



■ Control Solutions

# **LÜTZE**

## **Modular housing system for Industrial Automation**

# Open, modular, universal: The modular housing system LÜTZE

**Flexible:**

Use of the housing as a standalone solution or as a modular I/O system

**Labelling:**

There are 3 standard markers independent of the housing which can be assigned with 18 symbols in total

**Approvals:**

World-wide operation with UL approvals

**Coding:**

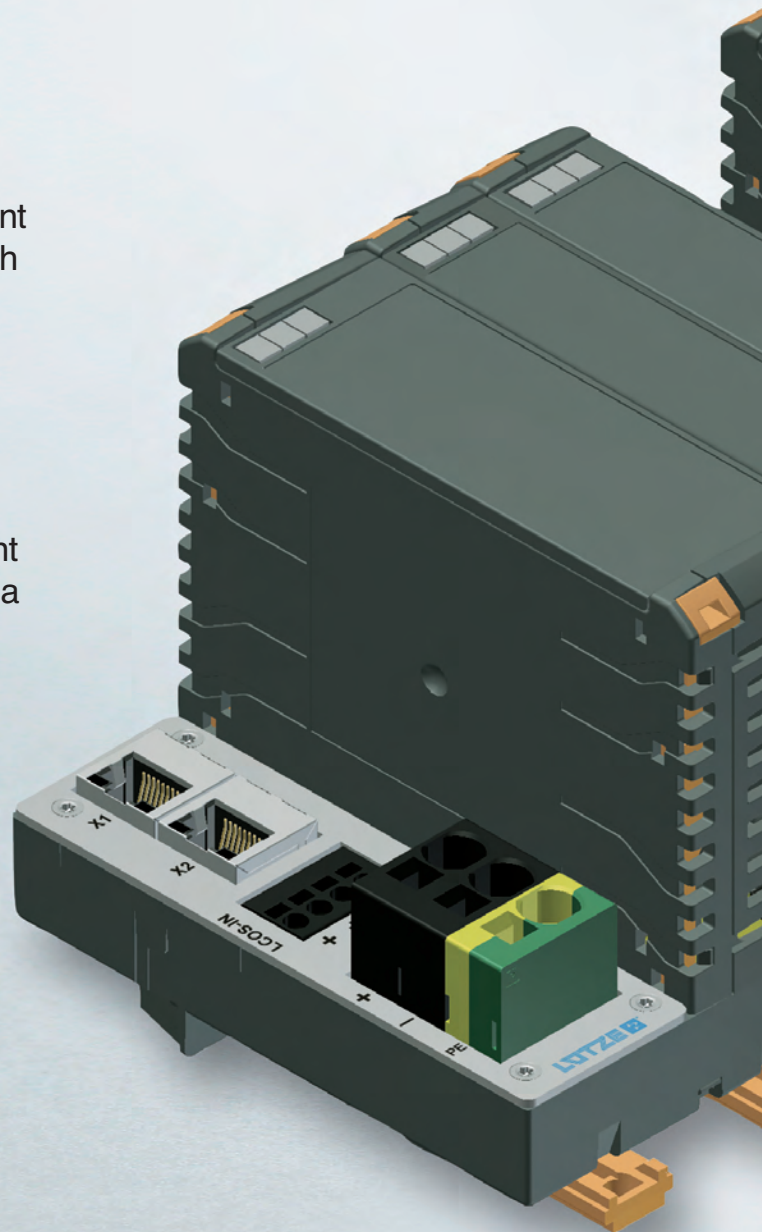
Protection against connector misalignment thanks to freely adjustable encoding with a total of 64 options

**Simplified installation:**

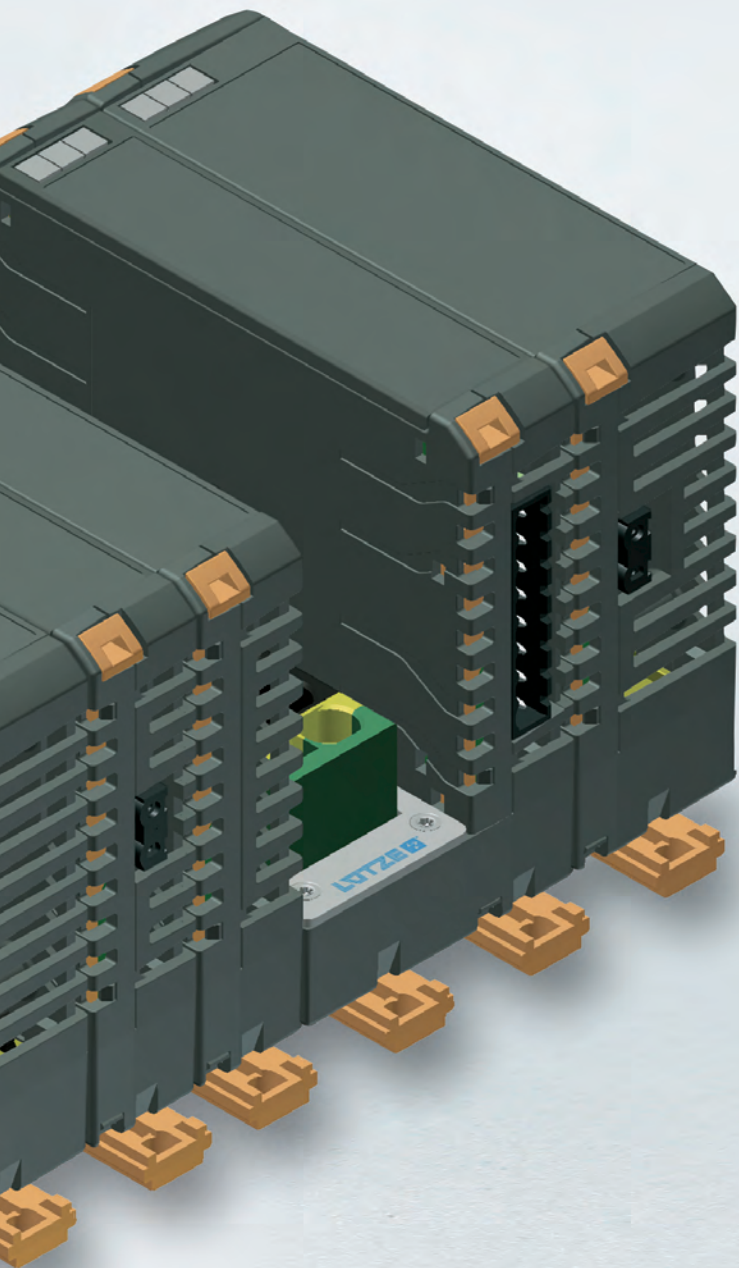
Jumpers instead of wiring! Via insulated jumpers in the data and power bus area

**Environmental conditions:**

-40 °C to +85 °C, V0 and the NFF I2, F2 enable use in harsh environments



# new intelligent LCOS

**Universal connection technology:**

Whether spring, screw, plugged or permanent; the customer decides what is to be used

**Connection points:**

The system provides up to 42 connection points independent of the housing

**Data bus:**

Any device communication can be established now or subsequently via 12 data contacts

**PE contact:**

The direct-to-rail contacting PE contact provides the correct protection in any situation

**Power bus:**

The four-wire power bus permits a field-side supply via a 1/2/3-phase system with a nominal current of 16 A per conductor

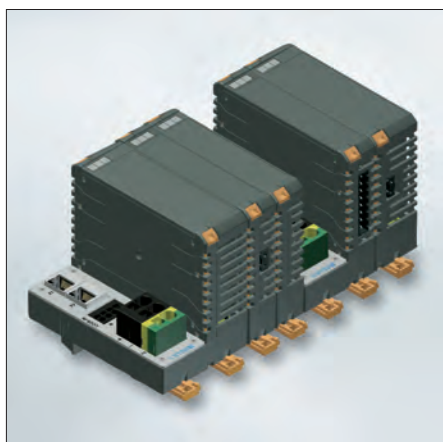
**Service:**

Customer-specific finishing of the front plate. Delivery in different colours



# Modular housing system • LCOS

## System setup



### Individual or modular operation

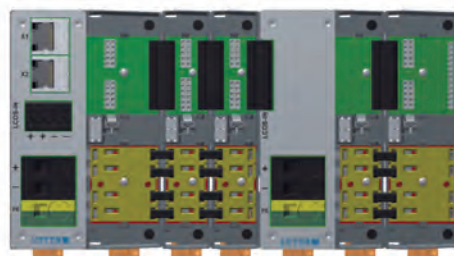
The system comprises of function housings and carriers in various widths. Both parts together form a housing which can be used individually or in modular form.

If the system is intended for modular use, it can be supplied by data or power via function carriers with in-feed possibility.

The internal data bus contains 12 data lines. The power bus provides 64 A during operation with one potential and 16 A during operation with four potentials.

### Plug-in data/power modules

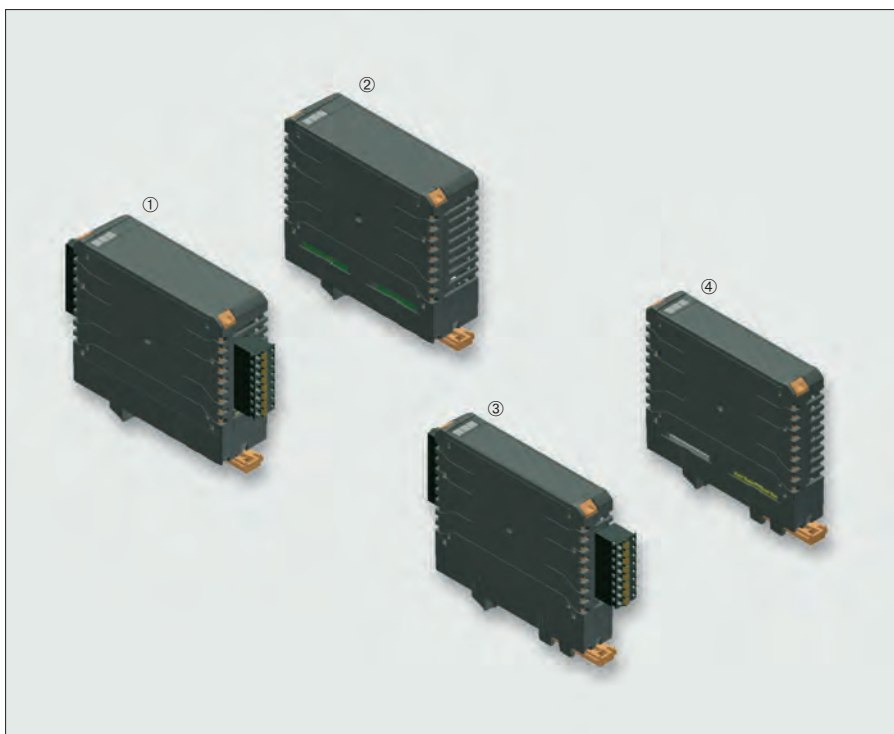
Modules permit the setup of a data / power bus. The modules are interchangeable so that four options result: 2x data; 2x power, 1x power/data, 1x data/power. The termination between the modules is connected out via insulated bridging systems.



\*Option with fieldbus – Design on request.

## System structure

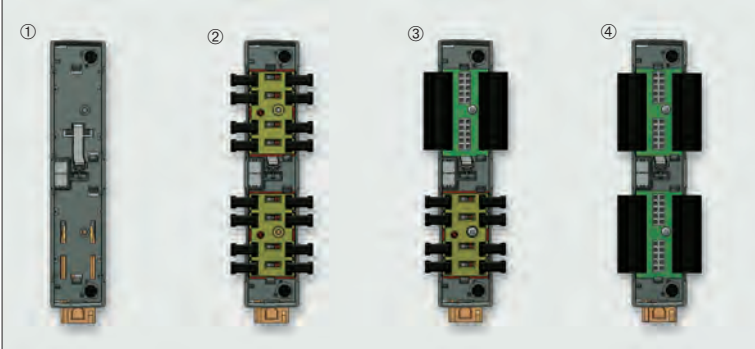
### Functional housing variations




- ① Housing 35 mm with lateral terminals
- ② Housing 35 mm without lateral terminals
- ③ Housing 22.5mm with lateral terminals
- ④ Housing 22.5 mm without lateral terminals

# Modular housing system • LCOS

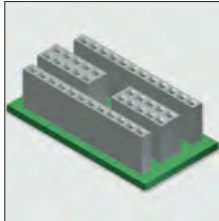
## Overview of the Function carriers



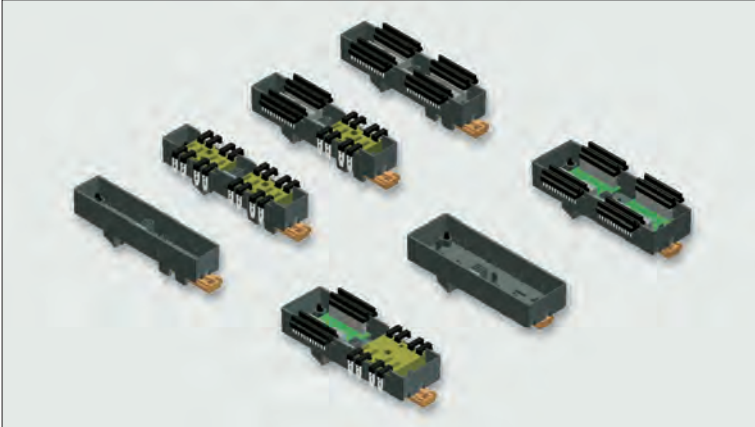
① Function carrier / standalone  
② 2 x Power bus  
③ 1 x Data bus, 1 x Power bus  
④ 2 x Data bus



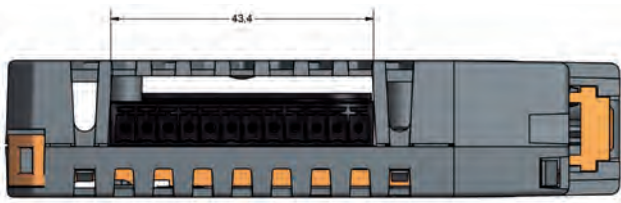
Power module



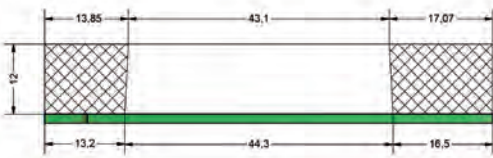
Data module

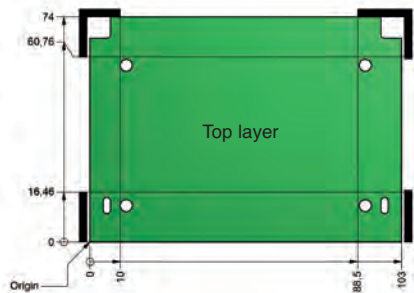


## Possible upper/lower terminal positions



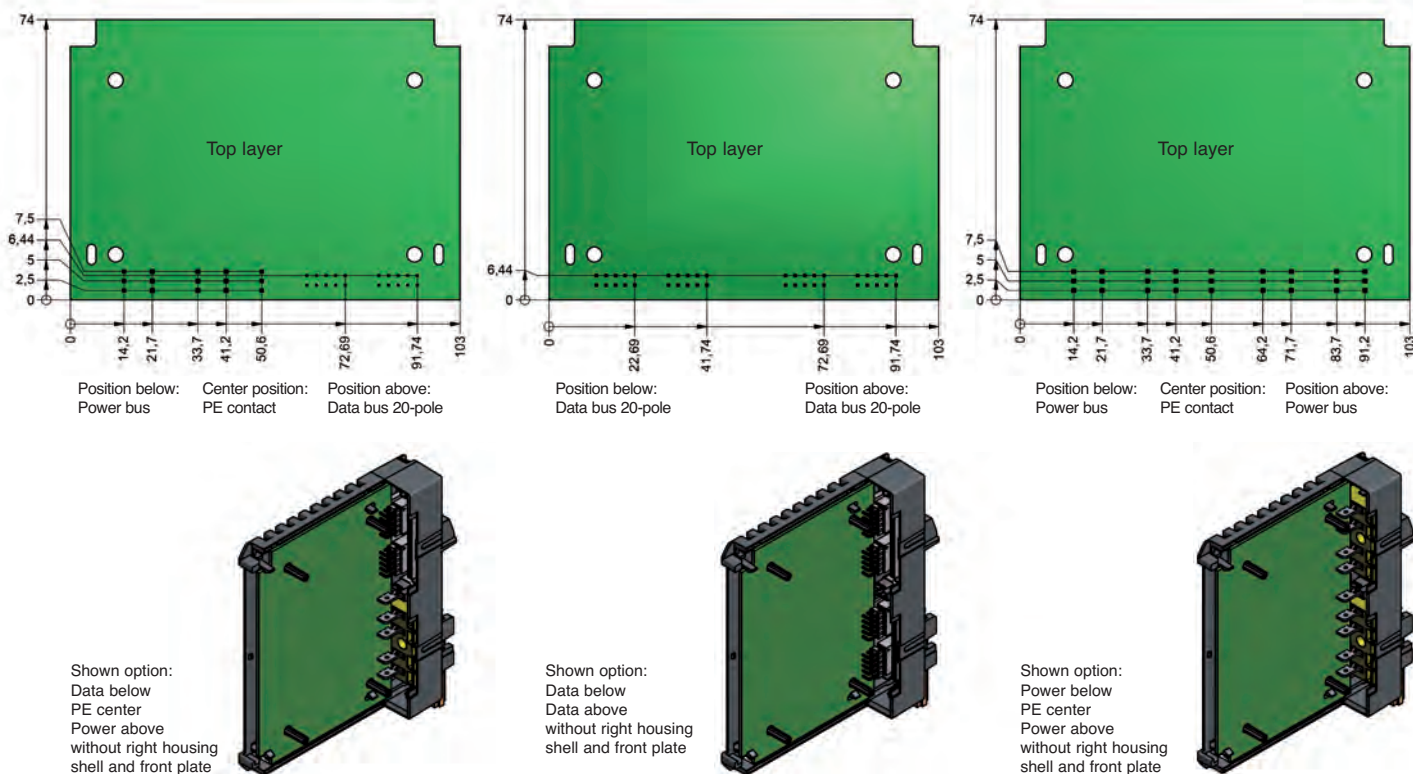
Maximum setup e.g.  
12-pole terminal CS 3.50  
or 8-pole terminal CS 5.08



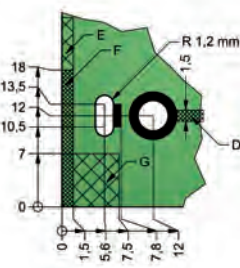
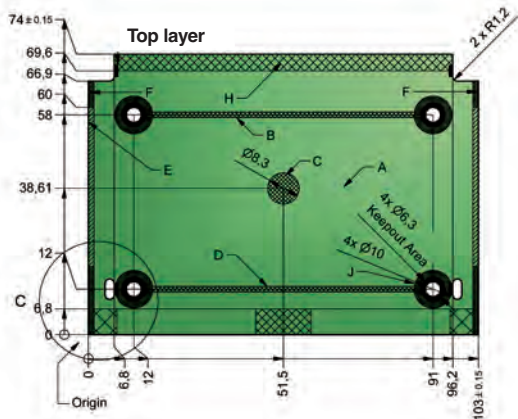


# Application example • LCOS

## Positioning: Power and data contacts

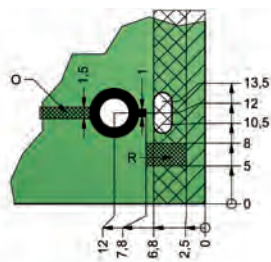
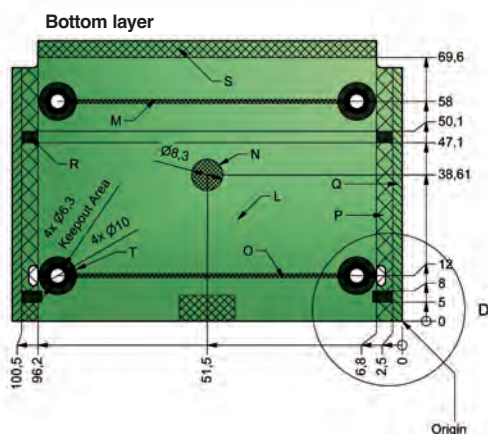


## Component heights and unusable areas of printed circuit board with power/data bus



Top layer component heights

Area	22.5 mm housing	35 mm housing
A	12.33 mm	24.8 mm
B	8.82 mm	21.3 mm
C	10.82 mm	23.3 mm
D	8.82 mm	21.3 mm
E	11.32 mm	22.8 mm
F	10.32 mm	22.8 mm
G	11.12 mm	23.6 mm
H	11.58 mm	24 mm
J	11.83 mm	24.3 mm



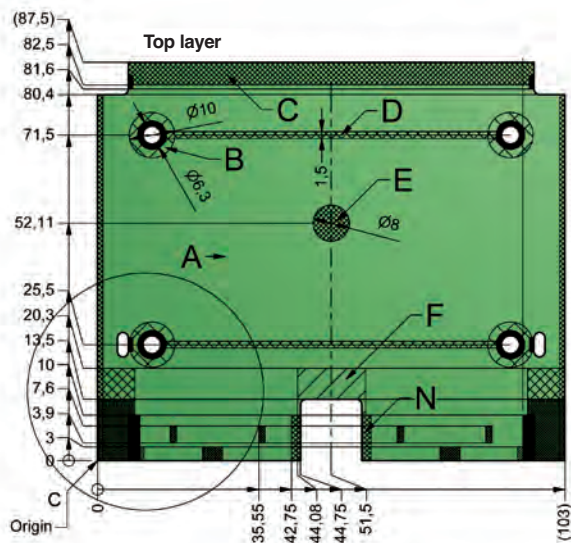
Bottom layer component heights

Area	22.5 mm and 35 mm housing
L	5.27 mm
M	1.77 mm
N	3.77 mm
O	1.77 mm
P	3.27 mm
Q	0 mm
R	2.07 mm
S	4.52 mm
T	4.77 mm



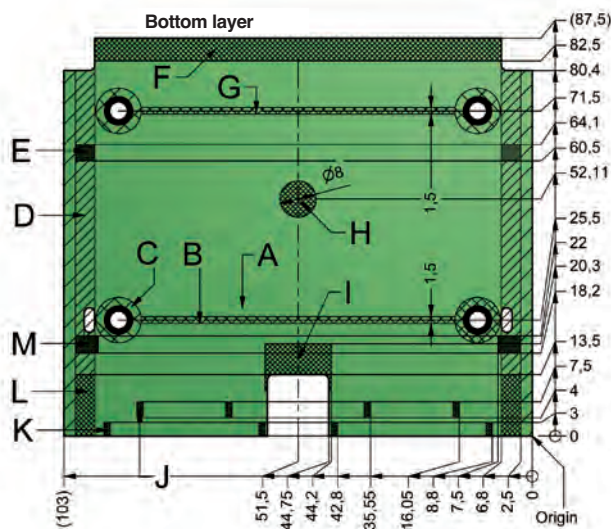
# Application example • LCOS

## Component height and unusable areas of printed circuit board without power/data bus



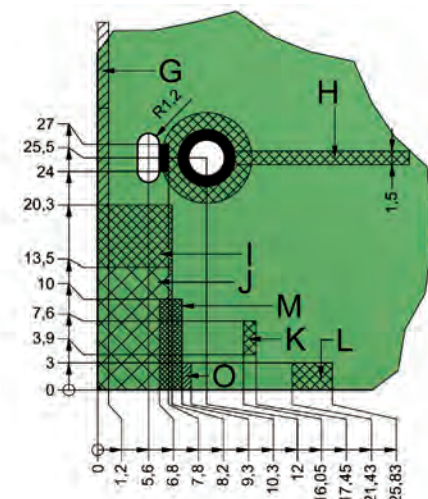
Top layer component heights

Area	22.5 mm housing	35 mm housing
A	12.33 mm	12.63 mm
B	11.83 mm	24.33 mm
C	11.58 mm	24.08 mm
D	8.82 mm	21.32 mm
E	10.82 mm	23.32 mm
F	10.83 mm	23.33 mm
G	10.32 mm	22.82 mm
H	8.82 mm	21.32 mm
I	11.12 mm	23.62 mm
J	3.21 mm	15.71 mm
K	11.13 mm	23,63 mm
L	3.37 mm	6.91 mm
M	0 mm	6.91 mm
N	0 mm	6.91 mm
O	10.82 mm	23.33 mm



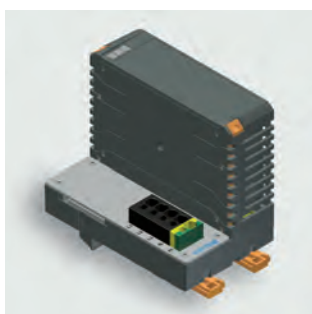
Bottom layer component heights

Area	22.5 mm and 35 mm housing
A	5.27 mm
B	1.77 mm
C	4.77 mm
D	3.27 mm
E	2.01 mm
F	4.54 mm
G	1.77 mm
H	3.77 mm
I	3.77 mm
J	4.07 mm
K	4.07 mm
L	2.97 mm
M	2.01 mm



# Modular housing system · LCOS

Construction width without supply: 22.5 mm 35 mm, with supply: 57.5 mm, 70 mm  
Data bus 12-pole power bus AC/DC 500 V, 4×16 A  
Integrated PE contact



## Mechanics: housing

Material	Polyamide PA 6.6 (UL 94 V0, NFF I2, F2)
Dimensions W×H×D from lower edge of DINrail	
Function housing incl. function carrier 22.5	22.5 × 110 × 102 mm
Function housing incl. function carrier 35	35 × 110 × 102 mm
Function housing incl. function carrier 57.5	57.5 × 110 × 102 mm
Function housing incl. function carrier 70	70 × 110 × 102 mm
Field installation	on TS 35 with interlock, EN 60715
Installation position	Any
Inscription	3 × (22.5 mm), 3 × (35 mm) labelling plates 5×5 mm

## Mechanics: data/power module/bridges

Insulation material data module/bridges	PCB material: FR4, plug connector PE_HT
Contact material data module/bridges	CuZn
Contact material data module/bridges	Ni + Au Flash
Data module: Dimensions W×H×D	36 × 10 × 19 mm
Insulation material power module/bridges	Polyamide PA 6.6 (UL 94 V0, NFF I2, F2)
Contact material power module/bridges	CuCrSiTi
Contact surface power module/bridges	tin-plated
Power module: Dimensions	36 × 11.7 × 19 mm

## Connection technology

In the function housing	freely selectable, not integrated into casing
Data bus	Bridge, connectable
Power bus	Bridge 1-pole, connectable
Supply module 1-phase, without field bus	Spring (L, N, PE) 3 × 16 mm <sup>2</sup> , 3 × 10 mm <sup>2</sup> with ferrule
Supply module 3-phase, without field bus	Spring (L, N, PE) 3 × 6 mm <sup>2</sup> , 3 × 4 mm <sup>2</sup> with ferrule
Supply module 1-phase, with field bus	Spring (L, N, PE) 3 × 16 mm <sup>2</sup> , 3 × 10 mm <sup>2</sup> with ferrule, spring 4 × 2.5 mm <sup>2</sup> , 4 × 1.5 mm <sup>2</sup> with ferrule, field bus: depends on system
Supply module 3-phase, with field bus	Spring (L, N, PE) 3 × 6 mm <sup>2</sup> , 3 × 4 mm <sup>2</sup> with ferrule, spring 4 × 2.5 mm <sup>2</sup> , 4 × 1.5 mm <sup>2</sup> with ferrule, field bus: depends on system

## Electrical data

Control side (data module)	Operating voltage: max. AC/DC 24 V max AC/DC 3 A per contact, maximum overall current AC/DC 8 A
Power bus	Operating voltage: max. AC/DC 500 V max. AC/DC 16 A, 100 % ED
Voltage drop power bus at I <sub>max</sub>	<80 mV

## General ambient conditions

Operation temperature range	-40 °C – 85 °C
Storage temperature range	-40 °C – 85 °C
Relative humidity	5 % – 95 % without condensing
Heat dissipation without distance, 22.5 mm	6 W @ 20 °C, 3 W @ 60 °C, 2 W @ 75 °C
Heat dissipation without distance, 35 mm	9 W @ 20 °C, 4 W @ 60 °C, 3 W @ 75 °C
Loads from pollutants	According to IEC 60068-2-42, IEC 60068-2-43
Insulation coordination	Acc. to EN 60664-1, EN 60947-1, EN 50178, EN 50124-1
Length of entire node	1440 mm
Shock resistance	15 G/11 ms acc. to IEC 60068-2-27
Vibration resistance	4 G acc. to IEC 60068-2-8
Protection class	IP 20
Approvals	cULus in preparation

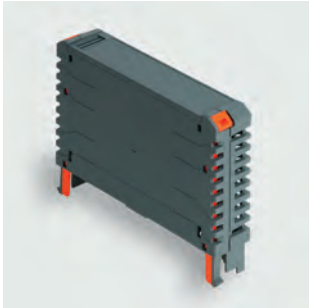


# Modular housing system · LCOS Modular housing system

Construction width without supply: 22,5 mm

Data bus 12-pole power bus AC/DC 500 V, 4×16 A

Integrated PE contact



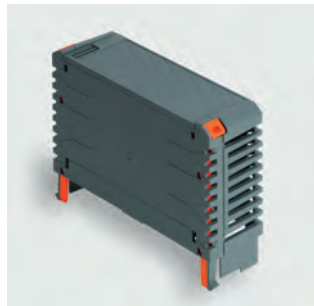
Description	Part-No.	Type	PU
Description	780100.225.1	LCOS-FGO-225-00/00/00-1	1
Function housing 22.5 mm, with cooling slits, closed front plate, no connection opening top/bottom	780100.225.1	LCOS-FGO-225-00/00/00-1	1
Function housing 22.5 mm, with cooling slits, closed front plate, no connection opening top/bottom	780100.225.2	LCOS-FGO-225-00/00/00-1	10
Function housing 22.5 mm, with cooling slits, closed front plate, connection opening top/bottom	780103.225.1	LCOS-FGO-225-01/00/01-1	1
Function housing 22.5 mm, with cooling slits, closed front plate, connection opening top/bottom	780103.225.2	LCOS-FGO-225-01/00/01-1	10
Function carrier 22.5 mm, cannot be expanded with modules, no PE direct contact	780200.225.1	LCOS-FT-NC-225-00-00-1	1
Function carrier 22.5 mm, cannot be expanded with modules, no PE direct contact	780200.225.2	LCOS-FT-NC-225-00-00-1	10
Function carrier 22.5 mm, cannot be expanded with modules, with PE direct contact	780201.225.1	LCOS-FT-PE-225-00-00-1	1
Function carrier 22.5 mm, cannot be expanded with modules, with PE direct contact	780201.225.2	LCOS-FT-PE-225-00-00-1	10
Function carrier 22.5 mm, can be expanded with modules, with PE direct contact	780331.225.1	LCOS-FT-PE-225-00-03-1	1
Function carrier 22.5 mm, can be expanded with modules, with PE direct contact	780331.225.2	LCOS-FT-PE-225-00-03-1	10
Function carrier 22.5 mm, can be expanded with modules, with PE direct contact, power module	780402.225.1	LCOS-FT-PE-225-0P-02-1	1
Function carrier 22.5 mm, can be expanded with modules, with PE direct contact, power module	780402.225.2	LCOS-FT-PE-225-0P-02-1	10
Function carrier 22.5 mm, can be expanded with modules, with PE direct contact, data and power module	780403.225.1	LCOS-FT-PE-225-DP-03-1	1
Function carrier 22.5 mm, can be expanded with modules, with PE direct contact, data and power module	780403.225.2	LCOS-FT-PE-225-DP-03-1	10

# Modular housing system · LCOS Modular housing system

Construction width without supply: 35 mm

Data bus 12-pole power bus AC/DC 500 V, 4×16 A

Integrated PE contact



Description	Part-No.	Type	PU
Function housing 35 mm, with cooling slits, closed front plate, no connection opening top/bottom	780100.350.1	LCOS-FGO-350-00/00/00-1	1
Function housing 35 mm, with cooling slits, closed front plate, no connection opening top/bottom	780100.350.2	LCOS-FGO-350-00/00/00-1	10
Function housing 35 mm, with cooling slits, closed front plate, connection opening top/bottom	780103.350.1	LCOS-FGO-350-01/00/01-1	1
Function housing 35 mm, with cooling slits, closed front plate, connection opening top/bottom	780103.350.2	LCOS-FGO-350-01/00/01-1	10
Function carrier 35 mm, cannot be expanded with modules, no PE direct contact	780200.350.1	LCOS-FT-NC-350-00-00-1	1
Function carrier 35 mm, cannot be expanded with modules, no PE direct contact	780200.350.2	LCOS-FT-NC-350-00-00-1	10
Function carrier 35 mm, cannot be expanded with modules, no PE direct contact	780201.350.1	LCOS-FT-PE-350-00-00-1	1
Function carrier 35 mm, cannot be expanded with modules, no PE direct contact	780201.350.2	LCOS-FT-PE-350-00-00-1	10
Function carrier 35 mm, can be expanded with modules, with PE direct contact	780331.350.1	LCOS-FT-PE-350-00-03-1	1
Function carrier 35 mm, can be expanded with modules, with PE direct contact	780331.350.2	LCOS-FT-PE-350-00-03-1	10
Function carrier 35 mm, can be expanded with modules, with PE direct contact, power module	780402.350.1	LCOS-FT-PE-350-0P-02-1	1
Function carrier 35 mm, can be expanded with modules, with PE direct contact, power module	780402.350.2	LCOS-FT-PE-350-0P-02-1	10
Function carrier 35 mm, can be expanded with modules, with PE direct contact, data and power module	780403.350.1	LCOS-FT-PE-350-DP-03-1	1
Function carrier 35 mm, can be expanded with modules, with PE direct contact, data and power module	780403.350.2	LCOS-FT-PE-350-DP-03-1	10

1) Delivery time on request  
2) Product design on request

## Modular housing system · LCOS Modular housing system

Construction width with supply: 57,5 mm, 70 mm

Data bus 12-pole power bus AC/DC 500 V, 4×16 A

Integrated PE contact

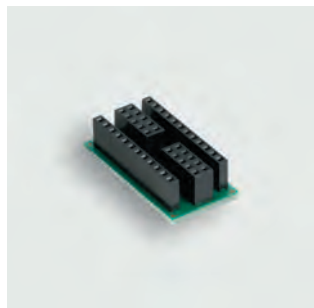


Description	Part-No.	Type	PU
Function carrier 57.5 mm, with supply DC 24 V, no FBS, with PE direct contact, ready for connection	780700.575.1	LCOS-FTE-PE-575-NC-00-1	1
Function carrier 70 mm, with supply DC 24 V, no FBS, with PE direct contact, ready for connection	780700.700.1	LCOS-FTE-PE-700-NC-00-1	1
Function carrier 57.5 mm, with supply AC 240 V, no FBS, with PE direct contact, ready for connection	780701.575.1	LCOS-FTE-PE-575-NC-01-1	1
Function carrier 70 mm, with supply AC 240 V, no FBS, with PE direct contact, ready for connection	780701.700.1	LCOS-FTE-PE-700-NC-01-1	1
Function carrier 57.5 mm, with supply 3-phase AC 500 V, no FBS, with PE direct contact, ready for connection	780702.575.1	LCOS-FTE-PE-575-NC-02-1	1
Function carrier 70 mm, with supply 3-phase AC 500 V, no FBS, with PE direct contact, ready for connection	780702.700.1	LCOS-FTE-PE-700-NC-02-1	1



# Modular housing system · LCOS Modular housing system

## Accessories



Description	Part-No.	Type	PU
Replace front plate, closed, function housing 22.5 mm	780600.225.3	LCOS-ZB-FPL-225-00-1	50
Replace front plate, closed, function housing 22.5 mm	780600.225.4	LCOS-ZB-FPL-225-00-1	100
Replace front plate, closed, function housing 35 mm	780600.350.3	LCOS-ZB-FPL-350-00-1	50
Replace front plate, closed, function housing 35 mm	780600.350.4	LCOS-ZB-FPL-350-00-1	100
Data module 22.5 mm	780900.225.2	LCOS-ZB-DM-225-12-00-1	10
Data module 22.5 mm	780900.225.3	LCOS-ZB-DM-225-12-00-1	50
Data module 35 mm	780900.350.2	LCOS-ZB-DM-350-12-00-1	10
Data module 35 mm	780900.350.3	LCOS-ZB-DM-350-12-00-1	50
Power module 22.5 mm	780910.225.2	LCOS-ZB-PM-225-00-1	10
Power module 22.5 mm	780910.225.3	LCOS-ZB-PM-225-00-1	50
Power module 35 mm	780910.350.2	LCOS-ZB-PM-350-00-1	10
Power module 35 mm	780910.350.3	LCOS-ZB-PM-350-00-1	50
Attachment screws data/power module	780991.000.4	LCOS-ZB-Schraube-00	100
Coding pins	780990.000.3	LCOS-ZB-Codier	50
Data bridge 12-pole, insulated	780960.012.2	LCOS-ZB-DB-12-00	10
Data bridge 12-pole, insulated	780960.012.3	LCOS-ZB-DB-12-00	50
Power bridge 1-pole, insulated	780961.001.2	LCOS-ZB-PB	10
Power bridge 1-pole, insulated	780961.001.3	LCOS-ZB-PB	50
PCB contact Power and PE, 10 A, 1-pole	780962.000.4	LCOS-ZB-LPK-00	100
PCB contact Power and PE, 10 A, 1-pole	780962.000.5	LCOS-ZB-LPK-00	500
PCB contact Power and PE, 10 A, 1-pole	780962.000.6	LCOS-ZB-LPK-00	1000
Labelling plates 5×5 mm, white, frame with 200 plates	780981.000.2	LCOS-ZB-BZS-white-00	10
Labelling plates 5×5 mm, red, frame with 200 plates	780982.000.2	LCOS-ZB-BZS-red-00	10
Labelling plates 5×5 mm, blue, frame with 200 plates	780983.000.2	LCOS-ZB-BZS-blue-00	10
Terminal black, CS 5.08, 8-pole, 2.5 mm <sup>2</sup> Push-in, 1-8 printed	780922.000.2	LCOS-ZB_KL_FS-508-25-8-black	10
Terminal black, CS 3.50, 12-pole, 1.5 mm <sup>2</sup> Push-in, 1-12 printed	780921.000.2	LCOS-ZB-KL-FS-350-15-12-black	10
Laboratory printed circuit board (PCB) FR4, 1.5 mm	780963.000.2	LCOS-ZB-EB-00-L	10

## Notes

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