

Converter Type 2313

Ordering Data

Designation	Type	Item no.
Converter	2313	118 306 01 AX



- **Push-in module, European card 100 x 160 mm**
- **Connectable to intrinsic safety telephone networks, with intrinsically safe output**
- **No additional supply required**
- **Two interfaces / channels per card**
- **Protection type: I M 1 EEx ia I**

Description

Connecting the converter Type 2313 with further devices results in the telephone system Type FA 5210/3.

The telephone system Type FA 5210/3 consists of the telephone 5210/3T, the loudspeaker 5801 and the converter Type 2313. It may be connected to any standard analogue telephone exchange with a ringing alternating current of 25 Hz or 50 Hz.

The intrinsically safe telephone system Type: FA 5210/3 supports both telephone exchanges with pulse dialling and dual-tone multifrequency dialling.

The degree of protection of the intrinsically safe telephone electric circuit EEx ia I allows for use in explosive atmospheres in the mining industry.

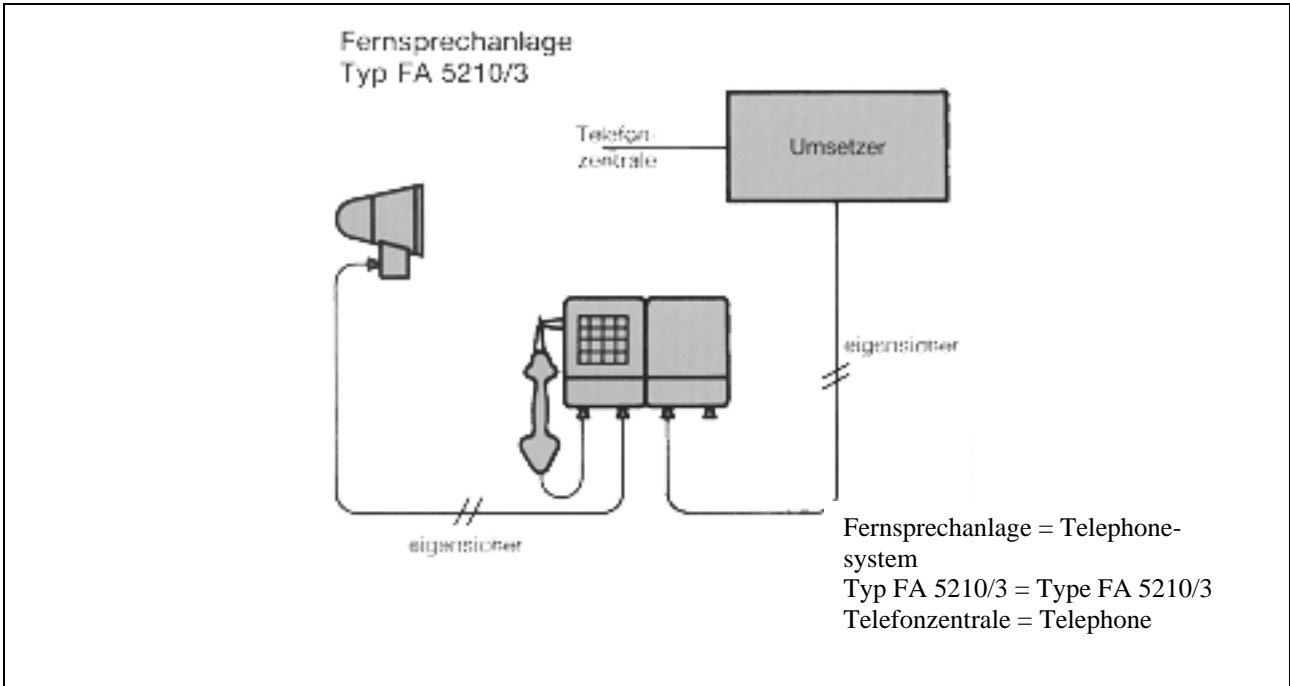
The converter's task is to separate the intrinsically safe part of the telephone system securely from the nonintrinsically safe telephone network. Both the telephone line between the exchange

and the converter and the connection between the converter and the intrinsically safe telephone is two-strand and polarity independent. The converter is supplied with power from the local battery situated in the telephone. An additional energy supply is not required.

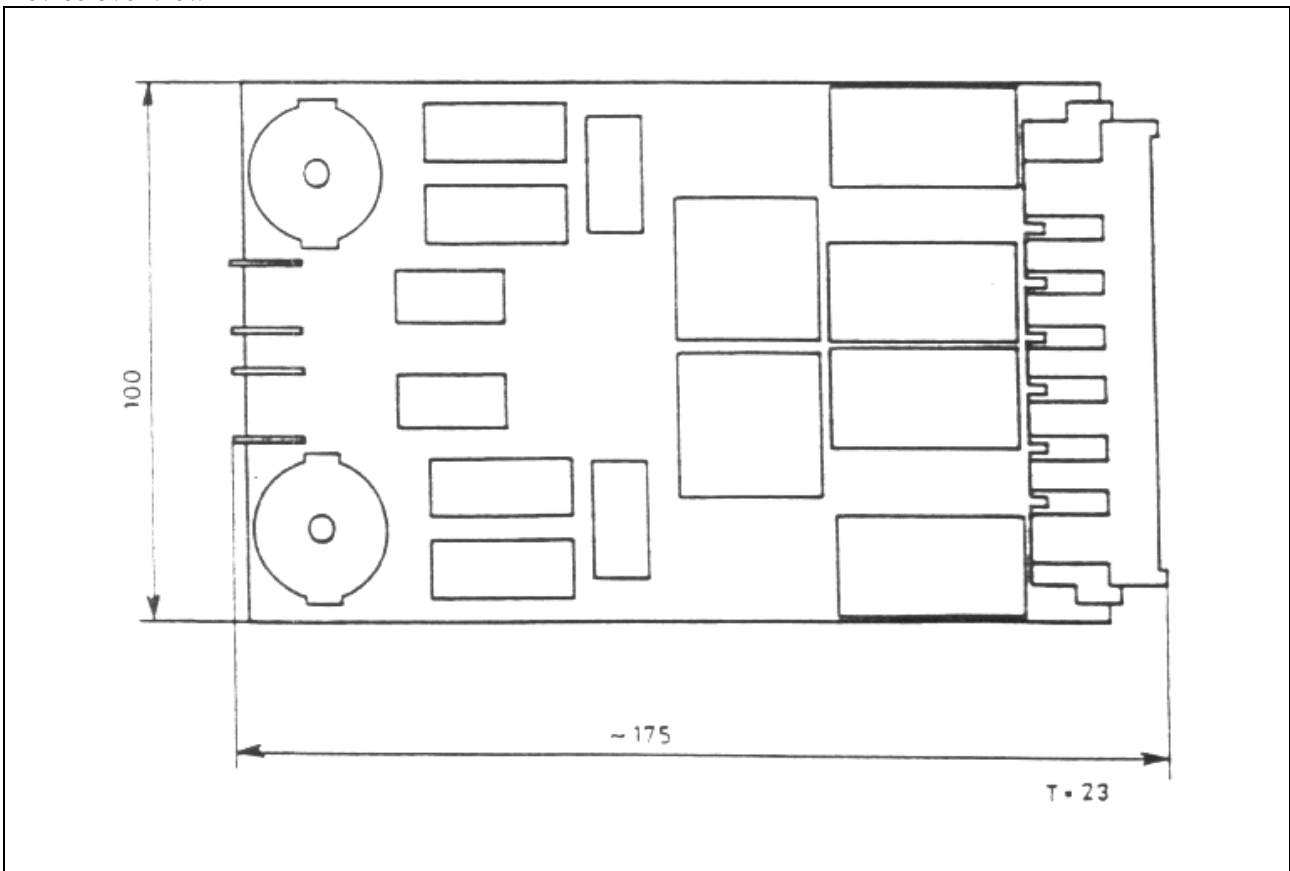
Design

The 2313 converter has been designed as a European size (100 x 160 mm) card for insertion into a 19" rack.

It has two channels, i.e. there are two independent converters (channels) on each card. The non-intrinsically safe telephone network is connected via the terminals on the back, and the intrinsically safe telephone electric circuit is connected via the flat pins in front.

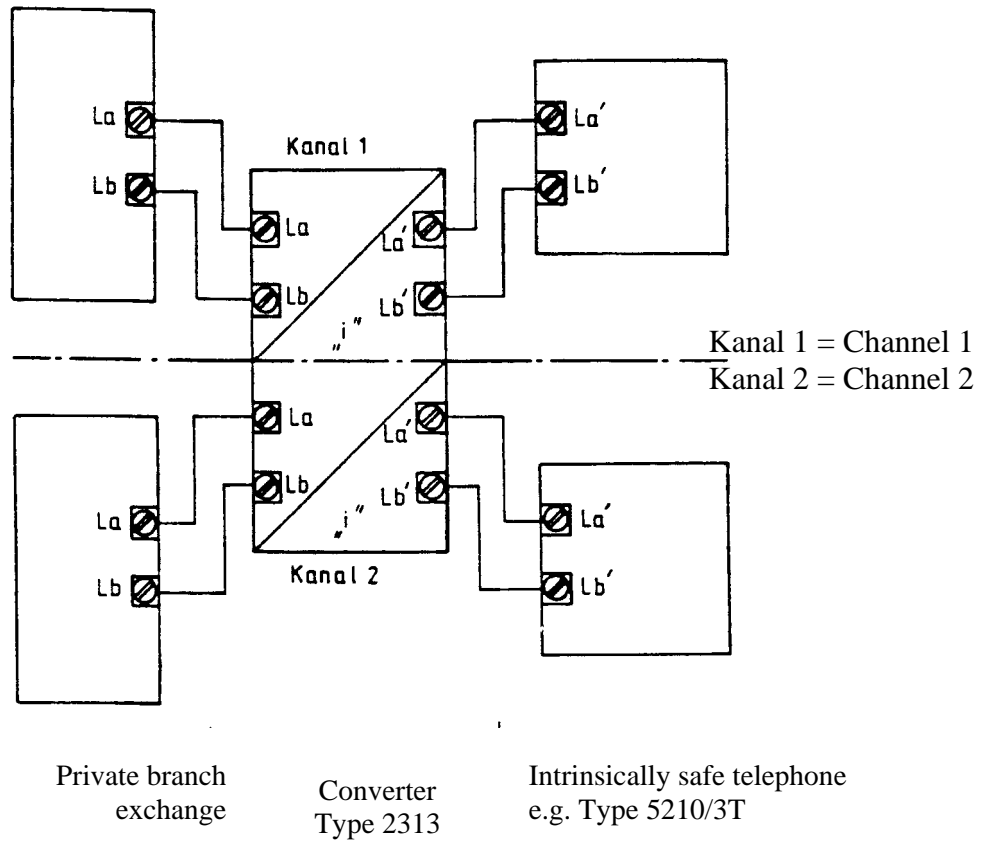


Device overview



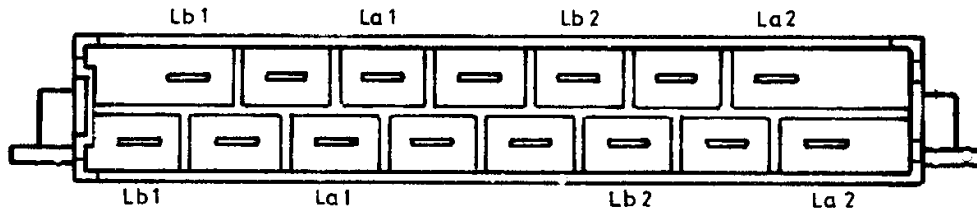
Connection

The device should be connected according to the following wiring diagram.



Connecting the non-intrinsically safe telephone network

The converter is intended for use in a 19" rack, the separating width is 1". The socket board allocated to the slot should be connected according to the following illustration:



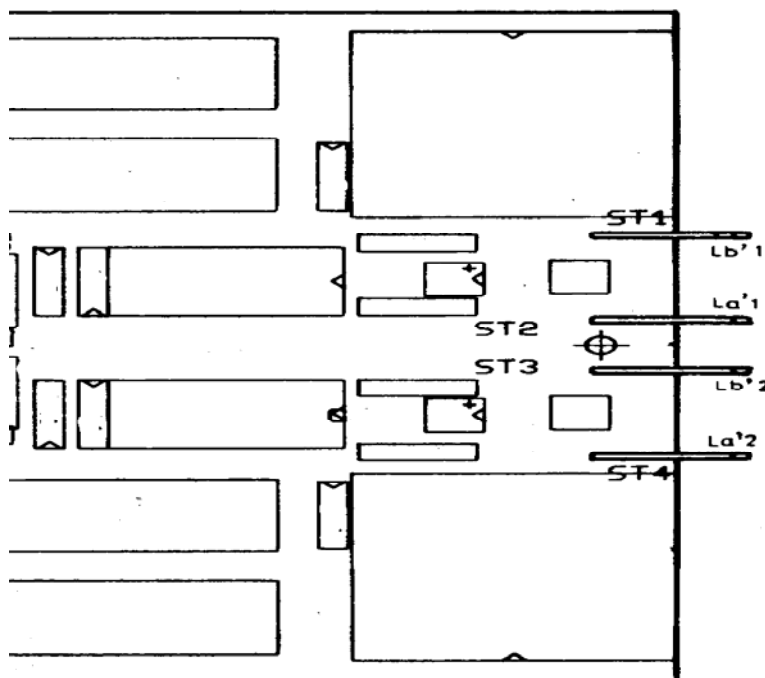
The non-intrinsically safe telephone network should be connected to the terminals La - Lb of the converter. The polarity may be chosen at will. The connection is automatically established when the converter is inserted into the rack.

Connecting the intrinsically safe telephone

Connect the terminals La' - Lb' (flat pins) of the converter with the intrinsically safe telephone electric circuit. The polarity may be chosen at will. The flat pins should be connected according to the following illustration (ST1 = Lb'1, ST2 = La'1; ST3 = Lb'2, ST4 = La'2):

Intrinsically safe and non-intrinsically safe telephone electric circuits must be wired separately and may not be placed in the same cable.

intrinsically



Putting into operation, and setting

Having been connected, the converter is immediately ready for operation. No settings are required.

Service

The converter contains no serviceable parts.


Maintenance

The device does not contain any parts requiring maintenance.

Waste Disposal

The disposal of the packaging material and of used parts must be realised in compliance with the regulations of the country in which the device is installed.

Technical Data Converter Type 2313

Designation	Converter
Type	2313
Electrical characteristics	
Non-intrinsically safe electrical circuits (La – Lb):	
Maximum loop voltage U_{max}	65 V _{DC}
Maximum input current I_{max}	65 mA
Maximum input voltage (ringing voltage) U_{max}	65 V _{AC}
Admissible frequency range (ringing voltage frequency)	25 - 60 Hz
Intrinsically safe electrical circuits (La' – Lb'):	
Maximum ringing voltage U_0	2,5 V _{AC}
Maximum ringing current I_0	5 mA
For connecting to an intrinsically safe electrical circuit with the following maximum values:	
Voltage U_i	14 V _{DC}
Current I_i	95 mA
Power P_i	340 mW
The values for the max. outer inductivity and the max. outer capacitance may only be established in connection with the equipment to be connected.	
Other technical data	
Temperature range:	
Temperature in the installation area (operating temperature)	-20°C bis +40°C
Storage and transport	-30°C bis +70°C
Operating conditions	Installation in non-hazardous areas
Expl. protection class	I M1 EEx ia I
Approval	DMT 03 ATEX E 021 U
Degree of protection according to EN60529	IP20 only if installed in a protective housing
Design	2 converters on one European card 100 x 160 mm
Installation	The converter must be installed in a protective housing with at least IP20 degree of protection.
Connection, intrinsically safe	Flat pin 4,8 x 0,8
Connection, non-intrinsically safe	Terminal block DIN 41612, design F
Dimensions (incl. terminal block)	approx. 100 x 175 x 23 mm (W x H x D)
Weight	Approx. 0.35 kg
Marking	
The nameplate is marked as follows:	
Company	FHF Bergbautechnik GmbH & Co KG D-42551 Velbert Germany
Type	2313  I M1 EEx ia I DMT 03 ATEX E 021 U CE 0158 F. No.... test....(initials, month/year) Intrinsically safe systems only

Warning and Safety Advice

<p>THIS IS A DEVICE WITH A FLAMEPROOF OUTPUT ELECTRICAL CIRCUIT DESIGNED FOR OPERATION IN EXPLOSIVE ATMOSPHERES.</p> <p>Please pay particular attention to the following warning and safety advice:</p>
<p>The connection with other electric devices must be separately approved and certified.</p>
<p>The installation and adjustment of the device must be carried out by qualified personnel in accordance with the prescribed installation regulations taking the specified protection class into account.</p>
<p>The device may only be connected to and operated at the voltage it was designed for.</p>
<p>While operating the device in business or industry facilities, the legally or otherwise required precautions against accidents resulting from the use of electrical systems and devices must be taken.</p>
<p>The device may only be operated under the specified ambient conditions. Unfavourable ambient conditions may damage the appliance, possibly jeopardising the user's life as a result. Unfavourable ambient conditions may be:</p> <ul style="list-style-type: none"> • moisture, dust (observe type of protection) • air humidity too high (> 75% rel., condensing) • inflammable gases, vapours, solvents not covered by the protection class of the device. • ambient temperatures too high (>+40°C) • ambient temperatures too low (<-20°C).
<p>During operation of the device the temperature must not exceed nor fall below the prescribed range of ambient temperatures.</p>
<p>The required modes of operation must be observed.</p>
<p>The device must be installed in a non-hazardous area.</p>
<p>Repairs may be carried out by the manufacturer or by a person appointed by the manufacturer followed by a renewed product conformity inspection.</p>
<p>Should these points not be observed, the explosion protection can no longer be guaranteed.</p>

Requirements / conditions for safe use

<p>The converter must be built into a housing, fulfilling the requirements of the IP20 degree of protection, according to IEC 60144, and which has been put up outside of the hazardous area.</p> <p>The converter must be built into the housing in such a way that the air distance from the exposed parts of intrinsically safe electrical circuits to the metal housing parts and exposed parts of the non-intrinsically safe electrical circuits amount to at least 6 mm.</p> <p>Connection parts for the outer intrinsically safe electrical circuits must be arranged in such a way that the exposed parts are situated at least 50 mm from the connection parts or exposed conductors of the non-intrinsically safe electrical circuits, or are separated from these parts by a wall according to paragraph 6.3.1 of EN50020:1994.</p>
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