

KL 090

S-DIAS Power Supply Module

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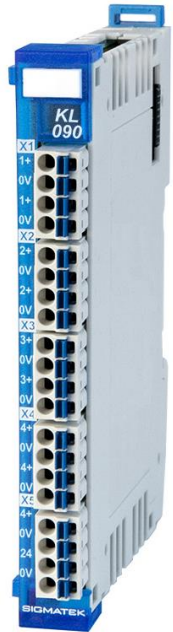
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S-DIAS Power Supply Module

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The S-DIAS KL 090 power supply module has a connection for a +24 V supply with GND and distributes power over nine outgoing +24 V supplies with GND, separated into four supply groups.



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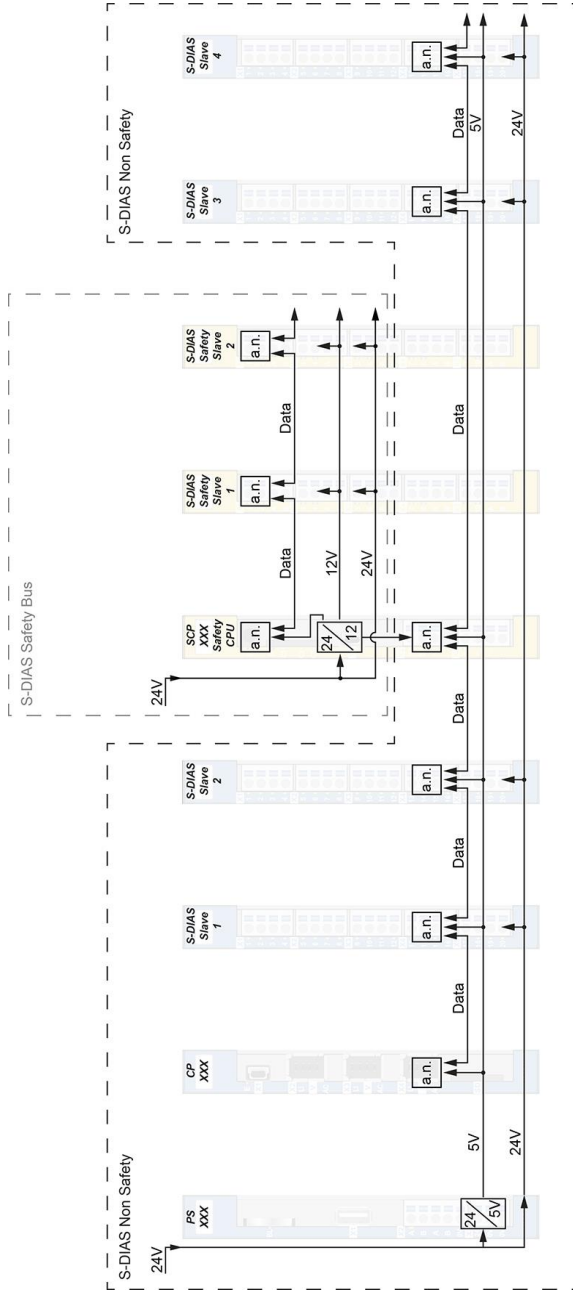
1 Technical Data

1.1 +24 V Power Supplies

Number of +24 V supplies	9 (distributed over 4 supply groups)
Short-circuit proof	yes
Maximum allowable continuous load current / supply connection	2 A
Maximum allowable continuous load current / supply group	2 A
Maximum total current / module	6 A
Safety functions	short circuit current limit per supply group typically 12 A over temperature cut-off cut-off with supply under voltage

1.2 Electrical Requirements

Supply voltage +24 V	18-30 V DC
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Wiring S-DIAS Safety in S-DIAS System

a.n. = active node

- each S-DIAS module is an active module (active node)
- Safety CPU is connected to the S-DIAS bus (incl. +5 V supply)
- Safety bus is independent and separated from the S-DIAS bus

1.3 Voltage Monitor

Supply voltage +24 V	supply voltage > 18 V (DC OK-LED lights green)
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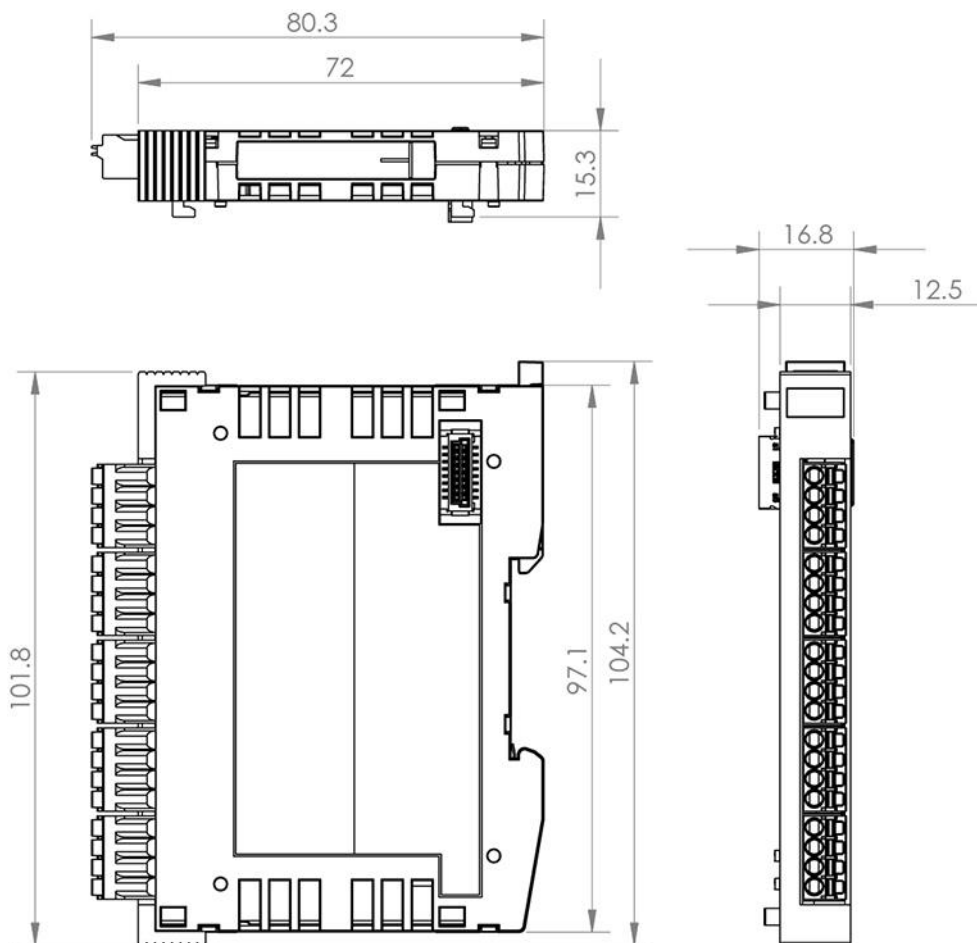
1.4 Miscellaneous

Article number	20-024-090
Hardware version	1.x
Standard	UL 508 (E247993)
Approbations	UL, cUL, CE

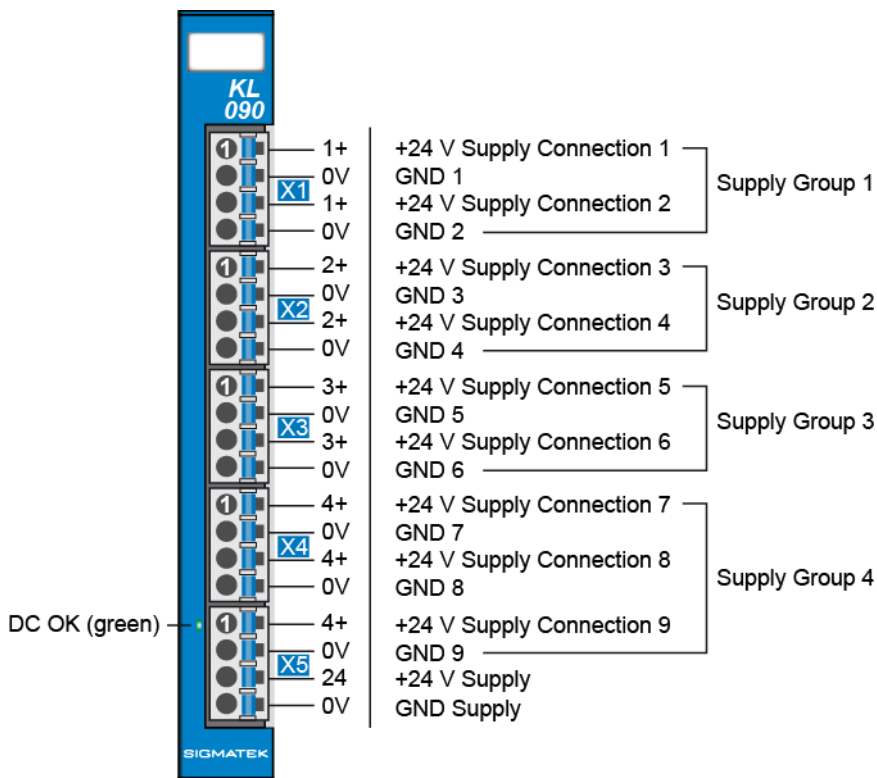
1.5 Environmental Conditions

Storage temperature	-20 ... +85 °C	
Environmental temperature	0 ... +60 °C	
Humidity	0-95 %, non-condensing	
Operating conditions	Pollution degree 2 altitude up to 2000 m	
EMC resistance	in accordance with EN 61000-6-2 (industrial area)	
EMC noise generation	in accordance with EN 61000-6-4 (industrial area)	
Vibration resistance	EN 60068-2-6	3.5 mm from 5-8.4 Hz 1 g from 8.4-150 Hz
Shock resistance	EN 60068-2-27	15 g
Protection type	EN 60529	IP20

2 Mechanical Dimensions



3 Connector Layout



3.1 Status LEDs

DC OK	green	ON	module supplied with +24 V
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3.2 Applicable Connectors

Connectors:

X1-X5: Connectors with spring terminals (included in delivery)

The spring terminals are suitable connecting ultrasonically compacted (ultrasonically welded) strands.

Connections:

Stripping length/Sleeve length:	10 mm
Plug-in direction:	parallel to conductor axis or to PCB
Conductor cross section, rigid:	0.2-1.5 mm ²
Conductor cross section, flexible:	0.2-1.5 mm ²
Conductor cross section, ultrasonically compacted:	0.2-1.5 mm ²
Conductor cross section AWG/kcmil:	24-16
Conductor cross section flexible, with ferrule without plastic sleeve:	0.25-1.5 mm ²
Conductor cross section flexible, with ferrule with plastic sleeve:	0.25-0.75 mm ² (ground for reducing d2 of the ferrule)



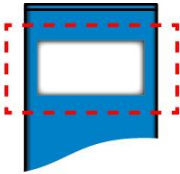
IMPORTANT:

The S-DIAS module **CANNOT** be connected or disconnected while voltage is applied!

IMPORTANT:

Le module S-Dias **NE PEUT PAS** être inséré ou retiré sous tension.

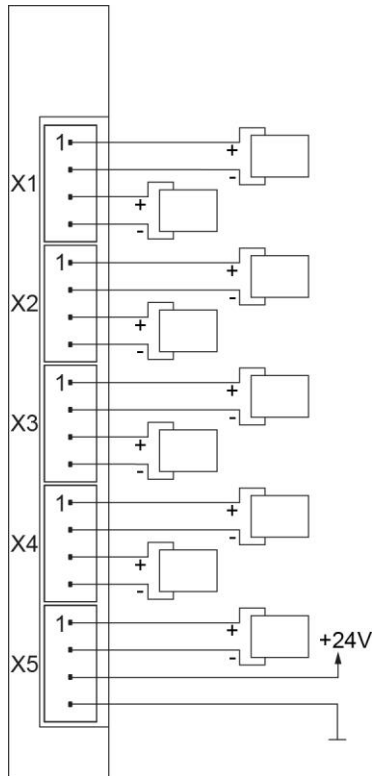
3.3 Label Field



Manufacturer	Weidmüller
Type	MF 10/5 CABUR MC NE WS
Weidmüller article number	1854510000
Compatible printer	Weidmüller
Type	Printjet Advanced 230V
Weidmüller article number	1324380000

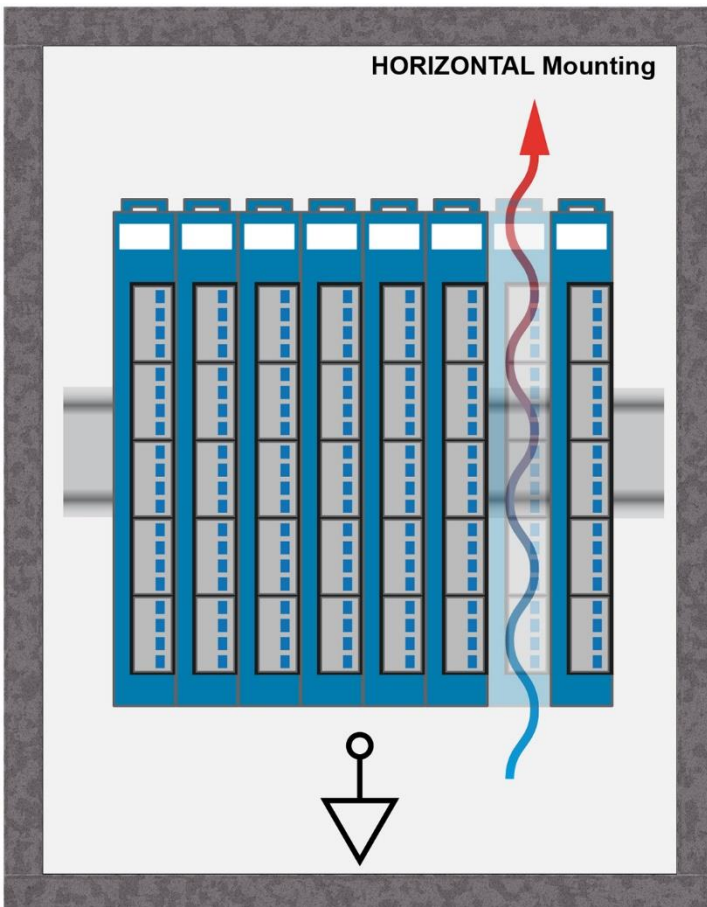
4 Wiring

4.1 Wiring Example

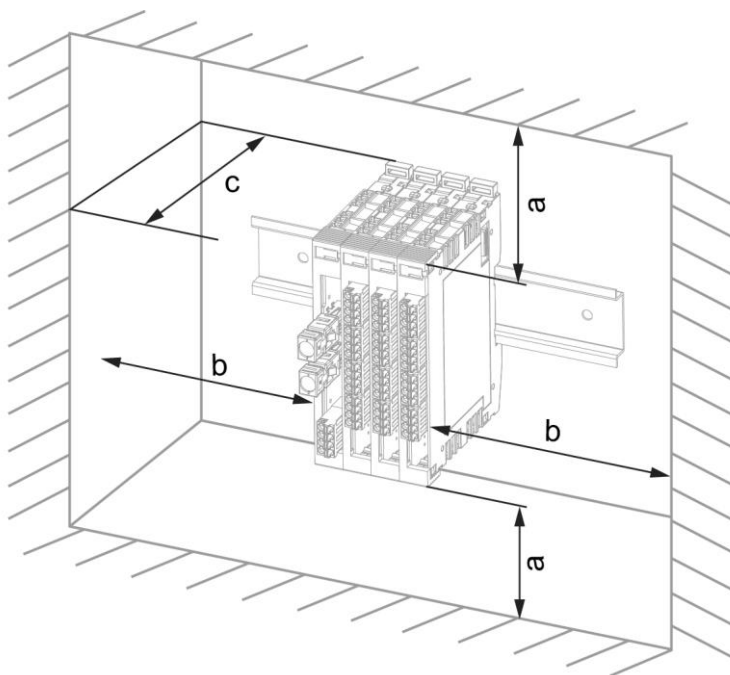


5 Mounting

The S-DIAS modules are designed to be mounted in the control cabinet. To mount the modules, a DIN rail is required. The DIN rail must establish a conductive connection with the back wall of the control cabinet. The individual S-DIAS modules are mounted on the DIN rail as a block and secured with latches. The functional ground connection from the module to the DIN rail is made via the grounding clamp on the back of the S-DIAS modules. The modules must be mounted vertically with sufficient clearance between the ventilation slots of the S-DIAS module blocks and nearby components and/or the control cabinet wall. This is required to provide optimal cooling and air circulation so that functionality is ensured up to the maximum operating temperature.



Recommended minimum distances of the S-DIAS modules to the surrounding components or control cabinet wall:



a	b	c
30 mm (1.18")	30 mm (1.18")	100 mm (3.94")

a, b, c ... distances in mm (inches)

Documentation Changes

Change date	Affected page(s)	Chapter	Note
25.07.2013	3	1.2	current consumption of the supply voltage deleted
26.07.2013	3	1.5	operating temperature changed to 0-60 °C
29.07.2013	7	4	chapter "Mounting" added
24.10.2013	4	1.5	Added Vibration resistance
23.12.2013	6	3 Connector Layout	Changed image
	7	4.1 Wiring Example	Added wiring example
11.02.2014	6	3 Connector Layout	Changed image
		3.2 Applicable Connectors	Connection capacity added
31.03.2014	1		Text changed
	3	1.1 +24 V Power Supplies	Text changed
	3	1.4 Miscellaneous	UL added
	6	3 Connector Layout	Drawing changed
	8	5 Mounting	Text updated
30.01.2015	7	3.2 Applicable Connectors	Added note concerning connecting the S-DIAS module while voltage is applied
26.03.2015	7	3.2 Applicable Connectors	Added connections
28.04.2016	11	5 Mounting	Graphics distances
17.08.2017	5	1.5 Environmental Conditions	Pollution Degree
	8	3.2 Applicable Connectors	Sleeve length added Added info regarding ultrasonically welded strands
18.10.2017	9	3.3 Label Field	Added chapter
	12	5 Mounting	Graphic replaced
19.03.2019	3	1.1 +24 V Power Supplies	Safety functions added
04.11.2020	11	5 Mounting	Expansion functional ground connection