



CD25000

Coupling device



Intended use

The CD25000 can be used with an NGR monitor in HRG systems with a system voltage U_{LL} up to 25 kV ($U_{NGR} = 14.5$ kV). The operating altitude is a maximum of 5000 m above mean sea level.

Safety instructions

Part of the device documentation in addition to this manual is the enclosed "Safety instructions for Bender products". **All work activities necessary for the installation, connection and commissioning are to be carried out by electrically skilled persons only!** It is essential to follow the current safety instructions.



DANGER of an electric shock!

The coupling device is operated with voltages up to 14.5 kV. Wrong connection can lead to **death, serious physical injury or substantial damage to property**. Before working on the coupling device, make sure that the operating area is **de-energised**!

Functional description

The combination of an NGRM... and a coupling device extends the range of application of the neutral grounding resistor monitor up to a system voltage of 25 kV. The duty time is limited to 10 s, the cool-down period is 120 minutes.

Installation and connection

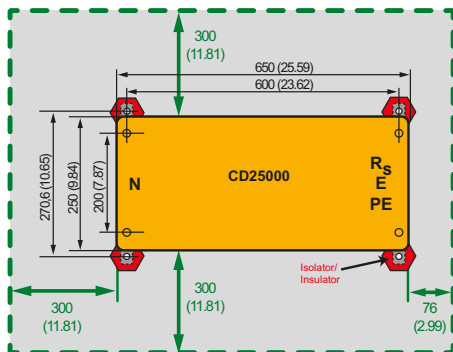


DANGER of an electric shock!

Inappropriate installation and connection can result in death, serious physical injury or substantial damage to property.

The device is suitable for screw mounting.

Dimension diagram; all dimensions in mm (in)



Tightening torque cover screws:
2.5 Nm (22.1 lb-in)

←→ Minimum clearance to adjacent devices

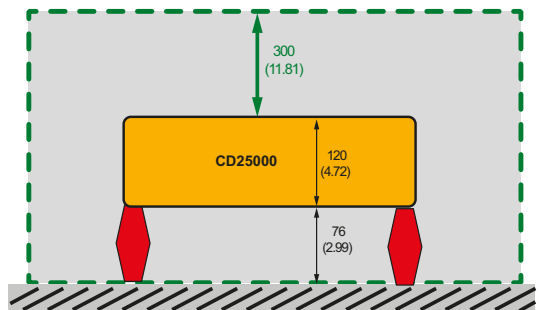


Fig. 1-1: Dimension diagram CD25000: top view (left) and side view (right)

Connection

Unscrew the cover, connect suitable cable to the appropriate socket.

- i** The increased protection IP54 is achieved by feeding the cable through a membrane. To do this, push the cable through the membrane during installation and connect it. The membrane wraps around the cable and closes the opening.

Wiring diagram

- i** The "N" terminal of the CD25000 should be connected directly to the star point of the transformer, so that the connection between NGR and star point is also monitored. A direct connection between the „N“ connections of the CD25000 and the NGR is not recommended, as in this case a line interruption between the star point and the NGR connection „N“ would not be monitored..

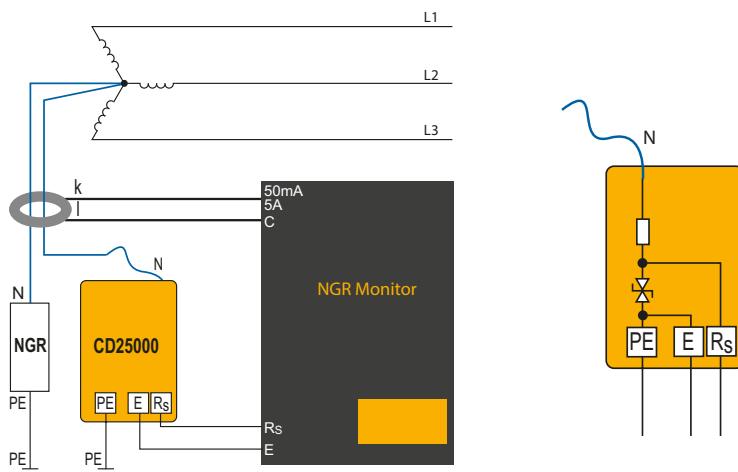


Fig. 1-2: Wiring diagram (left), internal wiring diagram CD25000 (right)

Notes for Fig. 1-2:

Terminal	Use	Wiring	
		Metric	Imperial
N	Connection to the star point of the HRG system: permanently connected cable, cable lug provided by customer	0.36 mm ²	
RS	Connection to RS of the NGRM...	1.5 mm ²	AWG16
E	Connection to E of the NGRM... Internally connected to PE	1.5 mm ²	AWG16
PE	Connection to protective earth conductor; internally connected to E; cable lug M5	≥ 1.5 mm ²	AWG16 or bigger

Commissioning

After connecting the CD25000 to the NGR monitor, perform a field calibration.

- i** To obtain the best possible results in a field calibration, the NGR monitor should be in operation for at least one hour in the operational environment.

Technical data

Insulation coordination DIN EN 50178:1997

Definition

Measuring circuit (IC1)	N
Output circuit (IC2)	RS
Protective circuit (IC3)	E, PE
Rated voltage	14500 V
Overvoltage category	III
Pollution degree	2
Rated insulation voltage	
No galvanic separation between the circuits!	
IC1 / (IC2 – IC3)	14500 V
IC2 / IC3	50 V

Voltage range

U_n	DC / 50/60 Hz / 50...3200 Hz	14500 V
I_n		145 mA

Operating time

without ground fault (2800 V)	unlimited
with ground fault (14500 V)	10 s
Cool-down period	120 min
Overload capacity	$1.15 \times U_n$ for < 10 s

Resistance

100 k Ω	$\pm 0,5\%$
Temperature coefficient	20 ppm/K

Environment

Ambient temperature	-40...+70 °C
Ambient temperature for UL	-40...+60 °C
Humidity	$\leq 98\%$

Classification of climatic conditions acc. to IEC 60721

(except condensation and formation of ice)

Stationary use (IEC 60721-3-3)	3K5
Transport (IEC 60721-3-2)	2K3 (-40...+85 °C)
Long-term storage (IEC 60721-3-1)	1K4 (-40...+70 °C)

Ordering details

CD25000 (up to U_{LL} = 25000 V, U_{NGR} = 14500 V)



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Classification of mechanical conditions acc. to IEC 60721

Stationary use	3M7
Transport	2M2
Long-term storage	1M3

Connection

Connection RS and E

Tightening torque	0.5...0.6 Nm (4.4...5.3 lb-in)
Conductor sizes	AWG 24-12
Stripping length	7 mm
Conductor rigid	0.2...4 mm ²
Conductor flexible	0.2...2.5 mm ²
Multiple conductor flexible with ferrule	
without plastic sleeve	0.25...1.5 mm ²
with plastic sleeve	0.25...2.5 mm ²
Multiple conductor, flexible with TWIN ferrule	
with plastic sleeve	0.5...1.5 mm ²

Connection PE for cable lug

Tightening torque cable lug M5	2.2 Nm (19.5 lb-in)
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Connection N

Connection via HV line with an open end	
..... cable lug provided by the customer	

Other

Operating mode	in case of a ground fault maximum 10 s
Mounting	any position
Operating altitude	up to 5000 m AMSL
Degree of protection, internal components (DIN EN 60529)	
.....	IP54
Flammability class	UL 94V-0
Weight	< 11 kg
Tightening torque, cover screws	2.5 Nm (22.1 lb-in)

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