

## Power supply unit with flame-proof terminal compartment dNG3-xxib-xx with intrinsically safe supply output

### Ordering data

Designation	Type	Item no.
Power supply unit	dNG3-12ib-1.2 (12 V <sub>DC</sub> / 1.2 A)	371 009 2x 01 AX
Power supply unit	dNG3-16ib-0.4 (16 V <sub>DC</sub> / 0.4 A)	371 009 3x 01 AX
Power supply unit	dNG3-16ib-0.3 (16 V <sub>DC</sub> / 0.2 A)	371 009 4x 01 AX
Power supply unit	dNG3-5ib-2.5 (5 V <sub>DC</sub> / 2.5 A)	371 009 5x 01 AX
Flame-proof terminal compartment		362 870 11 AX
Cable entry	KLE M32 M32x1.5 flame-proof	W97 116 A 017
Cable entry	KLE M25 M25x1.5 flame-proof	W97 116 A 014
Blind plug	M32x1.5 flame-proof	W97 116 A 107
Blind plug	M25x1.5 flame-proof	W97 116 A 017
Opening aid for "d" box		A60221914-366



- **Universal power supply unit with flame-proof terminal box in different input voltage versions for the power supply of intrinsically safe installations which are protected against fire-damp with 12 V / 1.2 A, 16 V / 0.4 A, 16 V / 0.2 A, 5 V / 2.5 A**
- **Versions for AC input voltages (50 Hz) of 24 V<sub>AC</sub> 36 V<sub>AC</sub> 42 V<sub>AC</sub> 100 V<sub>AC</sub> 127 V<sub>AC</sub> 230 V<sub>AC</sub> and 240 V<sub>AC</sub> / (60 Hz)**
- **Constant DC output voltage 16 V<sub>DC</sub> / 0.2 A (limited current and voltage values)**
- **Output voltage indication through LED**
- **Output as per protection type "intrinsically safe", cat. Ib**
- **With attached terminal box of protection type: "flame-proof enclosure"**
- **Type of protection: IM2 EEx d m [ib] I**

### Application

The power supply unit dNG3-xxib-xx enables the power supply of electrical equipment operated in intrinsically safe systems within hazardous locations which are susceptible to fire-damp.

The power supply unit dNG3-xxib-xx conforms to protection type I M2 EEx dm [ib] I.

Based on a non-intrinsically safe AC input voltage, a regulated, current-limited and intrinsically safe voltage is generated in the output circuit.

For details of the non-intrinsically safe mains voltage and the intrinsically safe DC output voltage, refer to the nameplate of the power supply unit.

### Configuration

The electronics module of the power supply unit dNG3-xxib-xx is installed in a painted grey cast iron enclosure. The enclosure consists of a tub-like bottom section and a vaulted cover. The cover is pressed onto the bottom section by two screws, with an all-around sealing as intermediate layer, and closes the intrinsically safe terminal compartment.

The main compartment of the enclosure bottom section contains the mains transformer and the electronics module which are completely embedded in sealing compound. Only the 2-pin terminal strip for the connection of the intrinsically safe output circuit and the LED for the indicating the functioning protrude from the compound. This LED is on, when the intrinsically safe output voltage is applied and no short-circuit has occurred on the output side.

The electronics module consists of a mains transformer for the galvanic isolation between the non-intrinsically safe supply net and the downstream electronic voltage and current control. A voltage transformer and two elec-

tronic current / voltage-limiting stages connected in series ensure a stabilised output voltage (within the limits of the non-intrinsically safe input voltage) and limit the output current. Two electronic overload stages which act independently from one another, switch off the intrinsically safe output voltage in case of an overload or a short-circuit on the output side. The device may only be connected to the appropriate mains voltage.

The switch-off or switch-on of the intrinsically safe output circuit due to overload is repeated in intervals until the short-circuit or the overload has been eliminated. The LED for indicating the functioning flashes in the cycle of the switch-off and on of the intrinsically safe output voltage.

In the standard version, the power supply unit with its connecting socket of size M32 x 1.5 is screwed into a front face of the terminal box designed as per protection type "flame-proof enclosure", where it is securely fastened to prevent it from self-loosening and twist. The terminal box contains terminal blocks to connect the power

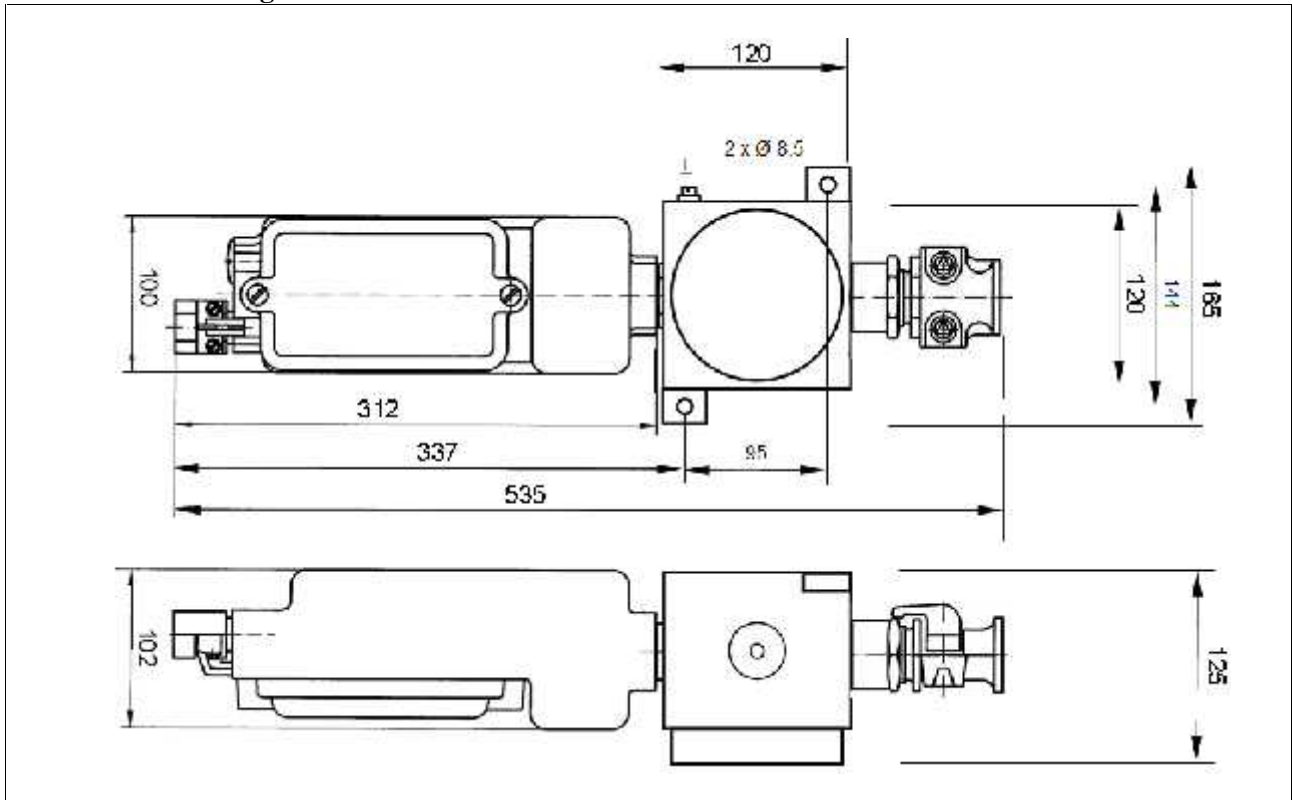
supply circuit. The connecting cable enters into the flame-proof terminal box through a tested and certified cable and line gland of protection type "flame-proof enclosure". This cable entry is installed in the second front face of the terminal box.

Cable entries of various dimensions for different diameters of connecting cables are available. For looping the power supply cable through the flame-proof terminal box, the side faces can also be fitted with 2 cable entries (dimensions up to max. M25x1.5). If not, provide the side faces with flame-proof blind plugs.

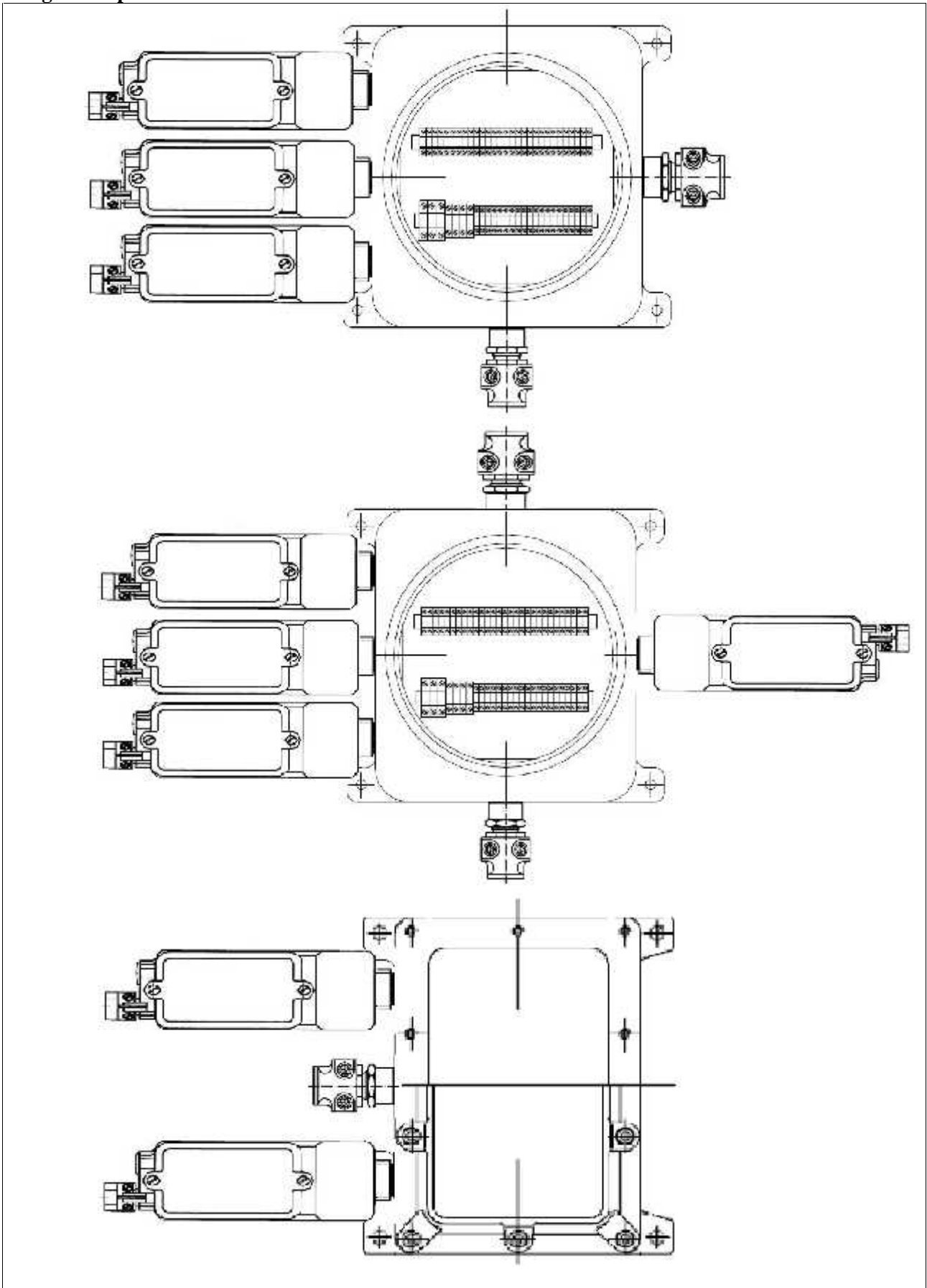
A combination of two or 3 units of type dNG3-xxib-xx is also possible.

The opposite enclosure side of the dNG3-xxib-xx is equipped with a PG16 gland for cable diameters from 9 to 14 mm (optionally also metric equivalents) and a PG16 blind plug (optionally also metric equivalent). The PG16 cable entry (incl. strain relief, protection against buckling and twist) is used for leading through the connecting cables for the intrinsically safe output circuit.

### Dimensional drawing for dNG3-xxib-xx in standard version



Other variants are also available.  
Design examples



FHF Bergbautechnik GmbH & Co. KG  
Eintrachtstr. 95  
42551 Velbert



Phone: +49 (0) 2051 270 - 0  
Fax: +49 (0) 2051 270-366  
Email: [info@fhf-bt.de](mailto:info@fhf-bt.de)  
[www.fhf-bt.de](http://www.fhf-bt.de)