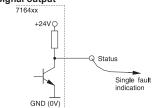
 A Article available at
 R Article on request Article available at short notice

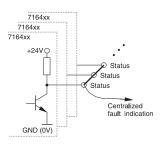
#### Electronic load monitoring up to DC 10 A, with communication Single-channel design, programmable, Adjustable current range: DC 1 A – 10 A Adjustable characteristics, fast, medium, slow 1, -2, -3





Signal output



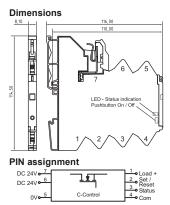


Description		Part-No.		Туре	PU		
Spring terminal							
Rated voltage U <sub>N</sub>	DC 12/24 V	716410 <b>S</b> *		LOCC-Box-Net 7-6410	1		
	DC 12/24 V	716410.0050	S*	LOCC-Box-Net 7-6410	50		
Input		LOCC	-Box	-Net 7-6410			
Rated voltage U <sub>N</sub>		[	DC 12	2/24 V			
Operation voltage range		C	DC 10	)-30 V			
Rated current I <sub>N</sub>	DC 10 A						
Supply current	DC 40 A over Cu-rails 10 × 3 mm						
Reverse voltage protection		inter	nal e	lectronics			
Connection type input		screwl	ess c	contact slide			
Control input (Set / Reset)							
Signal level		DC 12/24 \	/ acc	. to IEC 61131-2			
OFF		Pulse with falling	g edg	ge >100 ms, <800 ms			
ON		Pulse wit	h fall	ing edge > 1 s			
Output							
Switching element			Mos	sFet			
Output current		m	ax. D	OC 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			1000	00 μF			
Current range	1	A – 10 A (adjust	able	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				ltage on standby, no error, and manual "OFF" (parameterized)			
Switching element		Transistor, colle	ctor v	vith pull-up resistance			
General							
Housing material		PA 6.6 (UL	94 \	V-0, NFF I2, F2)			
Mounting		DIN rail mour	ntable	e TS35 (EN 60715)			
Protection class			IP	20			
Installation position			a	ny			
Connection device		Spring termin	al 0.2	25 mm <sup>2</sup> – 2.5 mm <sup>2</sup>			
Operation temperature range		-25	°C	+50 °C			
Storage temperature range		-40	°C	+85 °C			
Dimensions (w × h × d)		8.1 × 1	14.5	× 116.0 mm			
Weight		0.1	120 k	g/piece			
Approvals		cULus	s (E1	35145), GL			
Standards	EN 60950-	1, EN 61131-1, 2	, EN	61000, EN 60947-4-1, EN 55022			



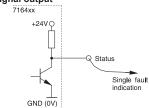
#### Electronic load monitoring up to DC 10 A, with communication, without rotary switch Single-channel design, Adjustable current range: DC 1 A - 10 A Adjustable characteristic: fast, medium, slow 1, -2, -3 (see Software)







Signal output



#### 7164xx 7164xx 7164xx .... +24VQ Status Status Status Centralized fault indication GND (0V)

Description		Part-No.		Туре	PU		
	50 10/01 1		-				
Rated voltage U <sub>N</sub>	DC 12/24 V	716411	R*	LOCC-Box-Net 7-6411	1		
Input			LOCC-Box	x-Net 7-6411			
Rated voltage U <sub>N</sub>	DC 12/24 V						
Operation voltage range			DC 1	0–32 V			
Rated current I <sub>N</sub>			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 1	2/24 V ac	c. to IEC 61131-2			
OFF		Pulse with	n falling ed	lge >100 ms, <800 ms			
ON		Pu	lse with fa	lling edge > 1 s			
Output							
Switching element			Mo	osFet			
Output current			max.	DC 10 A			
Voltage drop			<170 n	nV (10 A)			
Status display output				voltage present, no error or in load circuit			
Switch-on capacity			100	00 µF			
Current range	1 A – 10 A	A (adjustable	via softwa	are, 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				oltage on standby, no error, , 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 rai	l mountabl	e TS35 (EN 60715)			
Protection class			H	P20			
Installation position			á	any			
Connection device		Spring	terminal 0	.25 mm <sup>2</sup> – 2.5 mm <sup>2</sup>			
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				), GL in preparation			
Standards	EN 6095	0-1, EN 6113	31-1, 2, EN	l 61000, EN 60947-4-1, EN 55022			



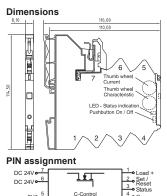
\* S Article on stock

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# Load monitoring · LOCC-Box-NET-SC

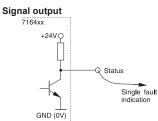
#### Electronic load monitoring up to DC 5 A, with communication Single-channel design, Adjustable current range: DC 1 A – 5 A Adjustable characteristics, fast, medium-speed, slow 1

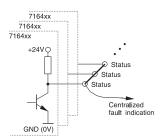






1: + Output 2: Control input (Set/Reset) 3: Status output 4: 1 Wire bus (Communication) 5: 0V 6: + Supply (alternative) 7: + Supply



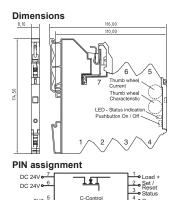


Input       LOCC-Box-Net-SC 7-6418         Rated voltage U <sub>N</sub> DC 12/24 V         Operation voltage range       DC 10–30 V         Rated current I <sub>N</sub> DC 5 A         Supply current       DC 40 A over Cu-rails 10 × 3 mm         Reverse voltage protection       internal electronics         Control input (Set / Reset)       Signal level         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       MosFet         Switching element       MosFet         Output       LED green: operating voltage present, no error         LED red: error in load circuit       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 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	Description		Part-No.	Туре	PU			
Input       LOCC-Box-Net-SC 7-6418         Rated voltage U <sub>N</sub> DC 12/24 V         Operation voltage range       DC 10–30 V         Rated current I <sub>N</sub> DC 40 A over Cu-rails 10 × 3 mm         Supply current       DC 40 A over Cu-rails 10 × 3 mm         Reverse voltage protection       internal electronics         Control input (Set / Reset)       Signal level         Signal level       DC 12/24 V acc. to EN 61131         OFF       Pulse with falling edge >100 ms, <800 ms	Spring terminal							
Rated voltage UNDC 12/24 VOperation voltage rangeDC 10-30 VRated current INDC 5 ASupply currentDC 40 A over Cu-rails 10 × 3 mmReverse voltage protectioninternal electronicsConnection type inputscrewless contact slideControl input (Set / Reset)Signal levelDC 12/24 V acc. to EN 61131OFFPulse with falling edge >100 ms, <800 ms	Rated voltage U <sub>N</sub>	DC 12/24 V	716418 <b>S</b> *	LOCC-Box-Net-SC 7-6418	1			
Rated voltage UNDC 12/24 VOperation voltage rangeDC 10-30 VRated current INDC 5 ASupply currentDC 40 A over Cu-rails 10 × 3 mmReverse voltage protectioninternal electronicsConnection type inputscrewless contact slideControl input (Set / Reset)Signal levelDC 12/24 V acc. to EN 61131OFFPulse with falling edge >100 ms, <800 ms	Imment		1.000 5	Pay Not 50 7 6449				
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         Control input (Set / Reset)       Signal level         Signal level       DC 12/24 V acc. to EN 61131         OFF       Pulse with falling edge > 100 ms, <800 ms	•							
Rated current IN       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         Connection type input       screwless contact slide         Control input (Set / Reset)       DC 12/24 V acc. to EN 61131         Signal level       DC 12/24 V acc. to EN 61131         OFF       Pulse with falling edge > 1 s         Output       MosFet         Output current       max. DC 5 A         Voltage drop       <85 mV (5 A)	0 11							
Supply currentDC 40 A over Cu-rails 10 × 3 mmReverse voltage protectioninternal electronicsConnection type inputscrewless contact slideControl input (Set / Reset)Signal levelDC 12/24 V acc. to EN 61131OFFPulse with falling edge >100 ms, <800 ms								
Reverse voltage protection       internal electronics         Connoction type input       screwless contact slide         Control input (Set / Reset)       DC 12/24 V acc. to EN 61131         OFF       Pulse with falling edge >100 ms, <800 ms	19		50.40.4					
Connection type input       screwless contact slide         Connection type input       DC 12/24 V acc. to EN 61131         Signal level       DC 12/24 V acc. to EN 61131         OFF       Pulse with falling edge > 100 ms, <800 ms	11.5							
Control input (Set / Reset)         Signal level       DC 12/24 V acc. to EN 61131         OFF       Pulse with falling edge >100 ms, <800 ms	0 1							
Signal level       DC 12/24 V acc. to EN 61131         OFF       Pulse with falling edge > 100 ms, <800 ms	21 1		screw	less contact slide				
OFF       Pulse with falling edge > 100 ms, <800 ms	• • • •							
ON       Pulse with failing edge > 1 s         Output       MosFet         Switching element       MosFet         Output current       max. DC 5 A         Voltage drop       <85 mV (5 A)	0							
Output       MosFet         Switching element       MosFet         Output current       max. DC 5 A         Voltage drop       <85 mV (5 A)								
Switching elementMosFetOutput currentmax. DC 5 AVoltage drop<85 mV (5 A)	ON		Pulse wi	th falling edge > 1 s				
Output currentmax. DC 5 AVoltage drop<85 mV (5 A)	Output							
Voltage drop<85 mV (5 A)Status display outputLED green: operating voltage present, no error LED red: error in load circuitSwitch-on capacityOptionalCurrent range1 A – 5 A (adjustable via switch in 1 A steps)Characteristicfast (1), medium (2), slow 1 (3) see 'Characteristic curves'Signal outputSignal levelDC 12/24 V: Operating voltage on standby, no error, DC 0 V: error, output switched off, and manual "OFF" (parameterized)Switching elementTransistor, collector with pull-up resistanceGeneralHousing materialPA 6.6 (UL 94 V-0, NFF 12, F2)MountingDIN rail mountable TS35 (EN 60715)Protection classIP20Installation positionanyConnection deviceSpring terminal 0.25 mm² – 2.5 mm²Operation temperature range-40 °C +85 °CDimensions (w × h × d) $8.1 \times 114.5 \times 116.0$ mmWeight0.120 kg/pieceApprovalscULus (E135145), GL in preparation	Switching element			MosFet				
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       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       PA 6.6 (UL 94 V-0, NFF 12, F2)         Mounting       DIN rail mountable TS35 (EN 60715)         Protection class       IP20         Installation position       any         Connection device       Spring terminal 0.25 mm² – 2.5 mm²         Operation 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	Output current		n	nax. DC 5 A				
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       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       PA 6.6 (UL 94 V-0, NFF 12, F2)         Mounting       DIN rail mountable TS35 (EN 60715)         Protection class       IP20         Installation position       any         Connection device       Spring terminal 0.25 mm² – 2.5 mm²         Operation 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	Voltage drop		<	85 mV (5 A)				
Current range $1 A - 5 A$ (adjustable via switch in 1 A steps)Characteristicfast (1), medium (2), slow 1 (3) see 'Characteristic curves'Signal outputSignal levelDC 12/24 V: Operating voltage on standby, no error, DC 0 V: error, output switched off, and manual "OFF" (parameterized)Switching elementTransistor, collector with pull-up resistanceGeneralPA 6.6 (UL 94 V-0, NFF 12, F2)MountingDIN rail mountable TS35 (EN 60715)Protection classIP20Installation positionanyConnection deviceSpring terminal 0.25 cm² - 2.5 mm²Operation temperature range-25 °C +50 °CStorage temperature range-40 °C +85 °CDimensions (w × h × d) $8.1 \times 114.5 \times 116.0$ mmWeight0.120 kg/pieceApprovalscULus (E135145), GL in preparation	Status display output							
Characteristic       fast (1), medium (2), slow 1 (3) see 'Characteristic curves'         Signal output       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       PA 6.6 (UL 94 V-0, NFF 12, F2)         Mounting       DIN rail mountable TS35 (EN 60715)         Protection class       IP20         Installation position       any         Connection device       Spring terminal 0.25 mm² – 2.5 mm²         Operation temperature range       -25 °C +50 °C         Dimensions (w × h × d)       8.1 × 114.5 × 116.0 mm         Weight       0.120 kg/piece         Approvals       cULus (E135145), GL in preparation	Switch-on capacity			Optional				
Signal output       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       PA 6.6 (UL 94 V-0, NFF 12, F2)         Mounting       DIN rail mountable TS35 (EN 60715)         Protection class       IP20         Installation position       any         Connection device       Spring terminal 0.25 mm² – 2.5 mm²         Operation 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	Current range		1 A – 5 A (adjust	able via switch in 1 A steps)				
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       PA 6.6 (UL 94 V-0, NFF 12, F2)         Mounting       DIN rail mountable TS35 (EN 60715)         Protection class       IP20         Installation position       any         Connection device       Spring terminal 0.25 mm² – 2.5 mm²         Operation temperature range       -25 °C +50 °C         Dimensions (w × h × d)       8.1 × 114.5 × 116.0 mm         Weight       0.120 kg/piece         Approvals       cULus (E135145), GL in preparation	Characteristic	fast	(1), medium (2), slo	ow 1 (3) see 'Characteristic curves'				
DC 0 V: error, output switched off, and manual "OFF" (parameterized)         Switching element       Transistor, collector with pull-up resistance         General       PA 6.6 (UL 94 V-0, NFF 12, F2)         Mounting       DIN rail mountable TS35 (EN 60715)         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 in preparation	Signal output							
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 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 in preparation	Signal level				)			
General         Housing material       PA 6.6 (UL 94 V-0, NFF 12, F2)         Mounting       DIN rail mountable TS35 (EN 60715)         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 in preparation	Switching element		Transistor, colle	ctor with pull-up resistance	,			
Mounting     DIN rail mountable TS35 (EN 60715)       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 in preparation	General		,					
Mounting       DIN rail mountable TS35 (EN 60715)         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 in preparation	Housing material		PA 6.6 (U	L 94 V-0. NFF I2. F2)				
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 in preparation								
Installation position     any       Connection device     Spring terminal 0.25 mm <sup>2</sup> – 2.5 mm <sup>2</sup> 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	0			. ,				
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 in preparation								
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			Spring termin					
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			1 5					
Dimensions (w × h × d)         8.1 × 114.5 × 116.0 mm           Weight         0.120 kg/piece           Approvals         cULus (E135145), GL in preparation								
Weight     0.120 kg/piece       Approvals     cULus (E135145), GL in preparation								
Approvals cULus (E135145), GL in preparation	. ,		÷					
	•			01				
	••	EN 600	,	<i>n</i> 1 1				



#### 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

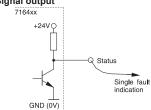


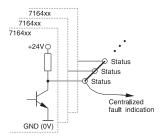


C-Co 0V•-5

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

Signal output





Description		Part-No.	Туре	PU			
Spring terminal							
Rated voltage U <sub>N</sub>	DC 12/24 V	716414 <b>S</b> *	LOCC-Box-C2 NET 7-6414	1			
Input		LOCC-E	3ox-C2 NET 7-6414				
Rated voltage U <sub>N</sub>	DC 12/24 V						
Operation voltage range		ŗ	DC 11–30 V				
Rated current I <sub>N</sub>			DC 5 A				
Supply current		DC 40 A ov	ver Cu-rails 10 × 3 mm				
Reverse voltage protection		inte	rnal electronics				
Connection type input		screw	less contact slide				
Control input (Set / Reset)							
Signal level		DC 12/24	V acc. to IEC 61131-2				
OFF		Pulse with fallir	ng edge >100 ms, <800 ms				
ON		Pulse wi	ith falling edge > 1 s				
Output							
Switching element			MosFet				
Output current		n	nax. DC 10 A				
Voltage drop		<1	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	C	).5 A – 4 A (can br	e set via switch in 0.5 A steps)				
Characteristic	fast (	1), medium (2), slo	ow 1 (3) see 'Characteristic curves'				
Signal output							
Signal level			ng voltage on standby, no error, t switched off and manual "OFF"				
Switching element		Transistor, colle	ector with pull-up resistance				
General							
Housing material		PA 6.6 (U	L 94 V-0, NFF I2, F2)				
Mounting		DIN rail mou	ntable TS35 (EN 60715)				
Protection class			IP20				
Installation position			any				
Connection device		Spring termin	nal 0.25 mm <sup>2</sup> – 2.5 mm <sup>2</sup>				
Operation temperature range		-25	5 °C +50 °C				
Storage temperature range		-40	) °С +85 °С				
Dimensions (w × h × d)		8.1 × 1	114.5 × 116.0 mm				
Weight		0.	.120 kg/piece				
Approvals	ch ll us i						
rippiovalo	COLUS	(E135145), GL IN	preparation, NEC Class 2 (E170585)				



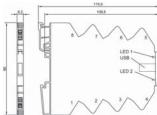
\* S Article on stock

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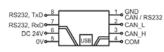
#### Gateway for LOCC-Box-Net versions Input: LOCCbus (LIN) Output: USB, RS 232, CANopen

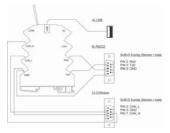


Dimensions



PIN assignment



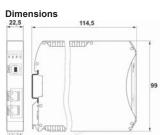


Description		Part-No.		Туре	PU	
Spring terminal						
Rated voltage	DC 12/24 V	716459	S*	LOCC-Box-GW 7-6459	1	
Input		L		x-GW 7-6459		
Bus system				s, basic LIN		
Access method		Sing	,	r - Multiple Slave		
Bus technology				Line		
Physical level			-	-wire		
Participants			40, n	nax. 254		
Bus length			Max	k. 40 m		
Transfer rate			960	0 Baud		
Data rate			8 Bit +	fixed parity		
Transfer protocol			Modified	d multi-drop		
Output						
Bus system		USB 2.0	Full-Spee	ed, RS232, CANopen		
Transfer rate	USB: 12	Mbit/s RS232	2: 600–11	500 bit/s CANopen: 10–1000 kbit/s		
General						
Rated voltage	DC 12/24 V					
Operation voltage range			DC 1	0–26.4 V		
Rated current			max	. 50 mA		
Reverse voltage protection			,	Yes		
Status indication				JSB, RS232, Firmware n/red: CANopen		
Insulation voltage			1	.0 kV		
Housing material		PA 6	6.6 (UL 94	V-0, NFF I2, F2)		
Mounting		DIN rai	mountab	le TS35 (EN 60715)		
Protection class			1	P20		
Installation position				any		
Connection device	Sprin	ig terminal 0.1	4 mm <sup>2</sup> –	$2.5 \text{ mm}^2$ (with ferrule 1.5 mm <sup>2</sup> )		
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 6095	50-1, EN 6113	1-1, 2, El	N 60898, EN 60947-4-1, EN 50081		
		_				
Accessories	Color		art-No.	Туре	PU	
Labelling sign 4x11 mm	white		31313	BZT-0411	10	
Insulation plate			60809	TP 7-0809 MIC/SNR	10	
Laser label A4 not punched		68	81031	LEB A4 PW	1	



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





PIN assig	gnment	
Port1		Power-P 3 Power-M
Port2	DIAG	<sup>2</sup> NC 1 C

Use

Description		Part-No.		Туре	PL			
Spring terminal								
Rated voltage	DC 12/24 V	716457	S*	LOCC-Box-GWPN 0-6457	1			
Input								
Bus system			I OCCh	us, basic LIN				
Access method		Sind		er - Multiple Slave				
Bus technology			gie maen	Line				
Physical level				1-wire				
Participants			tvp. 40	0, 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-S	peed, PROFINET-IO				
Transfer rate	U			NET-IO: 100 bit/s (IEE 802.3)				
Interface	USB: USB connector, Type B PROFINET-IO: Port 1, Port 2, 2 × RJ45 female							
				vanic isolation and LEDs				
General								
Rated voltage			DC	: 12/24 V				
Operation voltage range			1	0-32 V				
Rated current			120 n	nA @ 24 V				
Reverse voltage protection				Yes				
Status indication	LED LED C, green	LED E, red - : P, green - on - flashing: da Link: ye	shining: ı : operatiı ta traffic ellow - 1(	entification request (PROFINET) no connection (PROFINET) ng voltage is supplied (POWER) with LOCC-Box-Net modules (LOCCbus J0Base/T-connection nnection, Blanking: data traffic	)			
Insulation voltage		, ,		1.5 kV				
Housing material			PA 6.6	(UL 94 V-0)				
Mounting		DIN rai		ble TS35 (EN 60715)				
Protection class				IP20				
Installation position				any				
Connection device	Sprin	g terminal 0.	14 mm <sup>2</sup> -	$-2.5 \text{ mm}^2$ (with ferrule 1.5 mm <sup>2</sup> )				
Relative air humidity				not condensing				
Operation temperature range			-20 °C	C +60 ℃				
Storage temperature range			-40 °C	C +85 ℃				
Dimensions (w × h × d)		2	22.5 × 99	0.0 × 114.5 mm				
Weight			0.13	0 kg/piece				
Approvals				CE				
Standards	EN 6095	0-1, EN 6113	31-1, 2, E	EN 60898, EN 60947-4-1, EN 50081				
Comments Screw terminal on request								

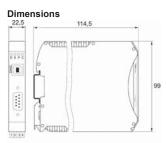






#### Gateway for LOCC-Box-Net versions Input: LOCCbus (LIN) Output: USB, PROFIBUS-DP

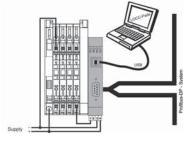




PIN assi	gnment	
Port1	DIAG	4 ○ Power-P 3 ○ Power-M 2 ○ NC 1 ○ C

Description		Part-No.	•	Туре	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		Sin	gle-Master	- Multiple Slave	
Bus technology			L	ine	
Physical level			1-1	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				multi-drop	
Output				·	
Bus system		USB 2	.0 Full-Spe	ed, PROFIBUS-DP	
Transfer rate		USB: 12 Mb	it/s PROFI	BUS-DP: max. 12 Mbit/s	
Interface	USB: USB connector, Type B PROFIBUS-DP: Port 1, SUB-D 9-pin with galvanic isolation				
General			_ ′	1 0	
Rated voltage			DC 1	2/24 V	
Operation voltage range			10-	32 V	
Rated current			120 mA	A @ 24 V	
Reverse voltage protection			Y	'es	
Status indication	LED E, red LED I	- different fla P, green - on	sh codes for coperating	exchange via PROFIBUS-DP or diagnosis of PROFIBUS-DP faults voltage is supplied (POWER) ith LOCC-Box-Net modules (LOCCbus)	
Insulation voltage		Ū		5 kV	
Housing material			PA 6.6 (l	JL 94 V-0)	
Mounting		DIN rai	l mountable	e TS35 (EN 60715)	
Protection class			IF	20	
Installation position			а	ny	
Connection device	Sprin	g terminal 0.	14 mm <sup>2</sup> – 2	$2.5 \text{ mm}^2$ (with ferrule 1.5 mm <sup>2</sup> )	
Relative air humidity				ot 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				)E	
Standards	EN 60950-1, E	N 61131-1,	EN 61131-	2, EN 60898, EN 60947-4-1, EN 50081	
Comments Screw terminal on request					

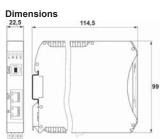
Use





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





PIN assig	gnment	
IN		Power-P
OUT	DIAG	2 NC 1 C

Description		Part-No.		Туре	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 I	multi-drop					
Output									
Bus system		USB	2.0 Full-Sp	peed, EtherCAT					
Transfer rate		USB: 12 Mbi	t/s EtherCA	AT: 100 bit/s (IEE 802.3)					
Interface	USB: USB conne	ctor, Type B	EtherCAT:	IN, OUT, 2 × RJ45 female connector with					
	galvanic isolation and LEDs								
General									
Rated voltage			DC 12	2/24 V					
Operation voltage range			10-3	32 V					
Rated current			55 mA	@ 24 V					
Reverse voltage protection			Y	es					
Status indication	LED C, green Link/Activity: gree	LED LED - flashing: da en - 100Base	Ř, green - s E, green - s ata traffic wit /T-connection	M Error, EEPROM not charged shining: ECT Run hining: ECT Error th LOCC-Box-Net modules (LOCCbus) on, flashes when there is EtherCAT-traffic ED, 100Base/T-connection					
Insulation voltage			. 1.5	kV					
Housing material			PA 6.6 (U	JL 94 V-0)					
Mounting		DIN rai	mountable	e TS35 (EN 60715)					
Protection class			IP	20					
Installation position			a	ny					
Connection device	Spring	terminal 0.1	14 mm <sup>2</sup> – 2	.5 mm <sup>2</sup> (with ferrule 1.5 mm <sup>2</sup> )					
Relative air humidity		m	ax. 90 % no	ot condensing					
Operation temperature range			-20 °C	+60 °C					
Storage temperature range			-40 °C	+85 °C					
Dimensions (w × h × d)		2	2.5 × 99.0	× 114.5 mm					
Weight			0.130 k	g/piece					
Approvals			С	E					
Standards	EN 60950-1, E	N 61131-1, I	EN 61131-2	2, EN 60898, EN 60947-4-1, EN 50081					
Comments Screw terminal on request		,							

Use



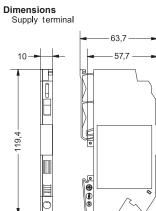
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# Load monitoring · LOCC-Box Accessories

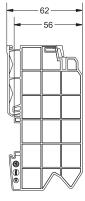
#### LOCC-Box supply set consisting of supply terminal and end block maximum total current 40 A





End block





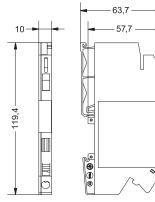
Description		Part-No.		Туре	PU	
Rated voltage U <sub>N</sub>	DC 12/24 V	716425	S*	LOCC-Box-ES 7-6425	1	
Input			LOCC-Bo	x-ES 7-6425		
Rated voltage U <sub>N</sub>			DC 1	2/24 V		
Rated current I <sub>N</sub>			max. I	DC 40 A		
Reverse voltage protection				No		
Connection type input	Spring	terminal 0	.33 mm <sup>2</sup> –	10.0 mm <sup>2</sup> AWG 22 – AWG 8		
Conductor connection cross section				max. 10 mm <sup>2</sup>		
				ed: max 6 mm <sup>2</sup>		
		finely st		th AEH: max 6 mm <sup>2</sup>		
Strip length			12	mm		
Output						
Rated voltage U <sub>N</sub>				5 V/9 V		
Output current				DC 40 A		
Connection type output		\$		contact slide		
Copper bus bar			3 ×	10mm		
General						
Housing material			· ·	V-0, NFF I2, F2)		
Mounting		DIN rai	l mountabl	e TS35 (EN 60715)		
Protection class			IF	20		
Installation position			a	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				-		



#### LOCC-Box supply terminal maximum total current 40 A



#### Dimensions



Description		Part-No.		Туре	PU
Rated voltage U <sub>N</sub>	DC 12/24 V	716435	S*	LOCC-Box-EKL 7-6435	2
Input			OCC Re	x-EKL 7-6435	
Input		L		12/24 V	
Rated voltage U <sub>N</sub>					
Rated current I <sub>N</sub>			max.	DC 40 A	
Reverse voltage protection	<u> </u>		2	No	
Connection type input	Sprin			– 10.0 mm <sup>2</sup> AWG 22 – AWG 8	
Conductor connection cross section		fin	ely strand	: max. 10 mm <sup>2</sup> led: max 6 mm <sup>2</sup> rith AEH: max 6 mm <sup>2</sup>	
Strip length			1:	2 mm	
Output					
Rated voltage U <sub>N</sub>			DC	12/24 V	
Output current			max.	DC 40 A	
Connection type output			screwless	s contact slide	
Copper bus bar			3 ×	10mm	
General					
Housing material		PA 6	6.6 (UL 94	4 V-0, NFF I2, F2)	
Mounting		DIN rai	l mountab	ole 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	9.4 × 63.7 mm	
Weight			0.035	kg/piece	
Approvals			cULus	(E135145)	
Standards				_	





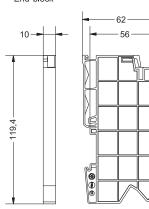
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# Load monitoring · LOCC-Box Accessories

#### LOCC-Box end block



Dimensions End block



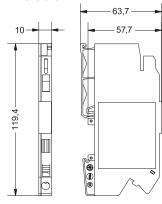
Description	Part-No.	Туре	PU
Rated voltage U <sub>N</sub>	716436 <b>S</b> *	LOCC-Box-EB 7-6436	2
General			
Housing material	PA 6.6 (UL 94	V-0, NFF I2, F2)	
Mounting	DIN rail mountab	e TS35 (EN 60715)	
Protection class	I	P20	
Installation position	ć	any	
Operation temperature range	-25 °C	+60 °C	
Storage temperature range	-40 °C	+85 °C	
Dimensions (w $\times$ h $\times$ d)	10.0 × 119	.4 × 62.0 mm	
Weight	0.010	kg/piece	
Approvals	cULus (	E135145)	
Standards		_	



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



#### Dimensions



Description	Part-No.	Туре	PU				
Potod voltago LL	716421 <b>S</b> *	LOCC-Box-EKL 7-6421	2				
Rated voltage U <sub>N</sub>	710421 3	LOCC-B0X-ERL 7-6421	2				
Input	LOCC-Bo	ox-EKL 7-6421					
Rated voltage U <sub>N</sub>		-					
Rated current IN	max	. DC 40 A					
Reverse voltage protection		No					
Connection type input	Spring terminal 0.33 mm <sup>2</sup>	– 10.0 mm <sup>2</sup> AWG 22 – AWG 8					
Conductor connection cross section	single-wire: max. 10 mm <sup>2</sup> finely stranded: max 6 mm <sup>2</sup> finely stranded with AEH: max 6 mm <sup>2</sup>						
Strip length	-	12 mm					
Output							
Rated voltage U <sub>N</sub>	DC	12/24 V					
Output current	max	. DC 40 A					
Connection type output	screwles	s contact slide					
Copper bus bar	3 :	× 10mm					
General							
Housing material	PA 6.6 (UL 9	4 V-0, NFF I2, F2)					
Mounting	DIN rail mounta	ble TS35 (EN 60715)					
Protection class		IP20					
Installation position		any					
Operation temperature range	-25 °C	С +60 °С					
Storage temperature range	-40 °C	С +85 °С					
Dimensions (w × h × d)	10.0 × 11	9.4 × 63.7 mm					
Weight	0.035 kg/piece						
Approvals	cULus	s (E135145)					
Standards		-					



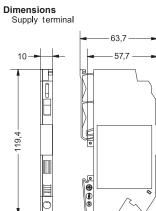
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# Load monitoring · LOCC-Box Accessories

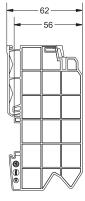
#### LOCC-Box supply set 16 mm<sup>2</sup> consisting of supply terminal and end block maximum total current 40 A





End block





Description		Part-No.		Туре	PU		
Rated voltage U <sub>N</sub>	DC 12/24 V	716447	S*	LOCC-Box-ES16 7-6447	1		
Input	LOCC-Box-ES16 7-6447						
Rated voltage U <sub>N</sub>	DC 12/24 V						
Rated current I <sub>N</sub>			max.	DC 40 A			
Reverse voltage protection				No			
Connection type input	1 0			– 16.0 mm <sup>2</sup> AWG 22 – AWG 6			
Conductor connection cross section				: max. 16 mm <sup>2</sup>			
	finely stranded: max 10 mm <sup>2</sup>						
		finely sti		ith AEH: max 10 mm <sup>2</sup>			
Strip length	12 mm						
Output							
Rated voltage U <sub>N</sub>	DC 12/24 V						
Output current				DC 40 A			
Connection type output		:		s contact slide			
Copper bus bar			3 ×	: 10mm			
General							
Housing material		PA 6	6.6 (UL 94	4 V-0, NFF I2, F2)			
Mounting		DIN rai	l mountat	ole 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	5 kg/piece			
Approvals			cULus	(E135145)			
Standards				-			



Description

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



Dir	nens	sions
8,1	)	116,00
		110,00
114,50		
114		Ч a
PIN	l ass	signment
nc nc	7	1 ° Load 2 ° Load

nc <u>5</u>

3 Load

4 Load

Rated voltage U <sub>N</sub>	DC 12/24 V	716448 <b>S</b> *	LOCC-Box-VKL 7-6448	1			
C II							
Input	LOCC-Box-VKL 7-6448						
Rated voltage U <sub>N</sub>	DC 12/24 V						
Rated current I <sub>N</sub>	max. DC 10 A						
Reverse voltage protection			No				
Connection type input	Spring terminal 0.25 mm <sup>2</sup> – 2.5 mm <sup>2</sup>						
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			-				

Part-No.

Туре

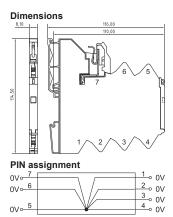
PU



# Load monitoring · LOCC-Box Accessories

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





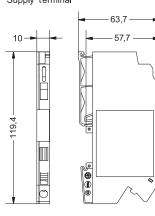
Description		Part-No.		Туре	PU	
Rated voltage U <sub>N</sub>	DC 12/24 V	716420	S*	LOCC-Box-SK 7-6420	2	
Input			LOCC-Box	-SK 7-6420		
Rated voltage U <sub>N</sub>			DC 12	2/24 V		
Rated current I <sub>N</sub>	6 × max. DC 10 A					
Reverse voltage protection	No					
Connection type input	Spring terminal 0.25 mm <sup>2</sup> – 2.5 mm <sup>2</sup>					
Connection			1 -	- 6		
Output						
Output current			max. D	OC 40 A		
Voltage drop				-		
Connection type output		\$	screwless o	contact slide		
Connection				7		
General						
Housing material		PA 6	6.6 (UL 94 )	V-0, NFF I2, F2)		
Mounting		DIN rail	mountable	e TS35 (EN 60715)		
Protection class			IP	20		
Installation position				ny		
Operation temperature range				+60 °C		
Storage temperature range			-40 °C .	+85 °C		
Dimensions (w × h × d)		8	3.1 × 114.5	× 116.0 mm		
Weight			0.700 k	g/piece		
Approvals			C	E		
Standards				-		

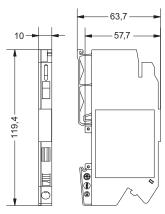


#### LOCC-Box supply terminal LOCC-Box supply terminal for power distribution maximum total current 40 A



### **Dimensions** Supply terminal





Description		Part-No.		Туре	PU		
Rated voltage U <sub>N</sub>	DC 12/24 V	716437	S*	LOCC-Box-ES 7-6437	1		
Input	LOCC-Box-ES 7-6437						
Rated voltage U <sub>N</sub>	DC 12/24 V						
Rated current I <sub>N</sub>			max. E	DC 40 A			
Reverse voltage protection				10			
Connection type input	Spring	terminal 0	.33 mm <sup>2</sup> –	10.0 mm <sup>2</sup> AWG 22 - AWG 8			
Conductor connection cross section	finely stranded: max 6 mm <sup>2</sup>						
Strip length	finely stranded with AEH: max 6 mm <sup>2</sup> 12 mm						
Output							
Rated voltage U <sub>N</sub>	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	6.6 (UL 94	V-0, NFF I2, F2)			
Mounting		DIN rai	l mountable	e TS35 (EN 60715)			
Protection class			IF	20			
Installation position			а	ny			
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 (I	E135145)			
Standards				_			



\* S Article on stock

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# Load monitoring · LOCC-Box Accessories

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



Description	Part-No.	Туре	PU		
Copper bus bar					
Color	716426 <b>S</b> *	LOCC-Box-CU 7-6426	1		
General	71	6426			
Color		-			
Design	Ro	d 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





# Cover, copper rail Length 1 m



Description	Part-No.	Туре	PU
Cover, copper rail			
Color	716427 <b>R</b> *	LOCC-Box-AD 7-6427	1
General	71	6427	
Color		-	
Design	Ro	d 1 m	
Material		-	
Operation temperature range		+80 °C	
Storage temperature range	-40 °C	+80 °C	
Weight	0,1 k	g/piece	
Dimensions	10 × 3 ×	< 1000 mm	



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# Load monitoring · LOCC-Box Accessories

#### Labelling system Labelling sheets 240 labels



General 716445	tion	Part-No	).	Туре	PU	
General 716445	g sheets					
		ite 716445	R*	LOCC-Box-LEB 7-6445	10	
			710	6445		
Color white		white				
Design DIN A 4 sheets with 240 single labels		DIN A 4 sheets with 240 single labels				
Material Paper		Paper				
Operation temperature range -40 °C +80 °C	n temperature range		-40 °C .	+80 °C		
Storage temperature range -40 °C +80 °C	temperature range		-40 °C .	+80 °C		
Weight 0.040 kg/piece			0.040	<g piece<="" td=""><td></td></g>		
Dimensions 219 × 297 mm	ons		219 × 1	297 mm		



Labelling system Tag holder 39.3×5 mm single signs



Description	Part-No.			Туре	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	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						



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.		Туре	PU
Labelling plates					
Color	white	716441 <b>R</b> <sup>a</sup>	*	LOCC-Box-BZW 7-6441	1
General			716	6441	
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	



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



Description		Part-No.	Туре	PU	
Labelling plates					
Color	white	716431 <b>S</b> *	LOCC-Box-BZW 7-6431	1	
	red	716432 <b>S</b> *	LOCC-Box-BZR 7-6432	1	
	blue	716433 <b>S</b> *	LOCC-Box-BZB 7-6433	1	
	yellow	716434 <b>A</b> *	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	i × 5 mm		



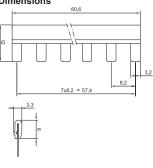
A Article available at short notice
 R Article on request

#### Insulated jumper combs 8-pin



Description		Part-No.		Туре		PU
Jumper comb 8-pin						
Color	white	716428	S*	LOCC-Box-BKW 7-64	28	5
	red	716429	S*	LOCC-Box-BKR 7-642	29	5
	blue	716430	S*	LOCC-Box-BKB 7-643	30	5
General	716428		71	6429	716430	
Pole number				8		
Connection device			plu	ıg-in		
Rated current			DC	C 6 A		
Contact design			Flat conta	act 0.5 mm		
Pin spacing			8.2	2 mm		
Contact material			F	eZn		
Material			PVC	C hard		
Color	white		r	ed	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		

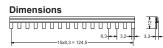






#### Insulated jumper combs 16-pin





Description		Part-No.		Туре		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		



- A Article available at short notice
   R Article on request

# Load monitoring · LCOS-CC

#### 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

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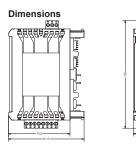
PIN assignment X1 X2 12\_0 R/S- CH1/CH2 11\_0 R/S+ CH2 Load+ CH2 0.12 Load+ CH2 0.34 Load+ CH2 0.34 Load+ CH1 0.56 C-Control \_\_0 Status CH2 90% 3\_0 GND 2\_0 Status CH2 90% 3\_0 GND 2\_0 Status CH1 90% 1\_0 Status CH1

Description		Part-No.		Туре	PU
Screw terminal		i alt-110.		1,100	10
Rated voltage U <sub>N</sub>	DC 24 V	779000.2111	<b>A</b> *	LCOS-CC-2K-1P DC 24V	1
Push-In	00241	110000.2111	~	2000-00-21(11) 20 247	
Rated voltage U <sub>N</sub>	DC 24 V	779100.2111	S*	LCOS-CC-2K-1P DC 24V	1
Note					
Included in the delivery		•		CS 5.08 and CS 3.50	
Not included in the delivery		Function carr	ier ar	nd other accessories	
Input					
Rated voltage U <sub>N</sub>		_		24 V	
Operation voltage range		D		4–28.8 V	
Rated current I <sub>N</sub>		50.00		10 A	
Supply current				COS Powerbus	
Reverse voltage protection		Inte	rnale	electronics	
Control input (Set / Reset)		DO 61			
Signal level				c. to EN 61131	
OFF			•	ge >100 ms, <800 ms	
ON				ling edge > 1 s	
Isolation voltage		1 K	v, 50	Hz, 1 min.	
Output			N 4 -		
Switching element				sFet	
Output current				DC 10 A	
Voltage drop				NV (10 A)	
Status display output	LED green:			N, no fault, green flashing: 90 % I <sub>B</sub> triggered, red: OFF	
Switch-on capacity		LLD Teu llas		000 uF	
Current range	1	$\Delta = 10 \Delta$ (adjus		via switch in 1 A steps)	
Characteristic				2 (4), slow 3 (5), adjustable via switch	
Signal output		r (2), olow r (0),	01011		
Switching element	Т	ransistor open	colle	ctor with pull-up resistor	
Single channel message				High level, no errors, low level, there ar	е
	(,,			rors	
90 % of the rated current I <sub>B</sub>	(Status 90 % CH1,	CH2) Acc. to IE	C 61	131-2: High level <90 %, low level >90 %	%
Insulation voltage				-	
centralised fault signalling	(Status Ou	it) Single chann	el me	ssage 1+2, decoupled via diodes	
General					
Housing material		PA 6.6 (U	L 94	V-0, NFF I2, F2)	
Mounting	plug-in on LCO			5 mm (Accessories) DIN rail mounting	
				60715)	
Protection class				20	
Installation position				iny	
Vibration resistance				c, shock: EN 60068-2-27 Ea	
Climatic conditions	Acc. to EN			se at weather protected locations	
Connection type load side				oint plug, RM 5.08	
Connection type control side				point plug, RM 3.5	
Connection device	S	0		-1.5 mm <sup>2</sup> / AWG 28–16	
Strip length				RM 5.08: 10 mm	
Operation temperature range				. +55 °C	
Storage temperature range				+70 °C	
Dimensions (w × h × d)	(including			0 × 102.0 mm out plug-in terminals on the side)	
Weight	(molading			kg/piece	
Approvals	cULus (F			010, UL 2367, GL in preparation	
Standards				2, EN 60529, EN 61000-6-2/4	
	21101			.,	



#### 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





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PIN assignment

Load+o12

Load+o5.6

Load-o7.8

C-Control 1.2

C-Control 1.2

Status+ 012

C-Control 1.2

Status+ 012

C-Control 1.2

Status+ 012

C-Control 1.2

Status+ 012

Status+ 012
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Description		Part-No.		Туре	PU
Screw terminal					
Rated voltage U <sub>N</sub>	DC 24 V	779000.1211	<b>A</b> *	LCOS-CC-1K-2P DC 24V	1
Push-In					
Rated voltage U <sub>N</sub>	DC 24 V	779100.1211	S*	LCOS-CC-1K-2P DC 24V	1
Note					
Included in the delivery		Plug-in termina	als · (	CS 5.08 and CS 3.50	
Not included in the delivery				nd other accessories	
Input					
Rated voltage U <sub>N</sub>			DC	24 V	
Operation voltage range		D		4–28.8 V	
Rated current I <sub>N</sub>				10 A	
Supply current		DC 32 A	via L	COS Powerbus	
Reverse voltage protection				electronics	
Control input (Set / Reset)					
Signal level		DC 24 \	/ acc	. to EN 61131	
OFF				ge >100 ms, <800 ms	
ON				ling edge > 1 s	
Isolation voltage		1 0136 WI		5 kV	
Output			1.0		
Switching element	Mos	sFet and relay (daly	anic	separation both poles: 500 V)	
Output current	With			DC 10 A	
Voltage drop				NV (10 A)	
Status display output	LED are			N, no fault, green flashing: 90 % I <sub>B</sub>	
	LED gre	LED red flash	, ning:	triggered, red: OFF	
Switch-on capacity				000 μF	
Current range				via switch in 1 A steps)	
Characteristic	fast (1), med			2 (4), slow 3 (5), adjustable via switch, eristic curves'	
Signal output					
Switching element		One relay v	vith 1	S per signal type	
Single channel message	(\$	Status CH1, CH2) 1	N/O	contact, AC/DC 125 V, 1 A	
		Rela	ay clo	osed: error	
				en: no error	
90 % of the rated current $I_B$	(Sta			I/O contact, AC/DC 125 V, 1 A 6, Relay open: <90 %	
Insulation voltage		-		) Hz, 1 min.	
centralised fault signalling				_	
General					
Housing material		PA 6.6 (U	L 94	V-0, NFF I2, F2)	
Mounting	plug-in on L	COS function carrie	r 22.	5 mm (Accessories) DIN rail mounting 60715)	
Protection class			•	20	
Installation position				iny	
Vibration resistance	Vi	bration: EN 60068-2		c, shock: EN 60068-2-27 Ea	
Climatic conditions				se at weather protected locations	
Connection type load side	A			oint plug, RM 5.08	
Connection type control side				point plug, RM 3.5	
o				-1.5 mm <sup>2</sup> / AWG 28–16	
Connection device Strip length		-		RM 5.08: 10 mm	
Operation temperature range				. +55 °C	
Storage temperature range				. +70 °C	
Dimensions (w × h × d)				0 × 102.0 mm	
	(includ			out plug-in terminals on the side)	
Weight	(includ			kg/piece	
Approvals	chilling			010, UL 2367, GL in preparation	
		· · · ·		2, EN 60529, EN 61000-6-2/4	



\* S Article on stock

A Article available at short notice

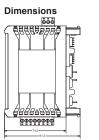
R Article on request

# Load monitoring · LCOS-CC

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#### 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



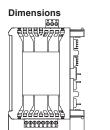


Screw terminal         Rated voltage UN         DC 24 V         779000.1111 A*         LCOS-CC-1K-1P-DC24V         1           Push-In         DC 24 V         779100.1111 S*         LCOS-CC-1K-1P-DC24V         1           Input	Description	Р	art-No.	Туре	PU
Push-In       DC 24 V       779100.1111       S*       LCOS-CC-1K-1P-DC24V       1         Input       Type of function       1-channel 1 pin switching       1         Tope of function       1-channel 1 pin switching       1         Technology       Powerbus and terminal strip       1         Rated voltage Ing       DC 24 V       2       2         Operation voltage range       DC 24 V account       2       2         Supply current       DC 32 A via LCOS Powerbus       2       2         Reverse voltage protection       internal electronics       2       2         Control input (Set / Reset)       DC 24 V acc. to EN 61131       3       3         OFF       Pulse with failing edge >10 ons, <800 ms	Screw terminal				
Rated voltage UNDC 24 V779100.1111\$*LCOS-CC-1K-1P-DC24V1InputType of function1-channel 1 pin switchingTechnologyPowerbus and terminal stripRated voltage UNDC 24 VOperation voltage rangeDC 24 V act.Operation voltage rangeDC 24 V act.Supply currentDC 32 A via LCOS PowerbusReverse voltage protectioninternal electronicsConnection Itype Input-Control Input (Set / Reset)DC 24 V acc. to EN 61131OFFPulse with failing edge > 10 Cm s. <600 ms	Rated voltage U <sub>N</sub>	DC 24 V 7	79000.1111 <b>A</b> *	LCOS-CC-1K-1P-DC24V	1
Input       1-channel 1 pin switching         Type of function       1-channel 1 pin switching         Technology       Powerbus and terminal strip         Rated voltage U <sub>N</sub> 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         Control Input (Set / Reset)       DC 24 V acc. to EN 61131         OFF       Pulse with failing edge >10 ms, <800 ms	Push-In				
Type of function Type of function Type of function Technology Powerbus and terminal strip Reted voltage U <sub>N</sub> DC 24 V Operation voltage range DC 20.4-28.8 V Operation voltage range DC 20.4-28.8 V Connection type input 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 > 10 ms, <800 ms ON Pulse with falling edge > 10 ms, <800 ms ON Pulse with falling edge > 10 ms, <800 ms ON Pulse with falling edge > 10 ms, <800 ms ON Pulse with falling edge > 10 ms, <800 ms ON Output Coupturent MosFet Output Current MosFet Output Current MosFet Output Current Switch-in capacity Current max, DC 10 A Voltage drop < 170 mV (10 A) Status display output Output 2: LED red flashing: triggered, LED red: unit off Switch-on capacity Current fast (1), medium (2), slow 1 (3), slow 2 (4), slow 3 (5), adjustable via switch Signal output Signal output Current ange Current 2 x transistor, open collector with pull-up resistor Single channel message Single Reverse Coverload, short circuit, switch off: Low, rated operation: Figh 1 ≥ 0 % i <sub>N</sub> , Low 1 ≥ 0 % i <sub>N</sub> Current ange Current ange Current Current Coverload, short circuit, switch off: Cov, rated operation: Figh 1 ≥ 0 % i <sub>N</sub> , Low 1 ≥ 0 % i <sub>N</sub> Current ange Current ange Current Curre	Rated voltage U <sub>N</sub>	DC 24 V 7	79100.1111 <b>S</b> *	LCOS-CC-1K-1P-DC24V	1
Technology         Powerbus and terminal strip           Rated voitage UN         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 > 10 ms, <800 ms	Input				
Rated voltage units       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)       DC 24 V acc. to EN 61131         Signal level       DC 24 V acc. to EN 61131         OFF       Pulse with falling edge > 1 s         Isolation voltage       AC 1.5 KV, 1 min.         Output       MosFet         Output durent       max. DC 10 A         Voltage drop       <170 mV (10 A)	Type of function		1-channel 1	pin switching	
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	Technology		Powerbus an	d terminal strip	
Supply current       DC 32 A via LCOS Powerbus         Reverse voltage protection       internal electronics         Connection type input       –         Control input (Set / Reset)       DC 24 V acc. to EN 61131         OFF       Pulse with falling edge > 100 ms, <800 ms	Rated voltage U <sub>N</sub>		DC	24 V	
Reverse voltage protectioninternal electronicsConnection type input-Control input (Set / Reset)Signal levelDC 24 V acc. to EN 61131OFFPulse with failing edge > 1 oIsolation voltageAC 1.5 kV, 1 min.OutputOutputSignal levelAC 1.5 kV, 1 min.Output ourrentMosFetVoltage drop<170 mV (10 A)	Operation voltage range		DC 20.	4–28.8 V	
Reverse voltage protectioninternal electronicsConnection type input-Control input (Set / Reset)Signal levelDC 24 V acc. to EN 61131OFFPulse with failing edge > 1 oIsolation voltageAC 1.5 kV, 1 min.OutputOutputSignal levelAC 1.5 kV, 1 min.Output ourrentMosFetVoltage drop<170 mV (10 A)	Supply current		DC 32 A via L	COS Powerbus	
Control input (Set / Reset)Signal levelDC 24 V acc. to EN 61131OFFPulse with falling edge > 10 ms, <800 ms			internal e	electronics	
Signal level     DC 24 V acc. to EN 61131       OFF     Pulse with failing edge >100 ms, <800 ms	Connection type input			_	
OFFPulse with falling edge > 100 ms, <800 msONPulse with falling edge > 1 sSolation voltageAC 1.5 kV, 1 min.OutputMosFetOutput currentmax. DC 10 AVoltage drop<170 mV (10 A)	Control input (Set / Reset)				
OFFPulse with falling edge > 100 ms, <800 msONPulse with falling edge > 1 sIsolation voltageAC 1.5 kV, 1 min.OutputSwitching elementMosFetOutput durrentmax. DC 10 AVoltage drop<170 mV (10 A)	I ( /		DC 24 V acc	. to EN 61131	
ON       Pulse with failing edge > 1 s         Isolation voltage       AC 1.5 kV, 1 min.         Output       MosFet         Switching element       MosFet         Output current       max. DC 10 A         Voltage drop       <170 mV (10 A)	0	Pi	ulse with falling ed	ne >100 ms_<800 ms	
Isolation voltageAC 1.5 kV, 1 min.OutputSwitching elementMosFetOutput currentmax. DC 10 AVoltage drop<170 mV (10 A)		1.			
Output         MosFet           Switching element         MosFet           Output current         max. DC 10 A           Voltage drop         <170 mV (10 A)					
Switching elementMosFetOutput currentmax. DC 10 AVoltage drop<170 mV (10 A)			/10/1.01		
Output currentmax. DC 10 AVoltage drop<170 mV (10 A)	•		Mo	sFot	
Volage drop<170 mV (10 A)Status display outputOutput 1: LED green: no error, LED green flashing: 90 % utilisation Output 2: LED red flashing: triggered, LED red: unit offSwitch-on capacity>10000 µFCurrent range1 A - 10 A (adjustable via switch in 1 A steps)Characteristicfast (1), medium (2), slow 1 (3), slow 2 (4), slow 3 (5), adjustable via switchSignal outputSwitching elementSwitching element2 x transistor, open collector with pull-up resistorSingle channel message-Signal levelOverload, short circuit, switched off: Low, rated operation: High 1 ≥ 90 % I <sub>N</sub> , Low I ≤ 90 % I <sub>N</sub> Centralised fault signallingDiagnostic output 1 + 2 connected via diodesGeneralHousing materialHousing materialPA 6.6 (UL 94 V-0, NFF I2, F2)Colour of the housingRAL. 7012 basalt greyMountingplug-in on LCOS function carrier 22.5 mm (Accessories) DIN rail mounting (EIN 60715)Protection classIP20Installation position-Connection type load sideX1: 8-pin multi-point plug, RM 5.08Connection type control sideX2: 12-pin multi-point plug, RM 3.5MTBF690000 h @ 40 °C, 100 operations buton, 30 reolutions coding switchOperation temperature range-25 °CStorage temperature range-25 °CStorage temperature range-25 °COperation temperature range-25 °COperation temperature range-25 °COperation temperature range-25 °COperation temperature range-200 kg/piece<					
Status display output       Output 1: LED green: no error, LED green flashing: 90 % utilisation         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       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 1 ≥ 90 % I <sub>N</sub> , Low 1 ≤ 90 % I <sub>N</sub> centralised fault signalling         Diagnostic output 1 + 2 connected via diodes       General         Housing material       PA 6.6 (UL 94 V-0, NFF 12, 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       -         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       -40 °C +70 °C         Dimensions					
Output 2: LED red flashing: triggered, LED red: unit offSwitch-on capacity>10000 $\mu$ FCurrent range1 A - 10 A (adjustable via switch in 1 A steps)Characteristicfast (1), medium (2), slow 1 (3), slow 2 (4), slow 3 (5), adjustable via switchSignal outputSwitching element2 x transistor, open collector with pull-up resistorSignal levelOverload, short circuit, switched off: Low, rated operation: High 1 ≥ 90 % I <sub>N</sub> centralised fault signallingDiagnostic output 1 + 2 connected via diodesGeneralPA 6.6 (UL 94 V-0, NFF 12, F2)Housing materialPA 6.6 (UL 94 V-0, NFF 12, F2)Colour of the housingRAL 7012 basalt greyMountingplug-in on LCOS function carrier 22.5 mm (Accessories) DIN rail mounting (EN 60715)Protection classI P20Installation position-Connection type load sideX1: 8-pin multi-point plug, RM 5.08Connection type load sideX2: 12-pin multi-point plug, RM 3.5MTBF69000 h (@ 40 °C, +70 °COperation temperature range -25 °C +55 °CStorage temperature range -25 °C +70 °CDimensions (w × h × d)22.5 × 110.0 × 102.0 mm (including function carrier, without plug-in terminals on the side)Weight Approvals0.200 kg/pieceApprovalscULus (E170585), GL	0 1	Output 1: LED		. ,	
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         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 1 ≥ 90 % I <sub>N</sub> , Low 1 ≤ 90 % I <sub>N</sub> centralised fault signalling       Diagnostic output 1 + 2 connected via diodes         General       PA 6.6 (UL 94 V-0, NFF 12, 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.	Status display output				
Current range1 A - 10 A (adjustable via switch in 1 A steps)Characteristicfast (1), medium (2), slow 1 (3), slow 2 (4), slow 3 (5), adjustable via switchSignal outputSwitching element2 x transistor, open collector with pull-up resistorSingle channel message-Signal levelOverload, short circuit, switched off: Low, rated operation: High I $\ge$ 90 % I <sub>N</sub> , Low I $\le$ 90 % I <sub>N</sub> centralised fault signallingDiagnostic output 1 + 2 connected via diodesGeneralHousing materialHousing materialPA 6.6 (UL 94 V-0, NFF I2, F2)Colour of the housingRAL 7012 basalt greyMountingplug-in on LCOS function carrier 22.5 mm (Accessories) DIN rail mounting (EN 60715)Protection classIP20Installation positionverticalClimatic conditions-Connection type load sideX1: 8-pin multi-point plug, RM 5.08Connection type control sideX2: 12-pin multi-point plug, RM 3.5MTBF690000 h @ 40 °C, 100 operations button, 30 revolutions coding switchOperation temperature range-25 °C +55 °CStorage temperature range-25 °C +55 °CDimensions (w × h × d)22.5 × 110.0 × 102.0 mm (including function carrier, without plug-in terminals on the side)Weight0.200 kg/pieceApprovalscULus (E170585), GL	Switch-on capacity	output			
Characteristicfast (1), medium (2), slow 1 (3), slow 2 (4), slow 3 (5), adjustable via switchSignal outputSwitching element2 x transistor, open collector with pull-up resistorSignal level-Signal levelOverload, short circuit, switched off: Low, rated operation: High 1 ≥ 90 % $ _N$ , Low 1 ≤ 90 % $ _N$ centralised fault signallingDiagnostic output 1 + 2 connected via diodesGeneral-Housing materialPA 6.6 (UL 94 V-0, NFF 12, F2)Colour of the housingRAL 7012 basalt greyMountingplug-in on LCOS function carrier 22.5 mm (Accessories) DIN rail mounting (EN 60715)Protection classIP20Installation position-Connection type load sideX1: 8-pin multi-point plug, RM 5.08Connection type control sideX2: 12-pin multi-point plug, RM 3.5MTBF690000 h @ 40 °C, 100 operations button, 30 revolutions coding switchOperation temperature range-25 °C +55 °CStorage temperature range-40 °C +70 °CDimensions (w × h × d)22.5 × 110.0 × 102.0 mm (including function carrier, without plug-in terminals on the side)Weight0.200 kg/pieceApprovalscULus (E170585), GL		1 A .			
Signal output2 x transistor, open collector with pull-up resistorSwitching element2 x transistor, open collector with pull-up resistorSingle channel message–Signal levelOverload, short circuit, switched off: Low, rated operation: High I $\ge 90 \% I_N$ , Low I $\le 90 \% I_N$ centralised fault signallingDiagnostic output 1 + 2 connected via diodesGeneralHousing materialHousing materialPA 6.6 (UL 94 V-0, NFF 12, F2)Colour of the housingRAL 7012 basalt greyMountingplug-in on LCOS function carrier 22.5 mm (Accessories) DIN rail mounting (EN 60715)Protection classIP20Installation positionverticalClimatic conditions–Connection type load sideX1: 8-pin multi-point plug, RM 5.08Connection type control sideX2: 12-pin multi-point plug, RM 3.5MTBF690000 h @ 40 °C, 100 operations button, 30 revolutions coding switchOperation temperature range-25 °C +55 °CStorage temperature range-40 °C +70 °CDimensions (w × h × d)22.5 × 110.0 × 102.0 mm (including function carrier, without plug-in terminals on the side)Weight0.200 kg/pieceApprovalscULus (E170585), GL			· · ·	· ·	
Switching element $2 x$ transistor, open collector with pull-up resistorSingle channel message-Signal levelOverload, short circuit, switched off: Low, rated operation: High I $\geq$ 90 % I <sub>N</sub> , Low I $\leq$ 90 % I <sub>N</sub> centralised fault signallingDiagnostic output 1 + 2 connected via diodesGeneral-Housing materialPA 6.6 (UL 94 V-0, NFF I2, F2)Colour of the housingRAL 7012 basalt greyMountingplug-in on LCOS function carrier 22.5 mm (Accessories) DIN rail mounting (EN 60715)Protection classIP20Installation positionverticalClimatic conditions-Connection type load sideX1: 8-pin multi-point plug, RM 5.08Connection type control sideX2: 12-pin multi-point plug, RM 3.5MTBF690000 h @ 40 °C, 100 operations button, 30 revolutions coding switchOperation temperature range-25 °CStorage temperature range-40 °C +70 °CDimensions (w × h × d)22.5 × 110.0 × 102.0 mm (incluing function carrier, without plug-in terminals on the side)Weight0.200 kg/pieceApprovalscULus (E170585), GL			,		
Single channel message-Signal levelOverload, short circuit, switched off: Low, rated operation: High I $\geq$ 90 % I <sub>N</sub> , Low I $\leq$ 90 % I <sub>N</sub> centralised fault signallingDiagnostic output 1 + 2 connected via diodesGeneralHousing materialHousing materialPA 6.6 (UL 94 V-0, NFF I2, F2)Colour of the housingRAL 7012 basalt greyMountingplug-in on LCOS function carrier 22.5 mm (Accessories) DIN rail mounting (EN 60715)Protection classIP20Installation positionverticalClimatic conditions-Connection type load sideX1: 8-pin multi-point plug, RM 5.08Connection type control sideX2: 12-pin multi-point plug, RM 3.5MTBF690000 h @ 40 °C, 100 operations button, 30 revolutions coding switchOperation temperature range-25 °C +55 °CStorage temperature range-40 °C +70 °CDimensions (w × h × d)22.5 × 110.0 × 102.0 mm (including function carrier, without plug-in terminals on the side)Weight0.200 kg/pieceApprovalscULus (E170585), GL		2 x tr:	ansistor open coll	ector with pull-up resistor	
Signal levelOverload, short circuit, switched off: Low, rated operation: High $l \ge 90 \ \% \ I_N$ , Low $l \le 90 \ \% \ I_N$ centralised fault signallingDiagnostic output $1 + 2$ connected via diodesGeneralHousing materialHousing materialPA 6.6 (UL 94 V-0, NFF I2, F2)Colour of the housingRAL 7012 basalt greyMountingplug-in on LCOS function carrier 22.5 mm (Accessories) DIN rail mounting (EN 60715)Protection classIP20Installation positionverticalClimatic conditions–Connection type load sideX1: 8-pin multi-point plug, RM 5.08Connection type control sideX2: 12-pin multi-point plug, RM 3.5MTBF690000 h @ 40 °C, 100 operations button, 30 revolutions coding switchOperation temperature range-25 °C +55 °CStorage temperature range-40 °C +70 °CDimensions (w × h × d)22.5 × 110.0 × 102.0 mm (including function carrier, without plug-in terminals on the side)Weight0.200 kg/pieceApprovalscULus (E170585), GL		E A th			
Low, rated operation: High $l \ge 90 % I_N$ , Low $l \le 90 % I_N$ centralised fault signallingDiagnostic output $1 + 2$ connected via diodesGeneralHousing materialHousing materialPA 6.6 (UL 94 V-0, NFF 12, F2)Colour of the housingRAL 7012 basalt greyMountingplug-in on LCOS function carrier 22.5 mm (Accessories) DIN rail mounting (EN 60715)Protection classIP20Installation positionverticalClimatic conditions–Connection type load sideX1: 8-pin multi-point plug, RM 5.08Connection type control sideX2: 12-pin multi-point plug, RM 3.5MTBF690000 h @ 40 °C, 100 operations button, 30 revolutions coding switchOperation temperature range-25 °C +55 °CStorage temperature range-40 °C +70 °CDimensions (w × h × d)22.5 × 110.0 × 102.0 mm (including function carrier, without plug-in terminals on the side)Weight0.200 kg/pieceApprovalscULus (E170585), GL			Overload short o	ircuit switched off	
centralised fault signalling       Diagnostic output 1 + 2 connected via diodes         General       PA 6.6 (UL 94 V-0, NFF 12, F2)         Housing material       PA 6.6 (UL 94 V-0, NFF 12, 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	olghariever	Low, rate			
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	centralised fault signalling				
Housing materialPA 6.6 (UL 94 V-0, NFF I2, F2)Colour of the housingRAL 7012 basalt greyMountingplug-in on LCOS function carrier 22.5 mm (Accessories) DIN rail mounting (EN 60715)Protection classIP20Installation positionverticalClimatic conditions–Connection type load sideX1: 8-pin multi-point plug, RM 5.08Connection type control sideX2: 12-pin multi-point plug, RM 3.5MTBF690000 h @ 40 °C, 100 operations button, 30 revolutions coding switchOperation temperature range-25 °C +55 °CStorage temperature range-40 °C +70 °CDimensions (w × h × d)22.5 × 110.0 × 102.0 mm (including function carrier, without plug-in terminals on the side)Weight0.200 kg/pieceApprovalscULus (E170585), GL	<u> </u>	2.0,	griebene barpar i		
$\begin{array}{c c} Colour of the housing & RAL 7012 basalt grey \\ \hline Mounting & plug-in on LCOS function carrier 22.5 mm (Accessories) DIN rail mounting (EN 60715) \\ \hline Protection class & IP20 \\ \hline Installation position & vertical \\ \hline Climatic conditions & - \\ \hline Connection type load side & X1: 8-pin multi-point plug, RM 5.08 \\ \hline Connection type control side & X2: 12-pin multi-point plug, RM 3.5 \\ \hline MTBF & 690000 h @ 40 °C, 100 operations button, 30 revolutions coding switch \\ \hline Operation temperature range & -25 °C \dots +55 °C \\ \hline Storage temperature range & -40 °C \dots +70 °C \\ \hline Dimensions (w × h × d) & 22.5 × 110.0 × 102.0 mm (including function carrier, without plug-in terminals on the side) \\ \hline Weight & 0.200 kg/piece \\ \hline Approvals & cULus (E170585), GL \\ \hline \end{array}$			PA 6 6 (111 94	V-0 NEE 12 E2)	
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	0		``		
(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	0	plug-in on LCOS fi			
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	Mounting				
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	Protection class		,	,	
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					
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	•		VCI	_	
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			X1· 8-pin multi-n	pint plug_RM 5.08	
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	51				
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		690000 h @ 40 °		1 8/	
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		0+000000			
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					
the side)       Weight     0.200 kg/piece       Approvals     cULus (E170585), GL	0 1 0	22.5 x 110.0 x 102.0			
Approvals cULus (E170585), GL		22.0 ^ 110.0 ^ 102.0			I
Approvals cULus (E170585), GL	Weight			,	
		EN 60950-1, E	· ·		



#### 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





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Description		Part-No.		Туре	PU
Screw terminal	D0 0414	770000 4404			
Rated voltage U <sub>N</sub>	DC 24 V	779000.1121	A^	LCOS-CC-1K-1P16-DC24V	1
Push-In	D0.041/	770400 4404	0.*		
Rated voltage U <sub>N</sub>	DC 24 V	779100.1121	5.	LCOS-CC-1K-1P16-DC24V	1
Input					
Type of function		1-chan	nel 1	pin switching	
Technology		Powerbu	is an	d terminal strip	
Rated voltage U <sub>N</sub>			DC	24 V	
Operation voltage range		D	C 20.	4–28.8 V	
Supply current		DC 32 A	via L	COS Powerbus	
Reverse voltage protection		inte	rnal e	electronics	
Connection type input				-	
Control input (Set / Reset)					
Signal level		DC 24 \	/ acc	c. to EN 61131	
OFF		Pulse with fallir	ig ed	ge >100 ms, <800 ms	
ON		Pulse wi	th fa	lling edge > 1 s	
Isolation voltage		AC	1.5	kV, 1 min.	
Output					
Switching element			Mc	osFet	
Output current		n	nax. [	DC 16 A	
Voltage drop		<1	70 m	ηV (10 A)	
Status display output				ED green flashing: 90 % utilisation g: triggered, LED red: unit off	
Switch-on capacity				000 µF	
Current range		2 A – 16 A (can b	e sei	t via switch in 2 A steps)	
Characteristic	fast (1), me	dium (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 (U	L 94	V-0, NFF I2, F2)	
Colour of the housing				basalt grey	
Mounting	plug-in on L			5 mm (Accessories) DIN rail mounting 60715)	
Protection class			•	20	
Installation position			ve	rtical	
Climatic conditions				-	
Connection type load side		X1: 8-pin m	ulti-p	oint plug, RM 5.08	
Connection type control side				point plug, RM 3.5	
MTBF	690000 h			button, 30 revolutions coding switch	
Operation temperature range				+55 °C	
Storage temperature range				+70 °C	
Dimensions (w × h × d)	22.5 × 110.0 ×		ıg fur	nction carrier, without plug-in terminals of side)	n
Weight		0		kg/piece	
Approvals				170585), GL	
Standards				I 61000, EN 60947-4-1, EN 55022	



A Article available at short notice

### Load monitoring · LCOS-CCI

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



# Dimensions

PIN assignment Load CH2\_012 Load CH2\_012 Load CH2\_034 Load CH1\_078 Load CH1\_078 Load CH1\_078 C-Control \_\_\_\_\_Status CH1 \_\_\_\_\_\_Status CH1 \_\_\_\_\_\_Status CH1 \_\_\_\_\_\_Status CH1 \_\_\_\_\_\_Status CH1

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Description	Part-No. Type	PU
Screw terminal		
Rated voltage U <sub>N</sub>	DC 24 V 773000.2111 A* LCOS-CCI-2K-1P-D	C24V 1
Push-In		
Rated voltage U <sub>N</sub>	DC 24 V 773100.2111 S* LCOS-CCI-2K-1P-D	C24V 1
Note		
	Diversity to provide the vice of the second CO 2 FO	
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	<b>DO 0414</b>	
Rated voltage U <sub>N</sub>	DC 24 V	
Operation voltage range	DC 20.4–28.8 V	
Rated current I <sub>N</sub>	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 flash LED red flashing: triggered, red: OFF	ıing: 90 % I <sub>B</sub>
Switch-on capacity	>10000 µF	
Current range	1 A – 10 A (adjustable via switch in 1 A step	a)
Characteristic		
Characteristic	fast (1), middle (2), slow 1 (3), slow 2 (4), slow 3 (5), adjusta software	able via switch of
Signal output	connuio	
Switching element	Transistor, open collector with pull-up resiste	or
Single channel message	(Status CH1, CH2) Acc. to IEC 61131-2: High level, no errors,	
Single charmer message	(Status CH1, CH2) ACC. to IEC 01131-2. High level, no errors	iow level, litere are
90 % of the rated current I <sub>B</sub>	(Status 90 % CH1, CH2) Acc. to IEC 61131-2: High level <90	% low loval >00 %
5	(Status 90 % CH1, CH2) Acc. to IEC 01131-2. High level <90	70, IOW IEVEL 290 70
Insulation voltage		lite des
centralised fault signalling	(Status Out) Single channel message 1+2, decoupled	i 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) D (EN 60715)	IN rail mounting
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 protecte	d 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 p the side)	olug-in terminals on
Weight	0.200 kg/piece	
Approvals	UL, CE, UL 61010, UL 2367	
Standards		
Stanuarus	EN 61131-2, EN 55016-1-2, EN 60529	



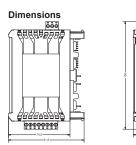
\* S Article on stock A Article available at short notice

A Article available at short hour
 R Article on request

# Load monitoring · LCOS-CCI

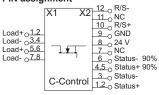
Electronic load monitoring up to DC 10 A, with communication via field bus 1-channel version, two-pole switching, DC 1 A – DC 10 A can be set, characteristic can be set Collective fault message: single/collective/90% message, Remote Control input per channel





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**PIN** assignment X1



Push.         Total           Rated voltage U <sub>N</sub> DC 24 V         773100.1211         S*         LCOS-CCI-H-2P-DC24V           Note         Included in the delivery         Plug-in terminals : CS 5.08 and CS 3.50         Not included in the delivery           Not included in the delivery         Function carrier and other accessories         Input           Rated voltage U <sub>N</sub> DC 24 V         Operation voltage range         DC 24 V           Operation voltage range         DC 23 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 failing edge > 100 ns, <800 ns         ON         Pulse with failing edge > 100 ns, <800 ns         ON           Orput         MosFet and relay (galvanic separation both poles; 500 V)         Output         Current         max. DC 10 A           Voltage dop         <170 NV (10 A)         Status display output         LED green: operating voltage ON, no fault, green flashing: 90 % I <sub>B</sub> Current range         1 A - 10 A (adjustable via switch in 1 A steps)         Characteristic curves or software           Single ohannel message         (Status GH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A         Relay closed: error           Relay closed: error         Relay closed: error	Description		Part-No.		Туре	PL
Push-In         DC 24 V         773100.1211         S*         LCOS-CCI-1K-2P-DC24V           Note         Included in the delivery         Plug-in terminals : CS 5.08 and CS 3.50           Not 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         DC 24 V           Operation voltage range         DC 24 V acc. to EN 61131           Suppiy current         DC 32 A via LCOS Powerbus           Reverse voltage protection         internal electronics           Control input (Set / Reset)         Signal level           Signal level         DC 24 V acc. to EN 61131           OFF         Pulse with falling edge >100 ms, <800 ms           ON         Pulse with falling edge >100 ms, <800 ms           ON         Pulse with falling edge >100 ms, <800 ms           ON         Pulse with falling edge >100 ms, <800 ms           ON         Pulse with falling edge >100 ms, <800 ms           OV         OV         Type           Current         max. DC 10 A           Voltage dop         <170 M (10 A)           Status display output         LED green: operating voltage ON, no fault, green fashing: 90 % 1g           Current arange         1 A - 10 A (adjustable via switch in 1 A s	Screw terminal					
Note         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         Euclided in the delivery           Rated voltage U <sub>N</sub> DC 24 V           Operation voltage range         DC 23 A via LCOS Powerbus           Reverse voltage protection         Internal electronics           Control input (Set / Reset)         Signal level           Signal level         DC 24 V acc. to EN 61131           OFF         Pulse with failing edge > 100 ms, <800 ms	Rated voltage U <sub>N</sub>	DC 24 V	773000.1211	<b>A</b> *	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         Eunction carrier and other accessories           Rated voltage U <sub>N</sub> DC 24 V           Operation voltage range         DC 23 A via LCOS Powerbus           Reverse voltage protection         Internal electronics           Control input (Set / Reset)         Signal level           Signal level         DC 24 V acc. to EN 61131           OFF         Pulse with failing edge >100 ms, <800 ms	Push-In					
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 <sub>N</sub> DC 24 V Operation voltage range DC 20.4–28.8 V Rated current I <sub>N</sub> 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 Puise with falling edge > 10 ms. <800 ms ON Puise with falling edge > 10 ms. <800 ms Signal level DC 24 V acc. to EN 61131 OFF Puise with falling edge > 10 ms. <800 ms ON Puise with falling edge > 10 ms. <800 ms Output Switching element MosFet and relay (galvanic separation both poles: 500 V) Output Output Output CLED green: operating voltage ON, no fault, green flashing: 90 % I <sub>B</sub> LED or grashible via witch 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 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 <sub>B</sub> (Status 90 % CH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A Relay closed: error Relay c	Rated voltage U <sub>N</sub>	DC 24 V	773100.1211	S*	LCOS-CCI-1K-2P-DC24V	1
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 <sub>N</sub> DC 24 V Operation voltage range DC 20.4–28.8 V Rated current I <sub>N</sub> 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 Puise with falling edge > 10 ms. <800 ms ON Puise with falling edge > 10 ms. <800 ms ON Puise with falling edge > 10 ms. <800 ms 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 <sub>B</sub> LED of flashing: tiggered, ed: OFF Switch-on capacity >1000 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 (6), adjustable via switch, see 'characteristic curves' or software Single channel message (Status CH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A Relay closed: error Relay open: no error Sol the rated current I <sub>B</sub> Off the rated current I <sub>B</sub> Characteristic CANOP Software Single channel message (Status 90 % Of the rated current I <sub>B</sub> Communication internal data bus BUS physics CANOP and c. Lo ISO 11898-1 General Protection class (P20) Installation position 2 Ac. 10 ISO 11898-1 General Protection class (P20) Installation position 2 Acc. 10 ISO 11898-1 General Protection class (P20) Installation position 2 Acc. 10 ISO 11898-1 General Protection class (P20) Installation position 2 Acc. 10 ISO 11898-1 General (P20) Installation position 2 Acc. 10 ISO 11898-1	Note					
Not included in the delivery       Function carrier and other accessories         Input       Rated voltage UN         Cated voltage UN       DC 24 V         Operation voltage range       DC 20.4-28 8 V         Rated current IN       DC 10 A         Supply current       DC 32 A via LCOS Powerbus         Reverse voltage protection       internal electronics         Control input (Set / Reset)       DC 24 V acc. to EN 61131         Signal level       DC 24 V acc. to EN 61131         OFF       Pulse with failing edge > 10 oms, <800 ms			Plug_in termin	ale · (	CS 5 08 and CS 3 50	
Input         DC 24 V           Rated voltage U <sub>N</sub> DC 20.4–28.8 V           Rated current I <sub>N</sub> DC 10 A           Supply current         DC 23.4 via LCOS Powerbus           Reverse voltage protection         internal electronics           Control input (Set / Reset)         DC 24 V acc. to EN 61131           Signal level         DC 24 V acc. to EN 61131           OFF         Puise with falling edge > 10 ms, <800 ms			•			
Rated vortent N <sub>N</sub> DC 24 V         Operation voltage range       DC 20.4-28.8 V         Rated current N <sub>N</sub> DC 10 A         Supply current       DC 32 A via LCOS Powerbus         Reverse voltage protection       internal electronics         Control input (Set / Reset)       DC 24 V acc. to EN 61131         Signal level       DC 24 V acc. to EN 61131         OFF       Pulse with falling edge > 10 ms, <800 ms			Function can	iei ai		
Operation voltage range     DC 20.4–28.8 V       Rated current I <sub>N</sub> DC 10 A       Supply current     DC 23 A via LCOS Powerbus       Reverse voltage protection     Internal electronics       Control input (Set / Reset)     DC 24 V acc. to EN 61131       Signal level     DC 24 V acc. to EN 61131       OFF     Pulse with failing edge > 100 ms, <800 ms	•			DC	24.1/	
Rated current Ny       DC 10 A         Supply current       DC 32 A via LCOS Powerbus         Reverse voltage protection       internal electronics         Control input (Set / Reset)       DC 24 V acc. to EN 61131         Signal level       DC 24 V acc. to EN 61131         OFF       Pulse with falling edge > 10 ms, <800 ms	<b>o</b> 11					
Supply current       DC 32 A via LCOS Powerbus         Reverse voltage protection       Internal electronics         Control input (Set / Reset)       DC 24 V acc. to EN 61131         OFF       Pulse with falling edge >100 ms, <800 ms			D			
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 >10 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 % Ig ELD 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 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 Ig (Status 90 % CH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A Relay closed: 90 % Bustlation voltage 2.5 kV, 50 Hz, 1 min. Communication internal Communication intere			DC 22 A			
Control input (Set / Reset)         DC 24 V acc. to EN 61131           Signal level         DC 24 V acc. to EN 61131           OFF         Pulse with falling edge >1 s           Isolation voltage         2.5 kV, 50 Hz, 1 min.           Output         Time.           Switching element         MosFet and relay (galvanic separation both poles: 500 V)           Output current         max. DC 10 A           Voltage drop         <170 mV (10 A)						
Signal level       DC 24 V acc. to EN 61131         OFF       Pulse with falling edge >100 ms, <800 ms	• •		Inte	mare	alectronics	
OFF         Pulse with falling edge >100 ms, <800 ms           ON         Pulse with falling edge >1 s           Solation voltage         2.5 kV, 50 Hz, 1 min.           Output         max. DC 10 A           Switching element         MosFet and relay (galvanic separation both poles: 500 V)           Output current         max. DC 10 A           Voltage drop         <170 mV (10 A)	• • •		DO 611	1 -		
ON       Pulse with failing edge > 1 s         Isolation voltage       2.5 KV, 50 Hz, 1 min.         Output       max. DC 10 A         Switching element       MosFet and relay (galvanic separation both poles: 500 V)         Output current       max. DC 10 A         Voltage drop       <710 mV (10 A)	0					
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 % Ig 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 Ig (Status 90 % CH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A Relay closed: error Relay open: no error 90 % of the rated current Ig (Status 90 % CH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A Relay closed: 90 %, Relay open: 00 % Insulation voltage 2.5 kV, 50 Hz, 1 min. centralised fault signalling – Communication internal Communication internal Communication internal Communication internal Communication internal General Housing material PA 6.6 (UL 94 V-0, NFF 12, 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 Cilmatic 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) Weight 0,200 kg/piece Approvals UL, CE, UL 61010, UL 2367				•	<b>.</b>	
Output         MosFet and relay (galvanic separation both poles: 500 V)           Switching element         MosFet and relay (galvanic separation both poles: 500 V)           Output current         max. DC 10 A           Voltage drop         <170 mV (10 A)	••••					
Switching element       MosFet and relay (galvanic separation both poles: 500 V)         Output current       max. DC 10 A         Voltage drop       <170 MV (10 A)	0		2.5 k	:V, 50	) Hz, 1 min.	
Output current       max. DC 10 A         Voltage drop       <170 mV (10 A)	•					
Voltage drop       <170 mV (10 A)	0	MosFe	, (0			
Status display output       LED green: operating voltage ON, no fault, green flashing: 90 % IB         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       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 IB       (Status 90 % CH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A Relay open: <90 %						
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 <sub>B</sub> (Status 90 % CH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A Relay closed: >90 %, Relay open: <90 %	<b>U</b>					
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         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 IB       (Status 50 % CH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A Relay closed: >90 %, Relay open: <90 %	Status display output	LED green				
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 open: no error         90 % of the rated current I <sub>B</sub> (Status 90 % CH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A Relay open: no error         90 % of the rated current I <sub>B</sub> (Status 90 % CH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A Relay open: no error         90 % of the rated current I <sub>B</sub> (Status 90 % CH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A Relay open: no error         90 % of the rated current I <sub>B</sub> (Status 90 % CH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A Relay open: -90 %         Insulation voltage       2.5 kV, 50 Hz, 1 min.         centralised fault signalling       -         Communication       internal data bus         BUS physics       CANopen acc. to ISO 11898-1         General       PA 6.6 (UL 94 V-0, NFF 12, 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 60068-2-61 Fc, shock: EN 60068-2-27 Ea Climatic conditions			LED red flas			
Characteristic       fast (1), middle (2), slow 1 (3), slow 2 (4), slow 3 (5), adjustable via switch, see 'characteristic curves' or software         Signal output       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 <sub>B</sub> (Status 90 % CH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A Relay closed: >90 %, Relay open: <90 %					•	
Signal output         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 <sub>B</sub> (Status 90 % CH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A Relay closed: >90 %, Relay open: <90 %	0				• /	
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 <sub>B</sub> (Status 90 % CH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A Relay closed: >90 %, Relay open: <90 %	Characteristic	fast (1), middle				
Single channel message       (Status CH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A         Relay closed: error       Relay closed: error         Relay open: no error       Relay open: no error         90 % of the rated current I <sub>B</sub> (Status 90 % CH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A         Relay closed: >90 %, Relay open: <90 %	Signal output					
Relay closed: error Relay open: no error         90 % of the rated current I <sub>B</sub> (Status 90 % CH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A Relay closed: >90 %, Relay open: <90 %	Switching element		One relay v	vith 1	S per signal type	
Relay open: no error90 % of the rated current IB(Status 90 % CH1, CH2) 1 N/O contact, AC/DC 250 V, 1 A Relay closed: >90 %, Relay open: <90 %	Single channel message	(Sta	atus CH1, CH2) 1	N/O	contact, AC/DC 250 V, 1 A	
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 voltage2.5 kV, 50 Hz, 1 min.centralised fault signalling–Communication internal–Communication general–Housing materialPA 6.6 (UL 94 V-0, NFF 12, F2)Mountingplug-in on LCOS function carrier 22.5 mm (Accessories) DIN rail mounting (EN 60715)Protection classIP20Installation positionanyVibration resistanceVibration: EN 60068-2-6 Fc, shock: EN 60068-2-27 EaClimatic conditionsAcc. to EN 60721 Stationary use at weather protected locationsConnection type load sideX1: 8-pin multi-point plug, RM 5.08Operation temperature range0 °C +75 °CDirange temperature range-40 °C +70 °CDimensions (w × h × d)22.5 × 110.0 × 102.0 mm (including function carrier, without plug-in terminals or the side)Weight0.200 kg/pieceApprovalsUL, CE, UL 61010, UL 2367						
Relay closed: >90 %, Relay open: <90 %	90 % of the rated current L	(Statur				
Insulation voltage       2.5 kV, 50 Hz, 1 min.         centralised fault signalling       –         Communication internal       –         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 +75 °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 or the side)         Weight       0.200 kg/piece         Approvals       UL, CE, UL 61010, UL 2367	50 % of the fated current IB	(Status				
centralised fault signalling       –         Communication internal       internal data bus         BUS physics       CANopen acc. to ISO 11898-1         General       Housing material         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       -40 °C +75 °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 or the side)         Weight       0.200 kg/piece         Approvals       UL, CE, UL 61010, UL 2367	Insulation voltage					
Communication internal         Communication         BUS physics         General         Housing material         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 resistance         Vibration resistance         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 or the side)         Weight       0.200 kg/piece         Approvals       UL, CE, UL 61010, UL 2367	-		2.0 h	, ot		
Communication       internal data bus         BUS physics       CANopen acc. to ISO 11898-1         General       PA 6.6 (UL 94 V-0, NFF 12, 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 or the side)         Weight       0.200 kg/piece         Approvals       UL, CE, UL 61010, UL 2367	0 0					
BUS physics       CANopen acc. to ISO 11898-1         General       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 or the side)         Weight       0.200 kg/piece         Approvals       UL, CE, UL 61010, UL 2367			int	ernal	data bus	
General       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 (incluing function carrier, without plug-in terminals or the side)         Weight       0.200 kg/piece         Approvals       UL, CE, UL 61010, UL 2367						
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 +75 °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 or the side)         Weight       0.200 kg/piece         Approvals       UL, CE, UL 61010, UL 2367			CANOPEL	acc.		
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 or the side)         Weight       0.200 kg/piece         Approvals       UL, CE, UL 61010, UL 2367			DA 66 /II	1.04		
(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 or the side)         Weight       0.200 kg/piece         Approvals       UL, CE, UL 61010, UL 2367	0	plug-in on LCC	,			
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 or the side)         Weight       0.200 kg/piece         Approvals       UL, CE, UL 61010, UL 2367				(EN 6	60715)	
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 or the side)         Weight       0.200 kg/piece         Approvals       UL, CE, UL 61010, UL 2367	Protection class			IF	20	
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 or the side)         Weight       0.200 kg/piece         Approvals       UL, CE, UL 61010, UL 2367	Installation position			a	ny	
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 or the side)         Weight       0.200 kg/piece         Approvals       UL, CE, UL 61010, UL 2367	Vibration resistance	Vibra	ation: EN 60068-2		•	
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 or the side)         Weight       0.200 kg/piece         Approvals       UL, CE, UL 61010, UL 2367	Climatic conditions	Acc. to E	N 60721 Stationa	ary us	se at weather protected locations	
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 or the side)         Weight       0.200 kg/piece         Approvals       UL, CE, UL 61010, UL 2367						
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 or the side)         Weight       0.200 kg/piece         Approvals       UL, CE, UL 61010, UL 2367	Connection type control side		X2: 12-pin r	nulti-	point plug, RM 3.5	
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 or the side)         Weight       0.200 kg/piece         Approvals       UL, CE, UL 61010, UL 2367					1 0,	
Dimensions (w × h × d)       22.5 × 110.0 × 102.0 mm (including function carrier, without plug-in terminals or the side)         Weight       0.200 kg/piece         Approvals       UL, CE, UL 61010, UL 2367						
Weight         0.200 kg/piece           Approvals         UL, CE, UL 61010, UL 2367	0 1 0	22.5 × 110.0 × 10		ng fur	ction carrier, without plug-in terminals c	n
Approvals UL, CE, UL 61010, UL 2367	Weight		0			
	•					
Ciandards EN 01131-2, EN 00029						
	••					



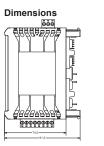
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# Load monitoring · LCOS-CCI

#### 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





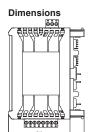
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Description		Part-No.		Туре	PU
Screw terminal	<b>DO 011</b>				
Rated voltage U <sub>N</sub> Push-In	DC 24 V	773000.1111	A*	LCOS-CCI-1K-1P-DC24V	1
Rated voltage U <sub>N</sub>	DC 24 V	773100.1111	S*	LCOS-CCI-1K-1P-DC24V	1
Input					
Type of function		1-chan	nel 1	pin switching	
Technology				d terminal strip	
Rated voltage U <sub>N</sub>				24 V	
Operation voltage range		DC	20.4	1–28.8 V	
Rated current I <sub>N</sub>				_	
Supply current		DC 32 A	via L	COS Powerbus	
Reverse voltage protection		inte	nal e	lectronics	
Control input (Set / Reset)					
Signal level		DC 24 \	/ acc	. to EN 61131	
OFF		Pulse with fallin	g ed	ge >100 ms, <800 ms	
ON			· ·	ling edge > 1 s	
Isolation voltage				:V, 1 min.	
Output					
Switching element			Мо	sFet	
Output current		m	ax. D	DC 10 A	
Voltage drop				V (10 A)	
Status display output	Output 1: L			ED green flashing: 90 % utilisation	
				: triggered, LED red: unit off	
Switch-on capacity			>100	00 µF	
Current range				via switch in 1 A steps)	
Characteristic	fast (1), medium	n (2), slow 1 (3),	slow	2 (4), slow 3 (5), adjustable via switch	
Signal output					
Switching element	2 >	transistor, oper	n colle	ector with pull-up resistor	
Single channel message				_	
Signal level	Overload, short circ	cuit, switched off		ν, rated operation: High I ≥ 90 % I <sub>N</sub> , Low I % I <sub>N</sub>	
centralised fault signalling	[	Diagnostic outpu	1+	2 connected via diodes	
Communication internal					
Communication		inte	ernal	data bus	
BUS physics		CANopen acc.	to IS	O 11898-1, 11898-2	
Participants			64	units	
BUS topology			Li	ne	
Transfer rate			1 M	Baud	
Bus length			Max.	25 m	
Galvanic isolation			50	0 V	
General					
Housing material		PA 6.6 (U	_ 94	V-0, NFF I2, F2)	
Colour of the housing		RAL	7012	basalt grey	
Mounting	plug-in on LCO			5 mm (Accessories) DIN rail mounting 60715)	
Protection class				20	
Installation position			ver	tical	
Connection type load side		X1: 8-pin m	ulti-p	pint plug, RM 5.08	
Connection type control side				point plug, RM 3.5	
MTBF	690000 h @ 4			button, 30 revolutions coding switch	
Operation temperature range	0			+55 °C	
Storage temperature range				+70 °C	
Dimensions (w × h × d)	22.5 × 110.0 × 102		g fun	ction carrier, without plug-in terminals on side)	
Weight		0.		(g/piece	
Approvals				is, GL	
Standards	EN 60050			61000, EN 60947-4-1, EN 55022	



#### 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





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Description		Part-No.		Туре	PL
Screw terminal					
Rated voltage U <sub>N</sub>	DC 24 V	773000.1121	<b>A</b> *	LCOS-CCI-1K-1P16-DC24V	1
Push-In					
Rated voltage U <sub>N</sub>	DC 24 V	773100.1121	S*	LCOS-CCI-1K-1P16-DC24V	1
Input					
Type of function				pin switching	
Technology		Powerbu		d terminal strip	
Rated voltage U <sub>N</sub>				24 V	
Operation voltage range		DC		4–28.8 V	
Rated current I <sub>N</sub>		50.00.1		-	
Supply current		000270		COS Powerbus	
Reverse voltage protection		inte	rnal e	electronics	
Control input (Set / Reset)		50.041			
Signal level				. to EN 61131	
OFF			· ·	ge >100 ms, <800 ms	
ON				ling edge > 1 s	
Isolation voltage		AC	1.5	κV, 1 min.	
Output					
Switching element				sFet	
Output current				DC 16 A	
Voltage drop				NV (10 A)	
Status display output		tput 2: LED red fla	shing	ED green flashing: 90 % utilisation g: triggered, LED red: unit off	
Switch-on capacity			>100	000 μF	
Current range				via switch in 2 A steps)	
Characteristic	fast (1), medi	um (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				data bus	
BUS physics		CANopen acc.	to IS	SO 11898-1, 11898-2	
Participants				units	
BUS topology				ine	
Transfer rate				Baud	
Bus length				. 25 m	
Galvanic isolation			50	10 V	
General					
Housing material				V-0, NFF I2, F2)	
Colour of the housing				basalt grey	
Mounting	plug-in on LC		(EN 6	5 mm (Accessories) DIN rail mounting 60715)	
Protection class				220	
Installation position				tical	
Connection type load side				oint plug, RM 5.08	
Connection type control side				point plug, RM 3.5	
MTBF	690000 h @			button, 30 revolutions coding switch	
Operation temperature range				+55 °C	
Storage temperature range				+70 °C	
Dimensions (w × h × d)	22.5 × 110.0 × 1	02.0 mm (includir		nction carrier, without plug-in terminals o side)	n
Weight		0.		kg/piece	
Approvals				n preparation	
Standards	EN 6095			61000, EN 60947-4-1, EN 55022	



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# Load monitoring · Bus coupler

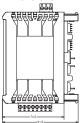
#### Bus coupler for LCOS CCI and LOCC-Box PROFINET



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#### Dimensions



Description Field bus coupler PROFINET	Part-No. Type	PU
	778000.1301 <b>S</b> * 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 <sup>2</sup> (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	oob bash type b	
Status display communication	Power: red/green	
olalus display communication	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 <sub>eff</sub>	
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	



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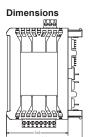
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# Load monitoring · Bus coupler

#### Bus coupler for LCOS CCI and LOCC-Box EtherCAT

Description





Field bus coupler EtherCAT		
	778000.1401 <b>S</b> * 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 <sup>2</sup> (AWG 24 – AWG 12)	
Communication LOCC-PADS	0 1 0 1 , ( ,	
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	
Conoral	OUT LINK/ACT	
General Rated voltage range	DC 20.4 V – 30 V	
	DC 20.4 V - 30 V <5 W	
Power consumption 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 <sub>eff</sub>	
Installation position	any	
Operation temperature range	-25 °C +55 °C	
Storage temperature range	-25 °C +85 °C	
MTBF	- 00 05 % Dil act condensing	
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		
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	

Part-No.

Туре

PU



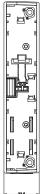
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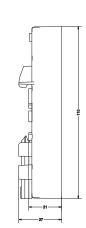
# Load monitoring · LCOS accessories

#### LCOS function carrier 22.5 mm Closed design Integrated PE contact



Dimensions





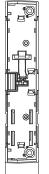
Description		Part-No.		Туре	PU	
Function carrier						
Width	22.5 mm	780201.225.1	<b>A</b> *	LCOS-FT-PE-225-00-00-1	1	
	22.5 mm	780201.225.2	S*	LCOS-FT-PE-225-00-00-1	10	
Slots	7802	01.225.1		780201.225.2		
Slots	1 × 22.5mm					
General						
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)					
Colour 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					



#### LCOS function carrier 22.5 mm Modular design Integrated PE contact







Description		Part-No.		Туре	PU	
Function carrier						
Width	22.5 mm	780331.225.1	<b>A</b> *	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					



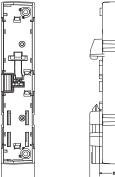
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Description

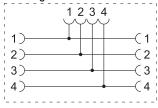
#### LCOS function carrier 22.5 mm with integrated power bus Modular expandable, integrated PE contact



#### Dimensions



#### PIN assignment



22.5 mm	780402.225.1	<b>A</b> *	LCOS-FT-PE-225-0P-02-1	1	
22.5 mm	780402.225.2	S*	LCOS-FT-PE-225-0P-02-1	10	
70	0400 005 4		700 400 005 0		
/8					
	max. AC				
		<80	) mV		
		× 22	2.5mm		
	PA 6.6 (UI	_ 94 '	V-0, NFF I2, F2)		
pebble grey					
Can be snapped onto hat profile TS35 (EN 60715)					
_					
vertical					
_					
22.5 × 28.0 × 110.0 mm					
0.040 kg/piece 0.060 kg/piece					
UL, GL					
EN 60947-1, EN 50178, EN 50124-1, EN 50175, IEC 60068-2-42, 43, 8, 27, EN 60064-1					
-40 °C +85 °C					
-40 °C +85 °C					
IP20					
5 % – 95 % without condensation					
15 g 11 ms acc. to IEC 60068-2-27					
4 g acc. to EN 60068-2-8					
	22.5 mm 78	22.5 mm 780402.225.2 780402.225.1 max max. AC PA 6.6 (UI PA 6.6 (UI Can be snapped on 22.5 × 0.040 kg/piece EN 60947-1, EN 50178, EN 5012 EN 60947-1, EN 50178 EN 60947-1, EN 50078 EN 60947-1, EN 50078 EN 60947-1, EN 50078 EN 60947-1, EN	22.5 mm 780402.225.2 \$* 780402.225.1 max. AC/DC max. AC/DC <pre></pre>	22.5 mm 780402.225.2 S* LCOS-FT-PE-225-0P-02-1 780402.225.1 780402.225.2 max. AC/DC 500 V max. AC/DC 16 A/channel <80 mV 1 × 22.5mm PA 6.6 (UL 94 V-0, NFF I2, F2) pebble grey Can be snapped onto hat profile TS35 (EN 60715) 	

Part-No.

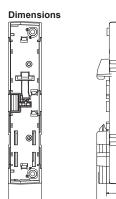
Туре

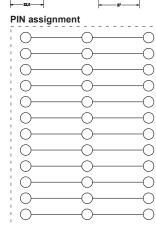


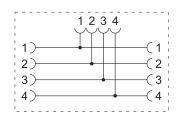
PU

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









Description		Part-No.		Туре	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	78	0403.225.1		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		m	ax. C	OC 30 V		
Operating current	max. DC 2 A/contact					
System current	max. DC 8 A					
Pole number		Input/output:	10-р	in, outlet: 2×10-pin		
Contact material			Сι	ıZn		
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 on	to ha	t profile TS35 (EN 60715)		
Application height	-					
Installation position	vertical					
MTBF				-		
Dimensions (w × h × d)	22.5 × 28.0 × 110.0 mm					
Weight	0.0	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 registered						

Shock resistance Vibration resistance 15 g 11 ms acc. to IEC 60068-2-27 4 g acc. to EN 60068-2-8

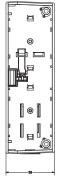


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### LCOS function carrier 35 mm Closed design Integrated PE contact



Dimensions



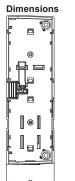
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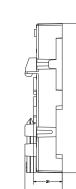
Description		Part-No.		Туре	PU
Function carrier					
Width	35.0 mm	780201.350.1	<b>A</b> *	LCOS-FT-PE-350-00-00-1	1
	35.0 mm	780201.350.2	S*	LCOS-FT-PE-350-00-00-1	10
Slots	7802	01.350.1		780201.350.2	
Slots			1 × 3	35mm	
General					
Housing material		PA 6.6 (U	L 94	V-0, NFF I2, F2)	
Colour of the housing		1	bebb	le grey	
Mounting	Ca	n be snapped on	to ha	t profile TS35 (EN 60715)	
Application height				-	
Installation position			ve	tical	
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 E	EN 60068-2-8	



# LCOS function carrier 35 mm Modular design Integrated PE contact







Description		Part-No.		Туре	PU
Function carrier					
Width	35.0 mm	780331.350.1	<b>A</b> *	LCOS-FT-PE-350-00-03-1	1
	35.0 mm	780331.350.2	S*	LCOS-FT-PE-350-00-03-1	10
Slots	7803	31.350.1		780331.350.2	
Slots			1×3	35mm	
General					
Housing material		PA 6.6 (UI	_ 94 '	V-0, NFF I2, F2)	
Colour of the housing		k	bebbl	le grey	
Mounting	Ca	an be snapped on	to ha	t profile TS35 (EN 60715)	
Application height				-	
Installation position			ver	tical	
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				N
General ambient conditions					
Operation temperature range		-40	°C.	+85 °C	
Storage temperature range	-40 °C +85 °C				
Protection class			IP	20	
Relative air humidity		5 % – 95 %	with	out condensation	
Shock resistance		15 g 11 ms a	acc. t	to IEC 60068-2-27	
Vibration resistance		4 g acc	. to E	EN 60068-2-8	



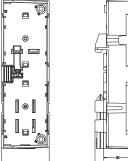
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Description

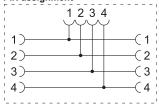
### LCOS function carrier 35 mm with integrated power bus Modular expandable, integrated PE contact







**PIN** assignment



Function carrier						
Width	35.0 mm	780402.350.1	<b>A</b> *	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	7:	80402.350.1		780402.350.2		
Operating voltage			AC	/DC 500 V		
Operating current				16 A/channel		
Voltage drop		max. At		) mV		
Slots			-00			
Slots			1 x 3	35mm		
General			1			
Housing material		PA 6 6 (UI	94	V-0, NFF I2, F2)		
Colour of the housing		,		e grey		
Mounting				t profile TS35 (EN 60715)		
Application height				_		
Installation position			ver	tical		
MTBF				_		
Dimensions (w × h × d)		35.0 ×	28.0	× 110.0 mm		
Weight	0.0	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			IP	20		
Relative air humidity		5 % - 95 %	with	out condensation		
Shock resistance		15 g 11 ms a	acc. t	to IEC 60068-2-27		

Part-No.

Vibration resistance

4 g acc. to EN 60068-2-8

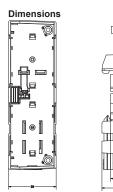
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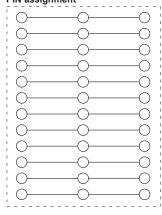


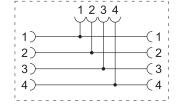
### LCOS function carrier 35 mm with integrated power bus and data module Modular expandable, integrated PE contact





PIN assignment





Description		Part-No.		Туре	PU	
Function carrier						
Width	35.0 mm	780403.350.1	<b>A</b> *	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	780	403.350.1		780403.350.2		
Operating voltage		max	. AC/	DC 500 V		
Operating current		max. AC	C/DC	16 A/channel		
Voltage drop			<80	) mV		
Data module						
Material PCB			FI	R4		
Material connector			PE	-HT		
Operating voltage		m	ax. C	DC 30 V		
Operating current		max.	DC 2	2 A/contact		
System current		n	nax. [	DC 8 A		
Pole number		Input/output:	10-p	in, outlet: 2×10-pin		
Contact material			Сι	ıZn		
Slots						
Slots	1 × 35mm					
General						
Housing material		PA 6.6 (UI	_ 94 '	V-0, NFF I2, F2)		
Colour of the housing		k	bebbl	e grey		
Mounting	C	an be snapped on	to ha	t profile TS35 (EN 60715)		
Application height				-		
Installation position			ver	tical		
MTBF				-		
Dimensions (w × h × d)		35.0 ×	28.0	× 110.0 mm		
Weight	0.04	0 kg/piece		0.060 kg/piece		
Approvals				, 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 %	with	out condensation		

Shock resistance Vibration resistance 15 g 11 ms acc. to IEC 60068-2-27 4 g acc. to EN 60068-2-8



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



Dimensions	
PIN assignment	
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Description		Part-No.		Туре	PU
Function carrier					
Width	57.5 mm	780700.575.1	S*	LCOS-FTE-PE-575-NC-00-1	1
Electrical data Power Bus		78	070	0.575.1	
Operating voltage		max	. AC	C/DC 30 V	
Operating current		max	. AC	/DC 32 A	
Voltage drop			<80	) mV	
Connection device		Spring terminal 3×	16 n	nm <sup>2</sup> , 3×10 mm <sup>2</sup> with AE	
Connection device		Spring terminal 3>	٨W	G 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 hous	ing	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		p	ebbl	le grey	
Mounting		Can be snapped ont	o ha	t profile TS35 (EN 60715)	
Application height		20	000	m max.	
Installation position			ver	tical	
MTBF		9	, 10,	11, 12	
Protection class				1	
Over voltage category				II	
Degree of polution				2	
Dimensions ( $w \times h \times d$ )		57.5 × 1	28.0	× 110.0 mm	
Weight		0.2	200	kg/piece	
Approvals			UL	, GL	
Standards	EN 60934	, EN 60664-1, EN 609	947-	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			IF	220	
Relative air humidity		5 % – 95 %	with	out condensation	
Shock resistance		15 g 11 ms a	ICC.	to IEC 60068-2-27	
Vibration resistance		0		EN 60068-2-8	



Description

Function carrier

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



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Width	57.5 mm	780701.575.1	<b>A</b> *	LCOS-FTE-PE-575-NC-01-1	1	
Electrical data Power Bus		-		1.575.1		
Operating voltage	max. AC/DC 30 V					
Operating current	max. AC/DC 32 A					
Voltage drop				) mV		
Connection device				nm <sup>2</sup> , 3×10 mm <sup>2</sup> with AE		
Connection device		Spring terminal 3	×AW	G 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 fur	nctior	housing 22.5 mm		
General						
Housing material		PA 6.6 (UI	_ 94 \	V-0, NFF I2, F2)		
Colour of the housing		ł	bebbl	e grey		
Mounting		Can be snapped on	to hat	t profile TS35 (EN 60715)		
Application height		2	000 r	n max.		
Installation position			ver	tical		
MTBF		ç	, 10,	11, 12		
Protection class				1		
Over voltage category				II		
Degree of polution			2	2		
Dimensions (w × h × d)		57.5 ×	28.0	× 110.0 mm		
Weight		0.	200 k	g/piece		
Approvals			UL,	GL		
Standards	EN 6093	4, EN 60664-1, EN 60	947-1	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			IP	20		
Relative air humidity		5 % – 95 %	with	out condensation		
Shock resistance				o IEC 60068-2-27		
Vibration resistance				N 60068-2-8		
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Part-No.

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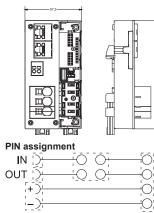
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### PROFINET Function carrier with feed DC 24 V, integrated PE contact Power bus: DC 24 V, 32 A max. Control voltage connection: DC 24 V



# Dimensions

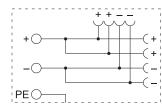




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Description	Part-No. Type	PU
Function carrier		
Width	57.5 mm 780730.575.1 <b>S*</b> LCOS-FTE-PE-575-PN-00-1	1
Electrical data Power Bus	780730.575.1	
Operating voltage	max. AC/DC 30 V	
Operating current	max. AC/DC 32 A	
Voltage drop	<80 mV	
Connection device	Spring terminal 3×16 mm <sup>2</sup> , 3×10 mm <sup>2</sup> 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 <sup>2</sup> (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		
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 6114	0
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	





Description

Function carrier Width

### 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



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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 <sup>2</sup> , 3×10 mm <sup>2</sup> 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 <sup>2</sup> (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	l l
Over voltage category	II
Degree of polution	2
Dimensions ( $w \times h \times d$ )	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
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Part-No.

57.5 mm

Туре

780740.575.1 S\* LCOS-FTE-PE-575-EC-00-1

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Description

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



Dimensions	T
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Description		Fart-NO.		Type	FU
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	<b>A</b> *	LCOS-ZB-KL-SS-350-15-12	10
				700004 000 0	
General	7805	921.000.2		780921.002.2	
Design	_	0	term	ninal RM 3,50	
Connection device	Р	ush-In		Screw terminal	
Connection cross-section		•		1.5 mm <sup>2</sup>	
Connection cross-section				– AWG 16	
Housing material		PA 6	6.6 (l	JL 94 V-0)	
Colour of the housing			bl	ack	
Operating voltage		max	. AC	/DC 160 V	
Operating current			max	<. 8 A	
System current max.				-	
Over voltage category			I	III	
Degree of polution				3	
Pole number			1	12	
Contact material			Cu	NiZn	
Dimensions (w × h × d)		43.8 ×	10.2	2 × 19.3 mm	
Weight		0.	110	kg/piece	
Approvals			ι	JR	
Standards				_	
General ambient conditions					
Operation temperature range		-40	°C.	+85 °C	
Storage temperature range		-40	°C.	+85 °C	
Protection class			IF	200	

Part-No.

Туре

PU



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



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Description		Part-No.		Туре	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	<b>A</b> *	LCOS-ZB-KL-SS-508-25-8	10
General	7800	922.000.2		780922.002.2	
Design	1000		term	ninal RM 5.08	
Connection device	P	ush-In	tom	Screw terminal	
Connection cross-section			08 -	$2.5 \text{ mm}^2$	
Connection cross-section			-	– AWG 12	
Housing material				JL 94 V-0)	
Colour of the housing			•	ack	
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			Cu	NiZn	
Dimensions (w × h × d)		43.1 ×	12.7	7 × 16.8 mm	
Weight		0.1	100	kg/piece	
Approvals			ι	JR	
Standards				-	
General ambient conditions					
Operation temperature range		-40	°C.	+85 °C	
Storage temperature range		-40	°C.	+85 °C	
Protection class			IF	20	

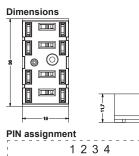


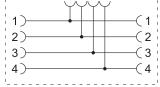
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### Power module AC/DC 500 V/16 A per phase 4-pin, 22.5 mm





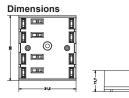


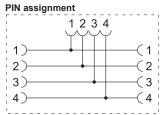
Description	Part-No.	Туре	PU		
Power module					
	780910.225.2 <b>S</b> *	LCOS-ZB-PM-225-00-1	10		
	780910.225.3 <b>S</b> <sup>*</sup>	LCOS-ZB-PM-225-00-1	50		
General	780910.225.2	780910.225.3			
Material	PA 6.6 (UL 94	4 V0, NNF I2, F2)			
Operating voltage	max. A0	C/DC 500 V			
Operating current	max. AC/E	IC 16 A/phase			
System current max.	AC/I	DC 64 A			
Pole number	4				
Contact material	CuCrSiTi				
Mounting	latches into position on LCOS function carrier 22.5 mm				
Dimensions ( $w \times h \times d$ )	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	1		
General ambient conditions					
Operation temperature range	-40 °C	-40 °C +85 °C			
Storage temperature range	-40 °C +85 °C				
Protection class		IP20			
Relative air humidity	5 % – 95 % wit	5 % – 95 % without condensation			
Shock resistance	15 g 11 ms acc. to IEC 60068-2-27				
Vibration resistance	4 g acc. to	4 g acc. to EN 60068-2-8			



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







Description	Part-No.	Туре	PU	
Power module				
	780910.350.2 <b>S</b> *	LCOS-ZB-PM-350-00-1	10	
	780910.350.3 <b>S</b> *	LCOS-ZB-PM-350-00-1	50	
General	780910.350.2	780910.350.3		
Material	, ,	V0, NNF I2, F2)		
Operating voltage	max. AC	/DC 500 V		
Operating current	max. AC/D0	C 16 A/phase		
System current max.	AC/D	C 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			



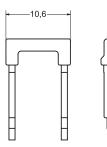
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### Insulated power bridge AC/DC 500 V/16 A per phase 1-pin



Dimensions



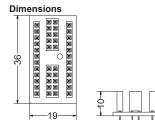
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Description	Part-No.	Туре	PU		
Power bridge					
	780961.001.2 <b>S</b> *	LCOS-ZB-PB-01-00	10		
	780961.001.3 <b>S</b> *	LCOS-ZB-PB-01-00	50		
General	780961.001.2	780961.001.3			
Material	PA 6.6 (UL 94	V0, NNF I2, F2)			
Operating voltage	max. AC	/DC 500 V			
Operating current	max. AC/D	C 16 A/phase			
System current max.	AC/E	OC 64 A			
Pole number	1				
Contact material	CuCrSiTi				
Mounting	latches into position on LCOS f	latches into position on LCOS function carrier 22.5 mm or 35 mm			
Dimensions (w × h × d)					
Weight	0.020	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	-40 °C +85 °C			
Storage temperature range	-40 °C +85 °C				
Protection class	IP20				
Relative air humidity	5 % – 95 % wit	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			



LCOS data module 12-pin 22.5 mm





Description	Part-No.	Туре	PU		
LCOS data module					
	780900.225.2 <b>S</b> *	LCOS-ZB-DM-225-12-00-1	10		
	780900.225.3 <b>S</b> *	LCOS-ZB-DM-225-12-00-1	50		
General	780900.225.2	780900.225.3			
Material PCB		-R4			
Material connector		E-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-	Input/output: 12-ping, outlet: 2×10-pin			
Contact material	(	CuZn			
Mounting	latches into position on L0	latches into position on LCOS function carrier 22.5 mm			
Dimensions ( $w \times h \times d$ )	36.0 × 10	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	-40 °C +85 °C			
Protection class	I	IP20			
Relative air humidity	5 % – 95 % wit	5 % – 95 % without condensation			
Shock resistance	15 g 11 ms acc	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



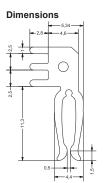
Dir	mensions		
36			
		-	

Description	Part-No.		Туре	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		FF	34		
Material connector	1	PE-	HT		
Operating voltage	max	. D	C 30 V		
Operating current	max. D	2 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 % w	thc	out condensation		
Shock resistance	15 g 11 ms acc. to IEC 60068-2-27				
Vibration resistance	4 g acc. to	E	N 60068-2-8		



### **LCOS PCB contact** matches LCOS power module 1-pin





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 5	0124-1
General ambient conditions		
Operation temperature range	-40 °C +85 °C	
Storage temperature range	-40 °C +85 °C	



- A Article available at short noticer
   R Article on request

## Accessories



Description	Part-No.		Туре	PU
Replace front plate, closed, function housing 22.5 mm	780600.225.3	<b>A</b> *	LCOS-ZB-FPL-225-00-1	50
Replace front plate, closed, function housing 22.5 mm	780600.225.4	<b>A</b> *	LCOS-ZB-FPL-225-00-1	100
Replace front plate, closed, function housing 35 mm	780600.350.3	<b>A</b> *	LCOS-ZB-FPL-350-00-1	50
Replace front plate, closed, function housing 35 mm	780600.350.4	<b>A</b> *	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









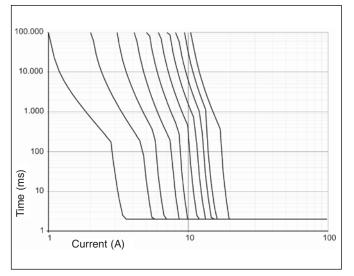


# LCOS-CC · Characteristic Curves

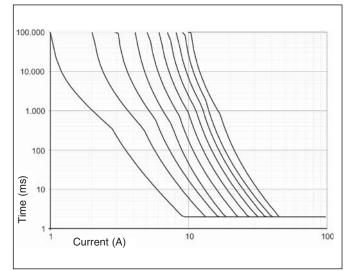
#### All devices have the same characteristic curves

#### 1-10 A (6A)

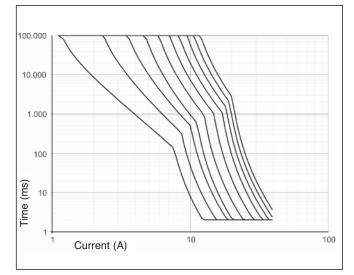
#### Switch position 1: Characteristic fast

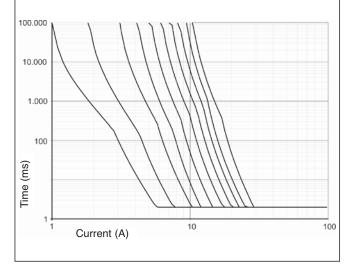


Switch position 3: Characteristic slow-1



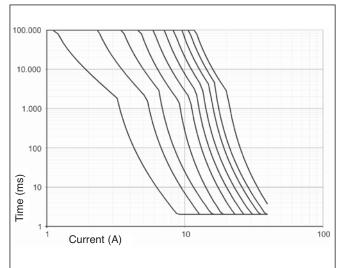






#### Switch position 2: Characteristic medium

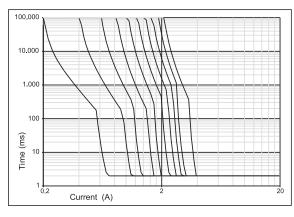




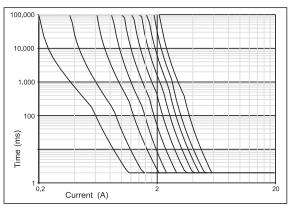
# LCOS-CC · Characteristic Curves

#### **Characteristic Curves 0-2 A**

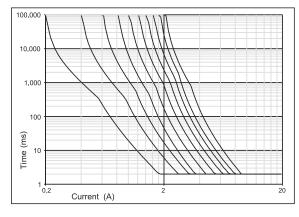
#### Switch position 1: Characteristic fast



Switch position 2: Characteristic medium

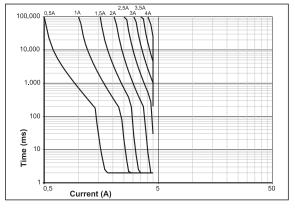


Switch position 3: Characteristic slow

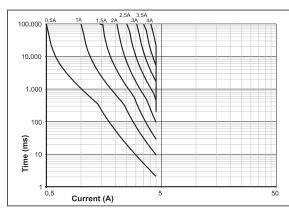


#### **Characteristic Curves NEC Class 2**

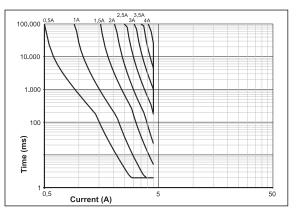
Switch position 1: Characteristic fast



Switch position 3: Characteristic slow



Switch position 2: Characteristic medium



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