Fieldbus Terminal Controller
GEL 8500
with CCV functionality

LENORD +BAUER
... automates motion.

Technical information ***Version 05.12***

General

Optimised for the rough environment, the fieldbus terminal controller GEL 8500 meets all Cold Climate Version (CCV) and Hot Climate Version (HCV) requirements arising in all today's fields of application like wind turbines or rail vehicles. The fieldbus terminal controller for the extended temperature range GEL 8500 is a CANopen enabled remote module with six digital inputs and outputs, as well as four PT100 inputs. As a special feature, two 230 VAC switched outputs are integrated. The fieldbus interface is designed as a CANopen slave in accordance with CiA Draft Standard DS302 and DS401. The vertical design, and thus minimum space requirement on the top hat rail, makes the fieldbus terminal controller ideal for decentralised solutions. The fieldbus terminal controller is mounted on a standard top hat rail. The signal connection level has been developed for permanent wiring with connector strips. Multicolour light diodes on the front provide information on power supply, device status as well as fieldbus status of the equipment. In addition to the flexible and decentralised extension of I/O for controls and frequency converters, the fieldbus terminal GEL 8500 can also decentralise functions in your machine thanks to sufficient computing power.

Features

- CANopen (DS 301 + DS 401)
- USB port
- 6 x digital IN / digital OUT, 24 VDC
- 4 x analogue IN (PT100)
- 2 x digital OUT 230 VAC
- Dew-point resistant
- High resistance to shock and vibration

Advantages

- Type test EN 50155
- Extended temperature range:
  -50 °C ... +85 °C
- Extended installation altitude: 3000 m
- Decentral usage

Fields of application

- Wind power (onshore, nearshore, offshore)
- Rail vehicles
- Combined heat and power plants
- Rough industrial environment

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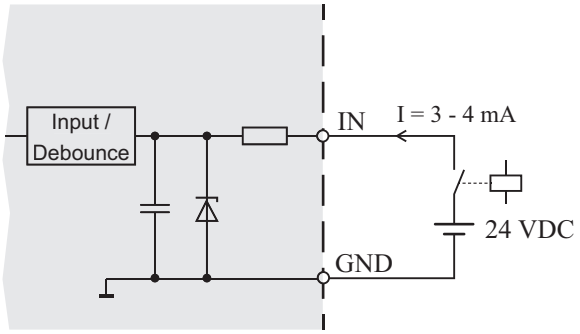
Technical data

Electrical data	
Power supply	Nominal 24 VDC, reverse polarity protected 18 ... 30 VDC
Power consumption	< 3 W, typ. 1.5 W
CANopen slave	DS 301 + DS 401
EMC	Industrial applications: EN 61000-6-1 to 4 Rail vehicles: EN 50121-3-2
Protection class	IP 20
Vibration resistance acc. to DIN EN 60068-2-6	200 m/s^2, 10 to 2000 Hz
Shock resistance acc. to DIN EN 60068-2-27	2000 m/s^2
Type test	EN 50155
Features	
Service interface	USB 2.0
PT100 inputs	4 x (resolution 0.1 °C)
Digital inputs	6 x 24 VDC
Digital outputs 24 VDC 230 VAC	 6 x 24 VDC, 500 mA 2 x 230 VAC, 0.12 A (normally open switch) current limited, not short-circuit-proof
Screen	– 1 x flat connector (2 pin 2 x 2.8 mm, 6.3 mm in total) – Screen plate (8 mm x 45 mm)
Status indicators	4 LED’s bus status, 4 LED’s device status
Ambient data	
Operating temperature	-40 °C ... +85 °C
Storage temperature	-50 °C ... +85 °C
Condensation	yes
Maximum atmospheric humidity	95%
Maximum operating altitude	3000 m
Mechanical data	
Dimensions (W x H x D)	46 mm x 105 mm x 84 mm
Weight	< 350 g
Connection technique	Connector with springs
Type of mounting	Top hat rail TS 35

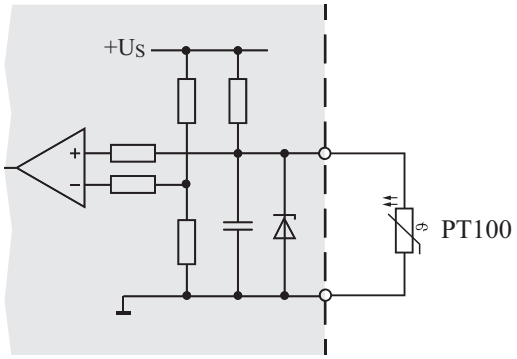
Internal circuit of inputs and outputs, connection example

Internal circuit of the inputs

Digital input (DI)

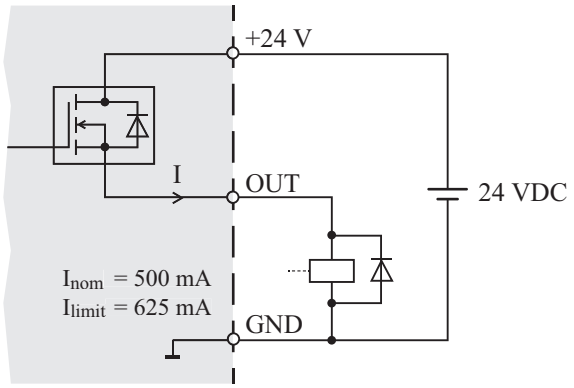


Analogue input (PT100)

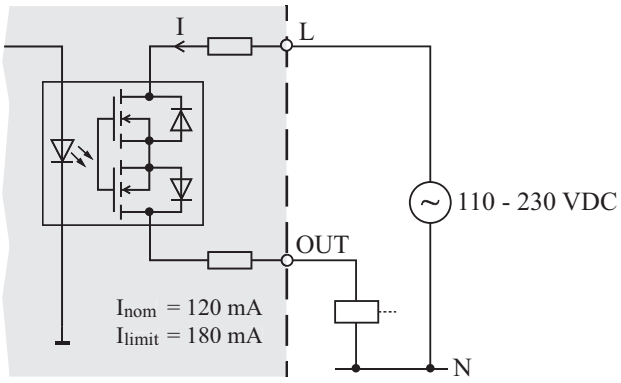


Internal circuit of the outputs

24 V DC digital outputs (DO)

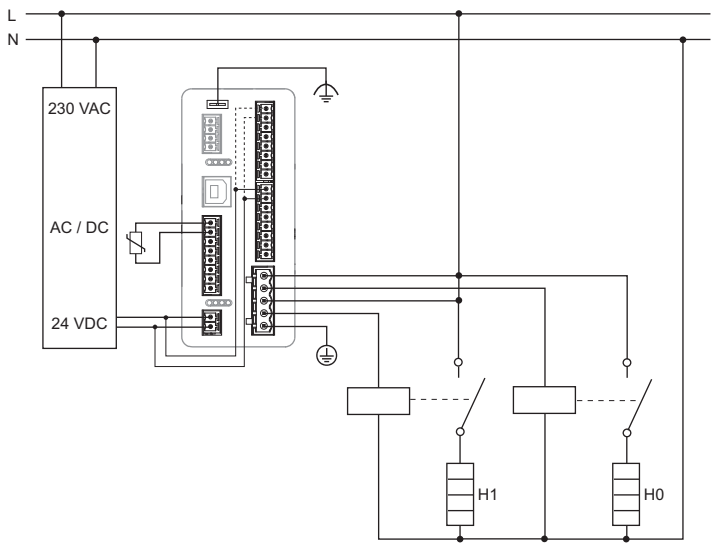


230 V AC outputs



current limited, not short-circuit-proof

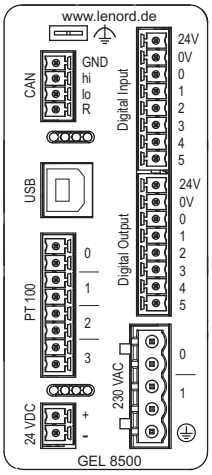
Connection example



H0, H1 Heating

Terminal assignment, device and fieldbus status

Terminal assignment



⏚ Protective earth
⏚ Function earth

Power supply		Ana-logue input		USB		CAN		FE ⏚		Digital Input (DI)		Digital Output (DO)		230 VAC out	
1	+24 VDC	1	T0+	1	+5 V	1	GND	1	Screen	8	+24 V(1)	8	+24 V(1)	5	230 V_0.0
2	0 VDC	2	T0–	2	-D	2	hi	2	Screen	7	0 V(2)	7	0 V(2)	4	230 V_0.1
		3	T1+	3	+D	3	lo			6	DI0	6	DO0	3	230 V_1.0
		4	T1–	4	GND	4	R			5	DI1	5	DO1	2	230 V_1.1
		5	T2+							4	DI2	4	DO2	1	⏚
		6	T2–							3	DI3	3	DO3		
		7	T3+							2	DI4	2	DO4		
		8	T3–							1	DI5	1	DO5		

Device status (4 LEDs)

LED_S1	● ○ ○ ○	24 VDC input voltage	green	Power supply correct
			red	Connection reversed
LED_S2	○ ● ○ ○	Processor status	green	Fieldbus terminal operating correctly
			flashing red	Processor error
LED_S3	○ ○ ● ○	Status 230 VAC output 0	red	230 VAC output 0 connected through
LED_S4	○ ○ ○ ●	Status 230 VAC output 1	red	230 VAC output 1 connected through

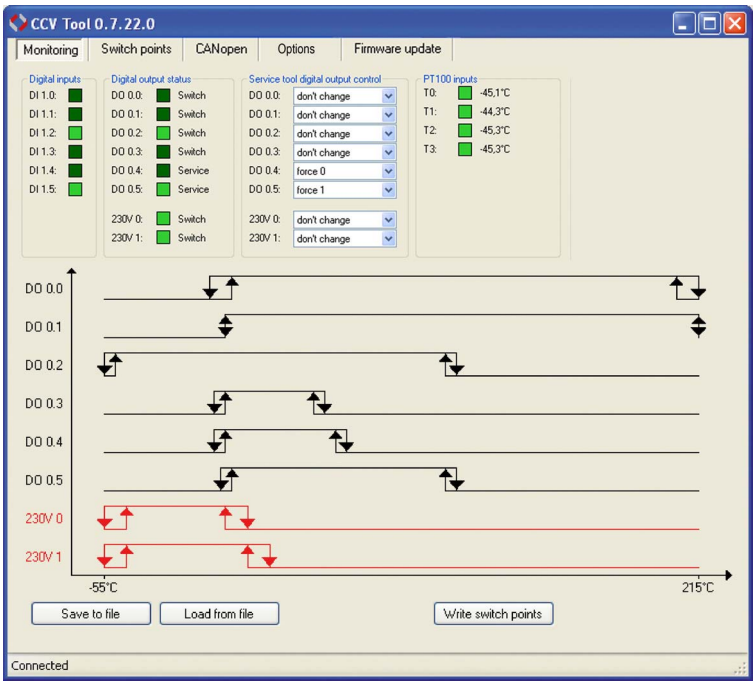
Fieldbus status (4LEDs)

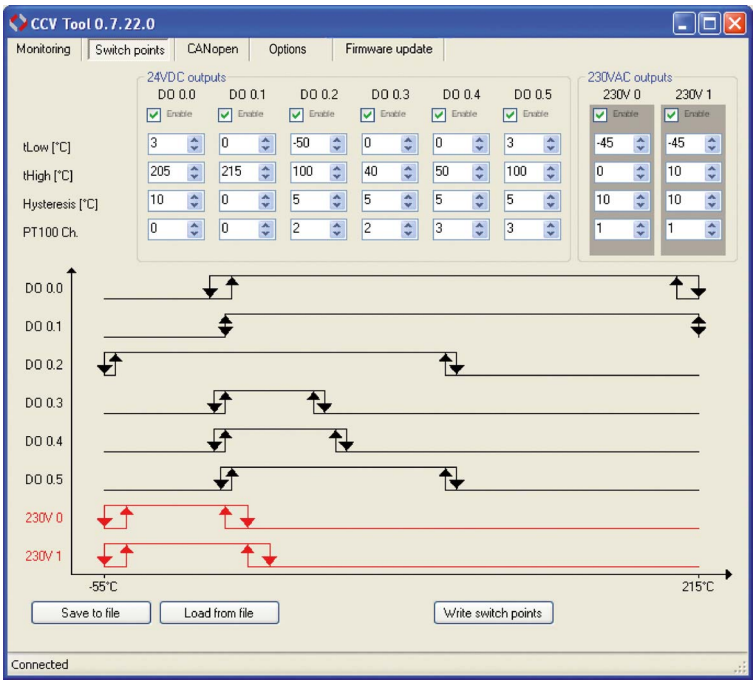
LED_B1	● ○ ○ ○	green	CAN bus power supply correct
LED_B2	○ ○ ○ ○	—	No function
LED_B3	○ ○ ● ○	red / green	Device status
LED_B4	○ ○ ○ ●	red / green	CAN fieldbus status

(1) Internal jumper between DI/DO
(2) Internal jumper between GND_DI/DO

Setting parameters for special functions via Windows Service Tool

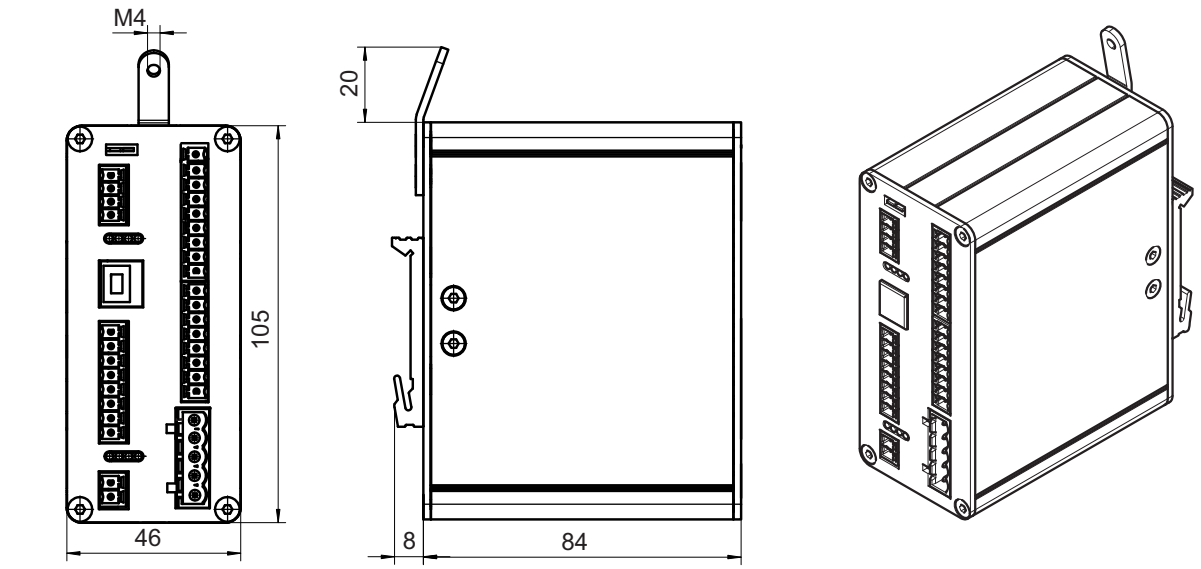
The parameters in the fieldbus terminal GEL 8500 are set via the CAN bus or the USB service port; firmware updates can also be loaded and parameters backed up via the USB port:





Dimensions

Dimensions GEL 8500



Included in the scope of supply:

CD 8500: CCV special function

Accessories

GEL 890600	Mating connector set
D-01B-8500_CCV	Device manual

Your notes:

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IRIS Certification ISO 9001 ISO 14001