Automation Solutions

LOCC-Box
Current Control

Reliable protection of DC 12/24 V circuits

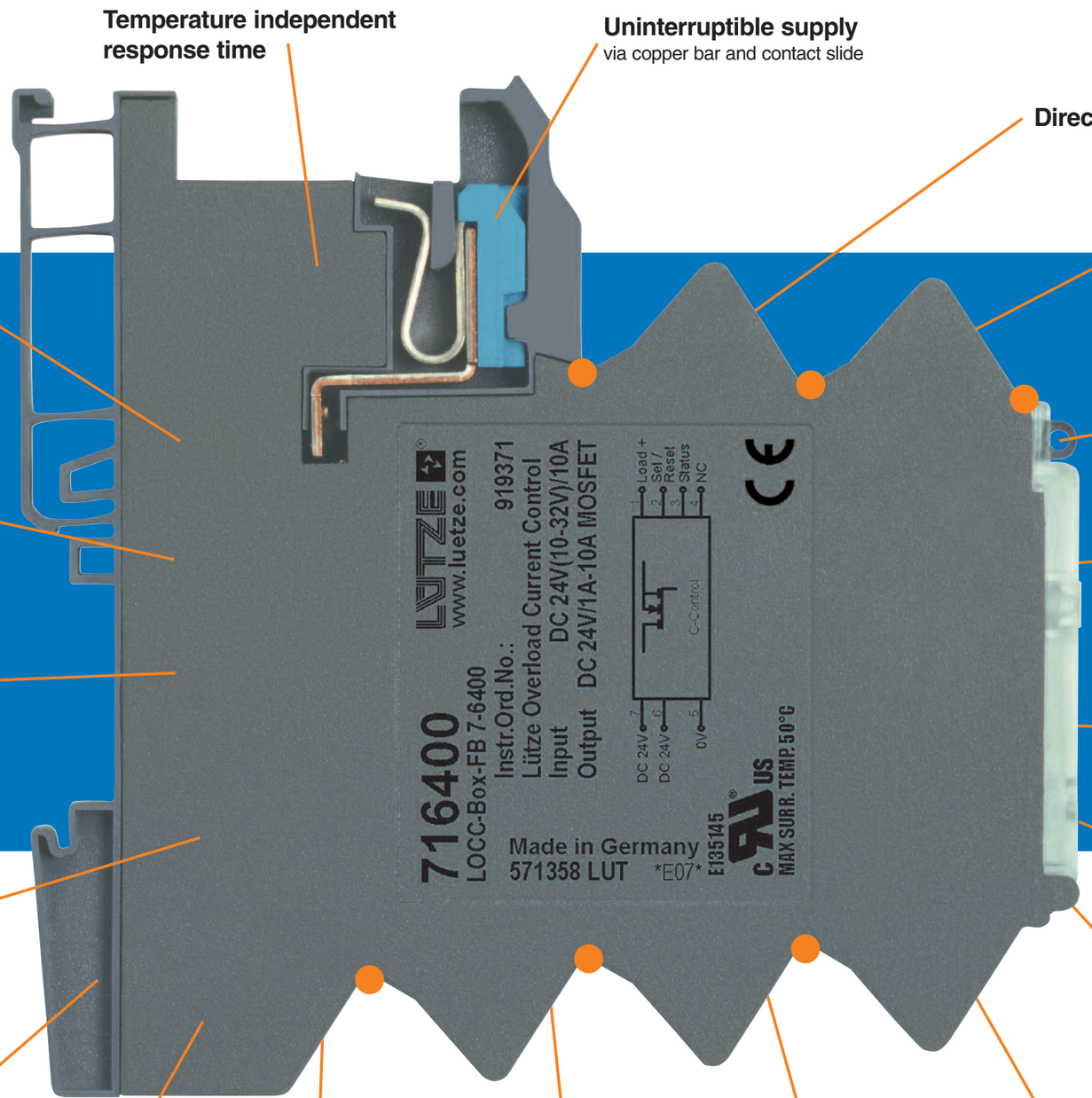
Intelligent safeguarding of selectivity

Modular and flexible

LUTZE

Systematic Technology

Modular, flexible and safe: The intelligent Current Control System **LOCC-**Box/ **LOC C-**Box-Net



Temperature independent response time

Uninterruptible supply
via copper bar and contact slide

Direct supply

0 V

Flammability class
per UL 94-V0

Devices can be removed without interrupting the supply circuit

Settings can be sealed with lead seal

Status Indicators
- Operation
- Fault
- 90% load

“Power-ON” effect
to switch on capacitive loads

Adjustable characteristic

Non-volatile storage of the last state

Adjustable rated current

Manual On/Off

Spring terminal

Optional: Interface
(only 716410)

8.1 mm

Output “Load”

Remote On/Off

Individual and centralised fault signalling

Contact slots
for attaching potential bridges

LOCC-Box / LOCC-Box-Net • Example Application

Standard Application

without supply set, art. no. 716425

with supply set, art. no. 716425

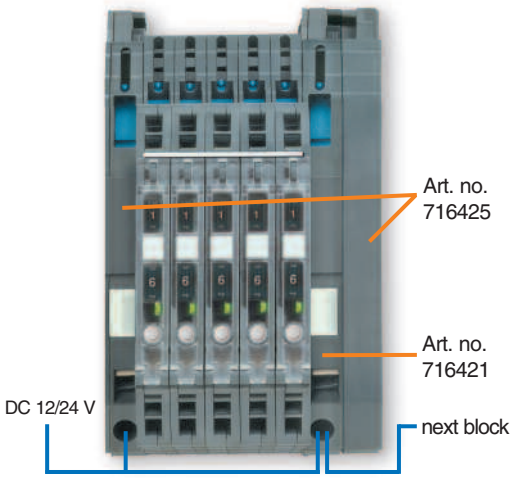
Use with additional supply terminals

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

The supply terminal is accessed via an aperture in the left hand side wall. This enables a variable positioning in the system construction. The maximum total current can thus be increased to 70 A.

Dual supply left

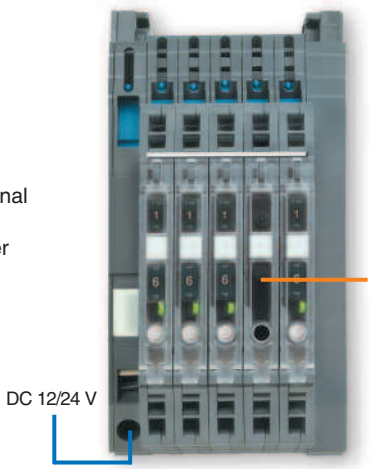
Additional supply in the middle



Additional supply right **or** outlet to next block

Individual construction with distance terminal

Empty housing as placeholder



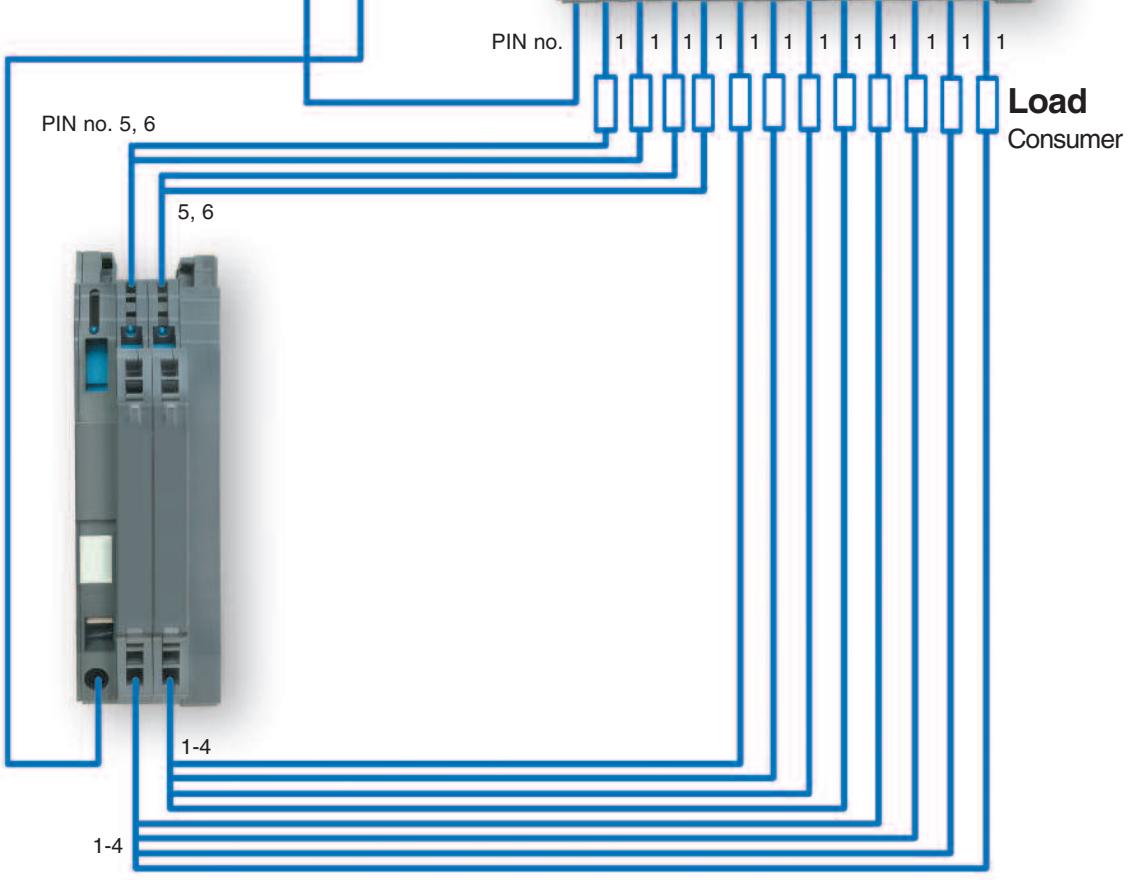
LOCC-Box / LOCC-Box-Net • Example Application

0V Collective Terminal

The 0V collective terminal 716420 enables the 0V return from the load to the 0V supply in the tightest space.
The integrated sliding contact enables an insulation measurement when the contact is open.

Power Supply
e.g. art. no. 722805
24 V/20 A

Standard Application
with supply set, art. no. 716425

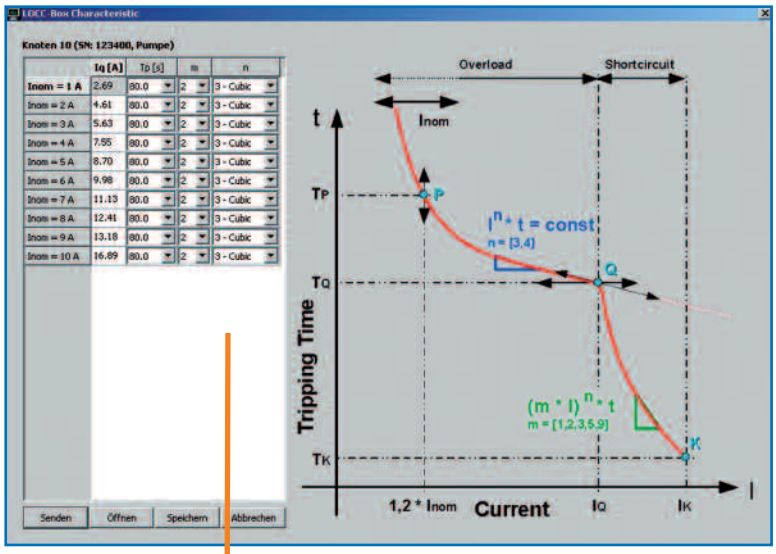


Load
Consumer

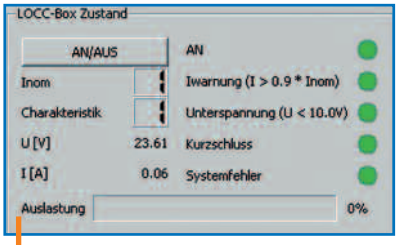
Construction of the 0V Collective terminal
with supply set
Art. no. 716425

LOCC Pads*

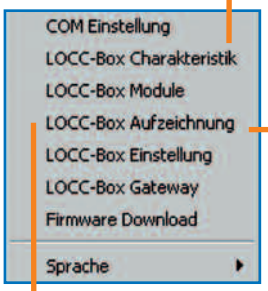
Software for parameterising the LOCC Box Net
and analysing and diagnosing 12/24 V DC circuits



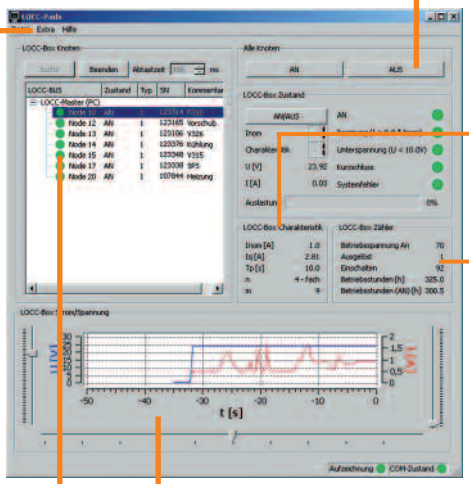
Parameter settings for the parameterisable characteristic curve no. 10



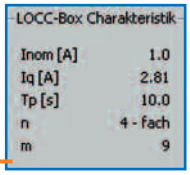
Displays the operating state, current range/characteristic, the load of the characteristic curve and the instantaneous current and voltage values



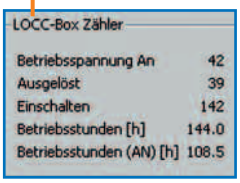
Menu “Extra”



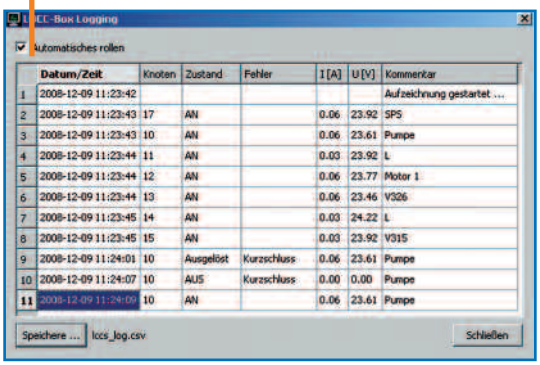
Overall View



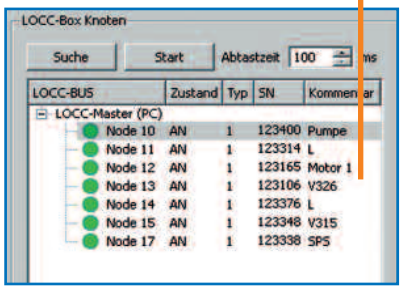
Displays the parameters for the selected characteristic curve



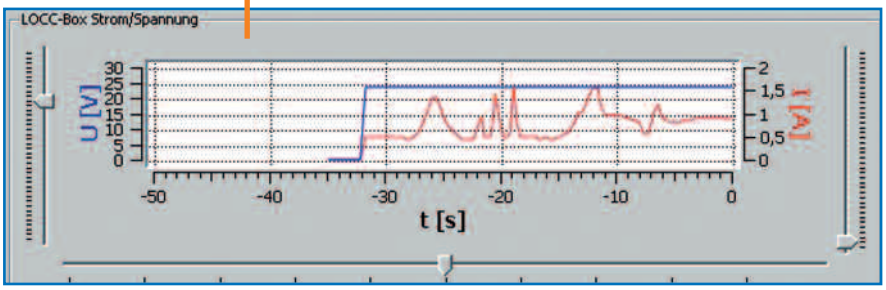
Reproduces the current counter readings of the modules selected



Record of all events such as “ON”, “OFF”, “SHORT CIRCUIT” with date and time



Overview of all connected modules



Plotter function for the module selected - current/voltage curve (analyse)

* in connection with a gateway, e.g. art. no. 716459 (RS232/CANopen)

LOCC-Box / LOCC-Box-Net • Overview / Accessories






Current Range		Characteristic Curve		Status Output			Remote Input	Bus Connection	Software	Gateway	Art. No.
10, adjustable in 1 A steps from 1 A to 10 A		5, fast acting/ medium/slow-1 /slow-2/slow-3	5, fast/medium/ slow-1/slow-2/ slow-3 + 1, programmable	active low after overload or short circuit	active low after overload or short circuit + man. OFF	parameterisable	ON / OFF via impulse length	Yes	LOCC-Pads	CANopen, USB, RS232	
•		•		•			•				716400
•		•			•		•				716401
•			•			•	•	•	•	•	716410

Accessories

Module	Article Number	Type	PU
Gateway (USB, CANopen, RS232)	716459	LOCC-Box-GW 7-6459	1
Supply terminal with breakout for the Copper bar for increased current	716421	LOCC-Box-EKL 7-6421	2
Distance terminal without contact	716422	LOCC-Box-DKL 7-6422	2
LOCC-Box Empty housing without terminals	716424	LOCC-Box-DY 7-6424	2
Supply set (Supply and End terminal)	716425	LOCC-Box-ES 7-6425	1
0V-Collective terminal	716420	LOCC-Box-SK 7-6420	2

Jumper comb	Article Number	Type	PU
Jumper comb 8poles, 6A, white	716428	LOCC-Box-BKW 7-6428	5
Jumper comb 8poles, 6A, red	716429	LOCC-Box-BKW 7-6429	5
Jumper comb 8poles, 6A, blue	716430	LOCC-Box-BKW 7-6430	5
Jumper comb 16poles, 6A, white	716438	LOCC-Box-BKW 7-6438	5
Jumper comb 16poles, 6A, red	716439	LOCC-Box-BKW 7-6439	5
Jumper comb 16poles, 6A, blue	716440	LOCC-Box-BKW 7-6440	5

Identification Plate	Article Number	Type	PU
Identification plate 5x5mm, 200 pieces, white	716431	LOCC-Box-BZW 7-6431	1
Identification plate 5x5mm, 200 pieces, red	716432	LOCC-Box-BZW 7-6432	1
Identification plate 5x5mm, 200 pieces, blue	716433	LOCC-Box-BZW 7-6433	1
Identification plate 5x5mm, 200 pieces, yellow	716434	LOCC-Box-BZW 7-6434	1
Identification plate 12x6mm, 120 pieces, white	716441	LOCC-Box-BZW 7-6441	1

Miscellaneous	Article Number	Type	PU
Copper bar 1m	716426	LOCC-Box-CU 7-6426	1
Cover for copper bar 1m	716427	LOCC-Box-CU 7-6427	1

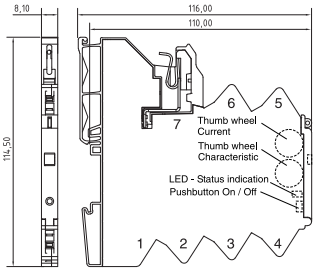
LOCC-Box • Technical Data

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

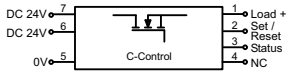
Description		Part-No.	Type	PU
Spring terminal				
Nominal voltage	DC 12 / 24 V	716400	LOCC-Box-FB 7-6400	1
	DC 12 / 24 V	716401	LOCC-Box-FB 7-6401	1

Input	**LOCC-Box-FB 7-6400**	**LOCC-Box-FB 7-6401**
Nominal voltage	DC 12 / 24 V	
Operation voltage range	DC 10 V – 32 V	
Rated current	DC 10 A	
Supply current	DC 40 A over Cu-rails 10 × 3 mm	
Reverse voltage protection	internal electronics	
Termination	screwless disconnect slide	
Control input (Set / Reset)		
Signal level	DC 24 V (EN 61131)	
Fall time	Pulse with falling edge >100 ms, <800 ms	
Rise time	Pulse with falling edge > 1 s	
Connection	Spring terminal 0.25–2.5 mm^2	
Output		
Switching element	MosFet	
Output current	max. DC 10 A	
Voltage drop	<170 mV (10 A)	
Status Indication	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, medium-slow, slow 1 (3), slow 2 (4), slow 3 (5)	
Signal output		
Signal level	DC 12/24 V: Operating voltage present, no error; DC 0 V: error, output switched off	DC 12/24 V: Operating voltage present, no error; DC 0 V: error, output switched off and manual "OFF"
Switching element	Transistor, collector with pull-up resistance	
General		
Housing material	PA 6.6 (UL 94-V0; NFF 12, F2)	
Field installation	rail TS 35 (EN 50022)	
Protection class	IP 20	
Installation postition	Optional	
Termination	Spring terminal 0.25–2.5 mm^2	
Operation temperature range	-25 °C – 50 °C	
Storage temperature range	-40 – 85 °C	
Dimensions (w × h × d) in mm	8.1 × 114.5 × 116.0	
Weight (kg/piece)	0.120	
Approvals	cURus	
Standards	EN 60950-1; EN 61131-1,2; EN 61000; EN 60947-4-1; EN 55022	

Dimensions



PIN assignment

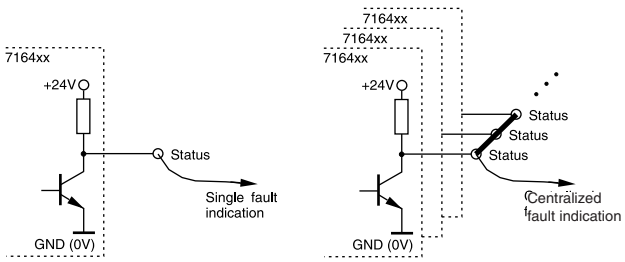


1: + Output
2: Control input (Set/Reset)
3: Status output
4: NC
5: 0V
6: + Supply (alternative)
7: + Supply

Charakteristics see Page 11

Accessories see Page 7

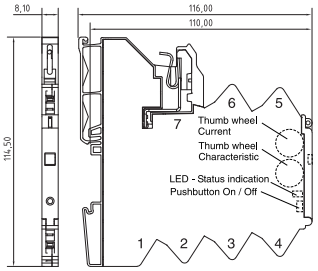
Signal output



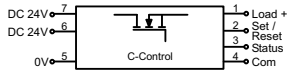
LOCC-Box-Net • Technical Data

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-speed, slow 1, -2, -3

Dimensions



PIN assignment



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

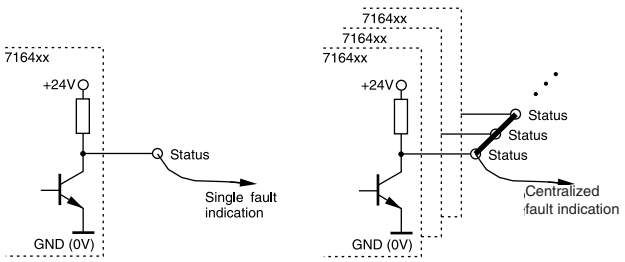
Charakteristics see Page 11

Accessories see Page 7

Description		Part-No.	Type	PU
Spring terminal				
Nominal voltage	DC 12 / 24 V	716410	LOCC-Box-Net 7-6410	1

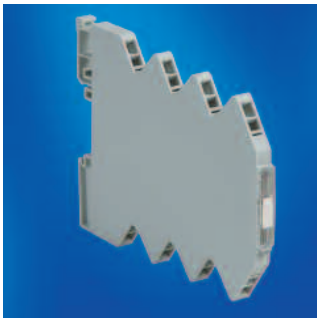
Input	**LOCC-Box-Net 7-6410**
Nominal voltage	DC 12 / 24 V
Operation voltage range	DC 10 V – 32 V
Rated current	DC 10 A (. . . .)
Supply current	DC 40 A over Cu rail 10 × 3 mm
Reverse voltage protection	internal electronics
Termination	screwless disconnect slide
Control input (Set / Reset)	
Signal level	DC 24 V (EN 61131)
Fall time	Pulse with falling edge >100 ms, <800 ms
Rise time	Pulse with falling edge > 1 s
Connection	Spring terminal 0.25–2.5 mm^2
Output	
Switching element	MosFet
Output current	max. DC 10 A
Voltage drop	<170 mV (10 A)
Status Indication	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, medium-slow, slow 1 (3), slow 2 (4), slow 3 (5)
Signal output	
Signal level	DC 12/24 V: Operating voltage present, no error; DC 0 V: error, output switched off, programmable
Switching element	Transistor, collector with pull-up resistance
General	
Housing material	PA 6.6 (UL 94-V0; NFF 12, F2)
Field installation	rail TS 35 (EN 50022)
Protection class	IP 20
Installation postition	Optional
Termination	Spring terminal 0.25–2.5 mm^2
Operation temperature range	-25 °C – 50 °C
Storage temperature range	-40 – 85 °C
Dimensions (w × h × d) in mm	8.1 × 114.5 × 116.0
Weight (kg/piece)	0.120
Approvals	cURus
Standards	EN 60950-1; EN 61131-1,2; EN 61000; EN 60947-4-1; EN 55022

Signal output

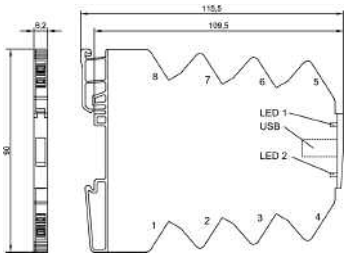


LOCC-Box-Net • Gateway

Gateway for LOCC-Box Net (716410)
Input: LOCCbus (LIN)
Output: USB, RS 232, CANopen



Dimensions



PIN assignment

Description		Article Number	Type	PU
Screw terminal				
Rated voltage	DC 12/24V	on request	-	1
Spring terminal				
Rated voltage	DC 12/24V	716459	LOCC-Box-GW 7-6459	1

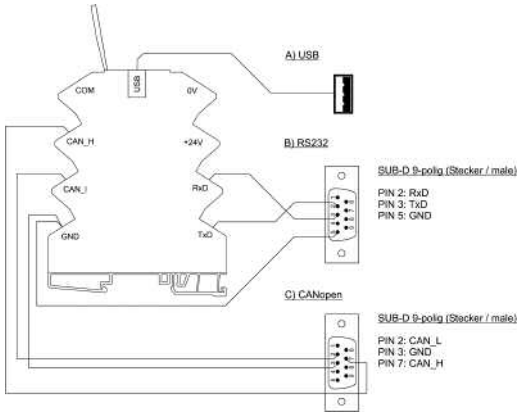
Input	
Bus System	LOCCbus, based on LIN
Access method	Single-Master - Multiple Slave
Bus technology	Line
Physical level	1-wire
Participants	max. 254
Bus length	max. 40 m
Transfer rate	9600 Baud
Data rate	8 Bit + fixed parity
Transfer protocol	Modified multi-drop

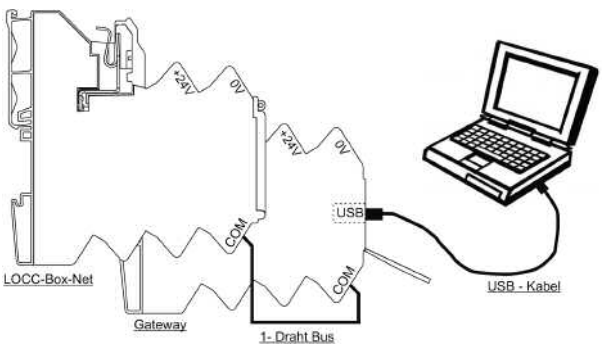
Output side	**USB**	**RS232**	**CANopen**
Bus system	USB 2.0 Full-Speed	RS232	CANopen
Transfer rate	12 Mbit/s	600 - 11500 bit/s	10 - 1000 kbit/s

General data	
Nominal voltage	DC 12/24 V
Operating voltage range	DC: 10.0 V - 26.4 V
Rated current	max. 50 mA
Reverse voltage protection	Yes
Status indicators	LED 1 green, / red: USB, RS232, Firmware; LED 2 green/red: CANopen
Isolation voltage	1.0 kV
Housing material	PA 6.6 (UL 94 V0, NFF 12, F2)
Installation	rail TS 35 (EN 50022)
Protection rating?	IP20
Fitted position	Optional
Connector type	Screw / spring terminal : 0.14 - 2.5 mm² (with AE 1.5 mm²)
Operating temperature range	-20 °C - 60 °C
Storage temperature range	-40 °C - 85 °C
Dimensions (WxHxD)	6.2 x 90.0 x 115.0 mm
Weight	0.060 kg
Standards	EN 60950-1; EN 1131-1,2; EN 60898; EN 60947-4-1: EN 50081
Approvals	CE

Accessories			
	Article Number	**Type**	**VE**
Identification plate 4 x 11 mm, white	681313	BZT-0411	100
Isolation plate	760809	TP 7-0809	5
Labels for A4 laser printer, un-perforated	681031	LEB-A4	1
Labels for laser printer, 4.23 x 11 mm (sheet with 1056 labels)	681034	LEB-0411	1

Connection

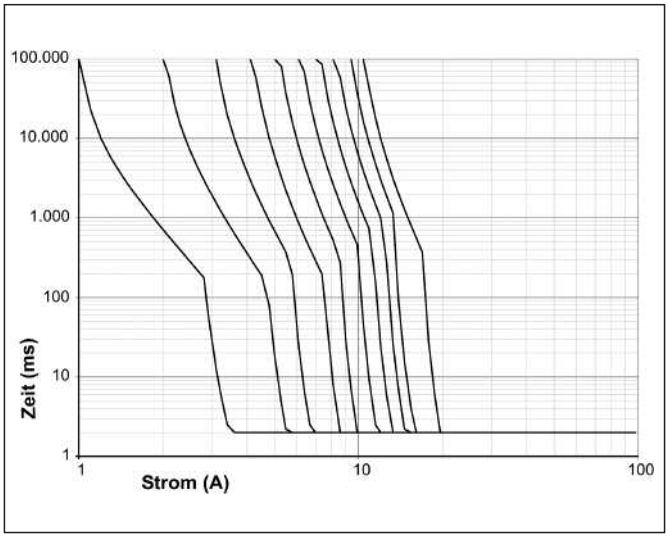




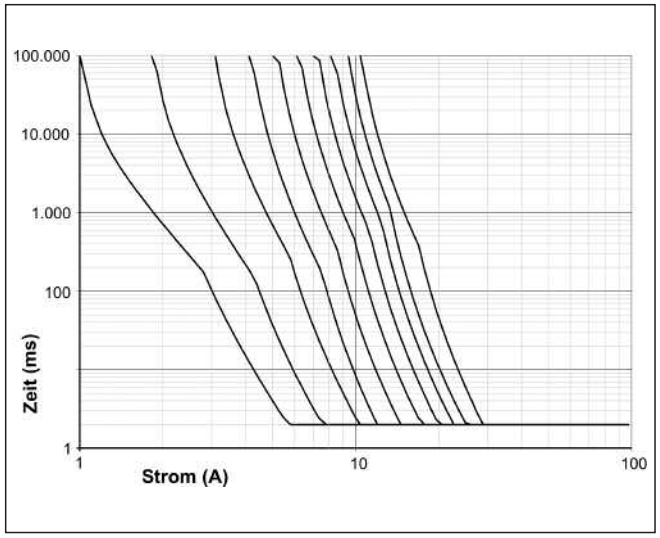
LOCC-Box / LOCC-Box-Net • Characteristic Curves

All device variants incorporate the same characteristics
Extensible
Customer specific characteristics - parameterisable with LOCC-Box-Net

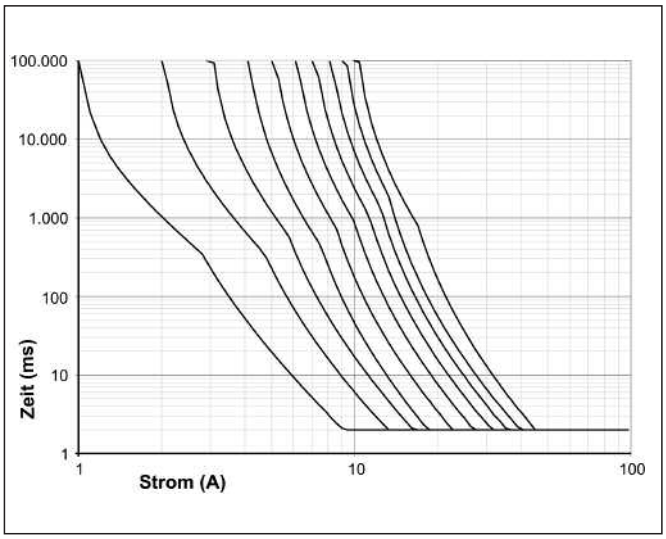
Switch position 1: Characteristic fast



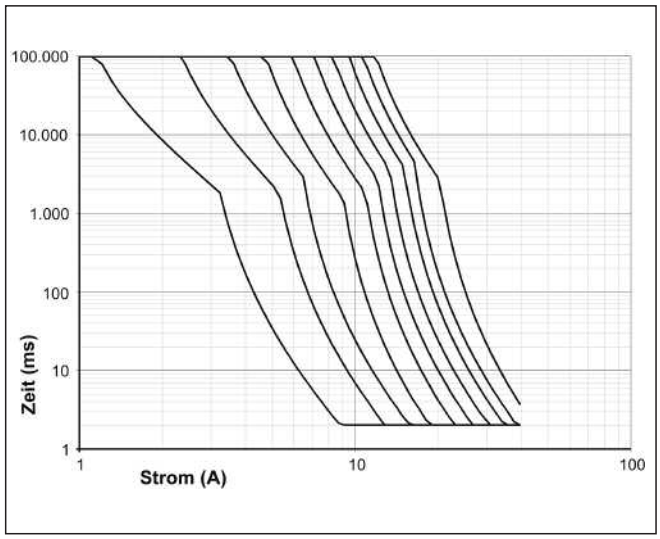
Switch position 2: Characteristic medium



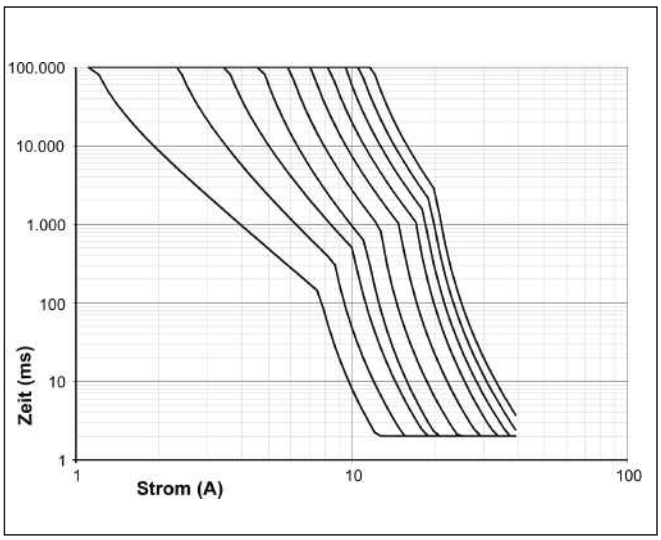
Switch position 3: Characteristic slow-1



Switch position 4: Characteristic slow-2



Switch position 5: Characteristic slow-3



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