



F 3325: 6-channel supply unit (Ex)i

- Supply unit, preferably used for the F 6221 module
 - Supply of transmitters 0/4...20 mA
- EC Type Examination Certificate (ATEX): EX5 02 04 19183 035

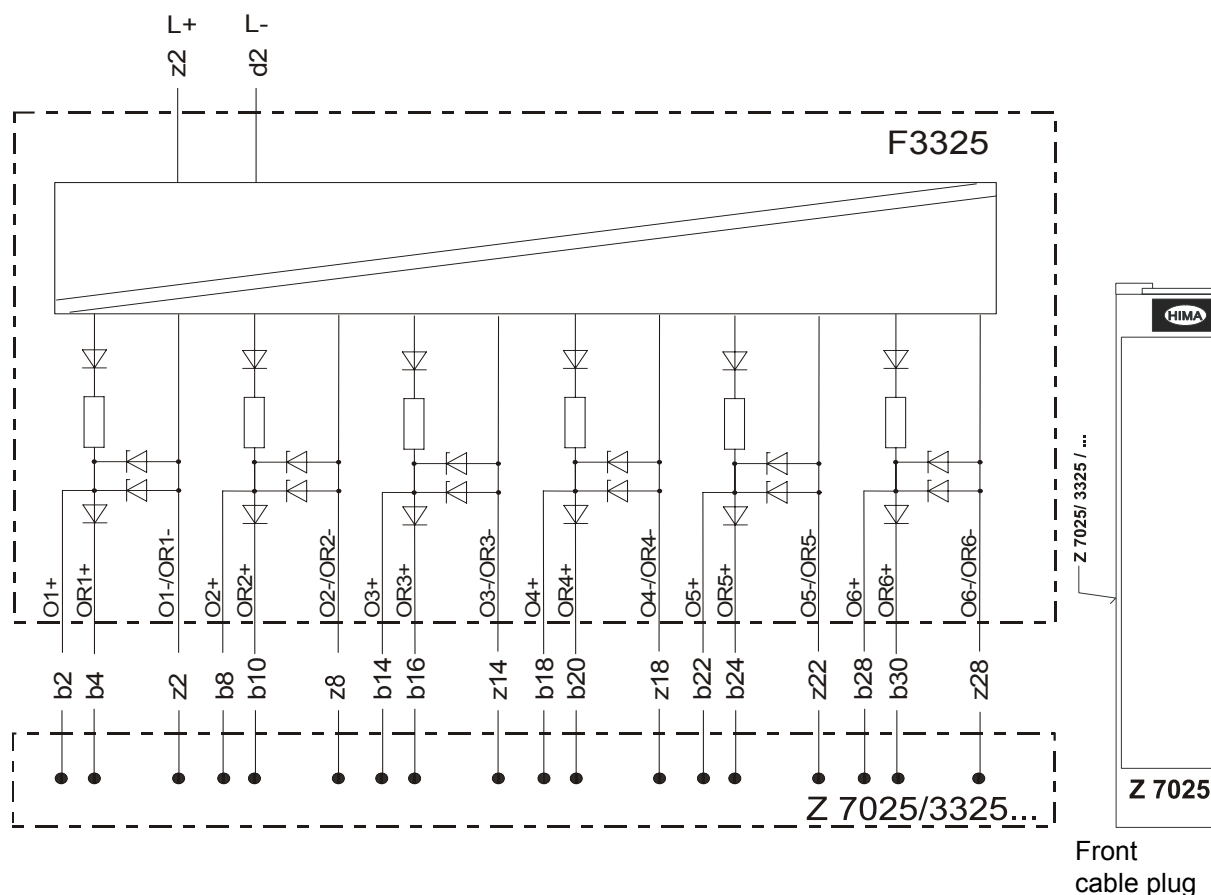


Figure 1: Block diagram and front cable plug

Nominal voltage	19 V at 20 mA load current
No-load voltage	22 V
Short-circuit current	60 mA
Maximum burden	250 Ω
Ex category	II (2) GD [Ex ib] IIC
Space requirements	4 SU
Operating data	24 V / 300 mA



The module must only be operated with forced ventilation (fan). The fan (K 9203) must be installed above the subrack where the F 3325 module is plugged in. If the F 3325 module is operated in an H 41q, the fan (K 9212) must be installed directly under the F 3325 module. The pins d6, d26, b6, b26 on the front plug of the F 3325 are omitted (coding pins on d6, d26, b6, b26).

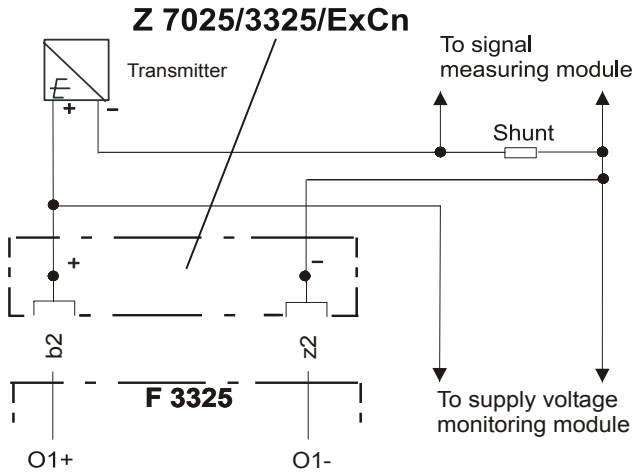
Interconnection with the F 6221 module

The F 3325 module can be interconnected with the F 6221 module in several different ways (see data sheet of the module F 6221 for interconnection).

Single-channel interconnection of the supply module F 3325

6-channel supply module F 3325 with passive transmitter (e.g. for the channels 1 to 6 of the F 6221 module).

Cable type: Z 7025/3325/ExCn, part number 93 3325101



**Module 1
Channel 1**

Figure 2: Single-channel interconnection of the supply module F 3325

Pin allocation

Cable type: Z 7025/3325/ExCn, part number 93 3325101

Channel	Pin	Color
O1-	z2	WH
O1+	b2	BN
O2-	z8	GN
O2+	b8	YE
O3-	z14	GY
O3+	b14	PK
O4-	z18	BU
O4+	b18	RD
O5-	z22	BK
O5+	b22	VT
O6-	z28	GY-PK
O6+	b28	RD-BU
Cable shield		YEGN

Cable
LiYCY
6x2 0.2 mm²
shielded

Figure 3: Pin allocation Z 7025/3325/ExCn, part number 93 3325101

Pin allocation

Cable type: Z 7025/3325/ExCn/R, part number 93 3325102

Channel	Pin	Color
O1-	z2	WH
O1+	b2	BN
OR1-	z2	GN
OR1+	b4	YE
O2-	z8	GY
O2+	b8	PK
OR2-	z8	BU
OR2+	b10	RD
O3-	z14	BK
O3+	b14	VT
OR3-	z14	GY-PK
OR3+	b16	RD-BU
O4-	z18	WH-GN
O4+	b18	BN-GN
OR4-	z18	WH-YE
OR4+	b20	YE-BN
O5-	z22	WH-GY
O5+	b22	GY-BN
OR5-	z22	WH-PK
OR5+	b24	PK-BN
O6-	z28	WH-BU
O6+	b28	BN-BU
OR6-	z28	WH-RD
OR6+	b30	BN-RD
Cable shield		YEGN

Cable
LifYCY
12x2 0.2 mm²
shielded

Figure 4: Pin allocation Z 7025/3325/ExCn/R, part number 93 3325102

Note In Ex applications the cable shield has to be connected to the equipotential bonding. In non-Ex applications the cable shield is connected to the PE terminal / bus bar on the subrack.

1 Operating Instructions

1.1 Application

The module can be used to supply Ex measuring transmitters (0/4 to 20 mA). These transmitters can be installed in potentially explosive atmospheres from zone 1 on.

The cable shield for Ex applications has to be put to potential equalization. In non Ex applications the cable shield is connected to PE bar on the subrack.



No external voltage must be applied at the inputs.

Only these applications are permissible, which are described in the data sheets for F 3325 and F 6221.

1.2 Electrical specifications concerning intrinsic safety

For these specifications please refer to the EC Type Examination Certificate enclosed.

1.3 Assembly and installation

The module is mounted in a 19" subrack. It must be plugged in vertically. The design of the subrack must allow heat dissipation.

Further information for assembly and installation see HIMA main catalog "The H41q and H51q System Families".

Note

The module may not be mounted within a potentially explosive area.

The module is connected to the intrinsically safe field circuits via the cable plug Z 7025.

In addition, the following points should be considered:

- The electronic module including its connections has to be installed in a way that at least the degree of protection IP 20 according to EN 60529: 1991 + A1: 2000 is achieved.
- The separation between intrinsically safe and not intrinsically safe terminals must be ≥ 50 mm (filament dimension), especially between adjacent modules.
- The separation between adjacent intrinsically safe terminals must be ≥ 6 mm (filament dimension).
- Intrinsically safe and not intrinsically safe lines must be installed separately, or the intrinsically safe lines must be provided with additional insulation.
- Intrinsically safe lines must be identifiable, e.g. by the light blue color (RAL 5015) of the insulation.
- The wiring has to be secured mechanically in a way which ensures that in the event of an accidental disconnection, the distance (EN 50 020/ Part 7, Table 4) between the intrinsically safe and not intrinsically safe connections does not fall below the required minimum. (e.g. by bundling).
- The line shield has to be connected to equipotential bonding.
- Modules, which were operated in general electrical system, may not be used thereafter no more in Ex-plants.

The lines used must comply with the following insulation test voltages:

- Intrinsically safe lines ≥ 1000 VAC
- Not intrinsically safe lines ≥ 1500 VAC

Stranded wires must be provided with wire end ferrules. The terminals must be suitable for clamping the wire cross section.

The applicable regulations and standards have to be complied with, especially

- DIN EN 60079-14:1997 (VDE 0165, Part 1: 1998)
- EN 50 014: 1999 (VDE 0170/0171 Part 1 :2000)
- EN 50 020: 1994 (VDE 0170/0171 Part 7 :1996)

1.4 System start-up

Before the first system start-up, an Ex-expert has to check whether the system has been correctly installed, especially the supply voltage connections and the connections of the intrinsically safe circuits.

1.5 Maintenance

In case of a failure, the defective module must be replaced with the same or with another approved type.



Any repair work must only be carried out by the manufacturer!

EC Type Examination Certificate

No.: EX5 02 04 19183 35



in accordance with Annex III of Council Directive No. 94/9/EC for equipment and protective systems intended for use in potentially explosive atmospheres (ATEX) for

HIMA Paul Hildebrandt GmbH + Co KG
 Albert-Bassermann-Straße 28

68782 Brühl

Product: Electrical apparatus type of protection intrinsically safety i (EX-RL)

Model: Automation device
 F 3325

Parameters: see appendix (four pages)

The above mentioned product meets the provisions of the Directive.

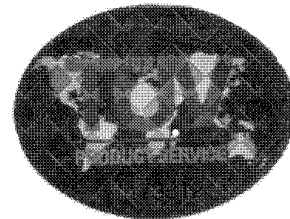
This certificate is issued on the basis of the product provided for testing and certification and on its technical documentation. The detailed results of the test and the provided technical documentation are listed in

Test report no.: 70013102.2

This certificate pertains only to the sample product submitted to TÜV PRODUCT SERVICE for testing. Therefore this certificate has no specified period of validity.

Released with the above mentioned certificate number by the Certification Body of TÜV PRODUCT SERVICE.

Department: TA-ES/MUC-IQSE / jb
 Date: 25.04.2002



TÜV PRODUCT SERVICE GMBH is a Notified Body in accordance with Council Directive 94/9/EC for equipment and protective systems intended for use in potentially explosive atmospheres with the identification number 0123.

TÜV PRODUCT SERVICE GMBH · Zertifizierstelle · Ridlerstrasse 65 · D-80339 München



Appendix to EC Type Examination Certificate

No.: EX5 02 04 19183 035



Appendix to EC Type Examination Certificate

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1 Description

The module F 3325 is a associated electrical apparatus for installation only outside an atmosphere capable of explosion. This subassembly unit for installation in a subrack consist of one PCB-board. In order to supply (Ex-) transmitters six intrinsically safe power supply ports are connectable at the front. The output- and power supply ports are connectable at the rear of the module.

The environmental temperature averages $-20^{\circ}\text{C} \leq T_{\text{amb}} \leq 60^{\circ}\text{C}$.

From the manual of instruction you will see the general information for secure use.

2 Electrical data

2.1 Intrinsically output circuits, strip X200

Six voltages of 22V for the supply of the (Ex-) transmitters are provided. These are intrinsically safe and safety isolated up to a peak value of 375V against the power supply circuit.

Port	Output	Function
z2	O1-	Voltage output 1 -
b2	O1+	Voltage output 1 +
b4	OR1+	Redundant voltage output 1 +
z8	O2-	Voltage output 2 -
b8	O2+	Voltage output 2 +
b10	OR2+	Redundant voltage output 2 +
z14	O3-	Voltage output 3 -
b14	O3+	Voltage output 3 +
b16	OR3+	Redundant voltage output 3 +
z18	O4-	Voltage output 4 -
b18	O4+	Voltage output 4 +
b20	OR4+	Redundant voltage output 4 +
z22	O5-	Voltage output 5 -
b22	O5+	Voltage output 5 +
b24	OR5+	Redundant voltage output 5 +
z28	O6-	Voltage output 6 -
b28	O6+	Voltage output 6 +
b30	OR6+	Redundant voltage output 6 +



2.2 Output circuits

Voltage per output circuit, U_o	crest value DC 23,2 V
Amperage per output circuit, I_o	crest value DC 75,6 mA
Power per output circuit, P_o	crest value 657,7 mW
Characteristic curve	trapeze
Internal capacitance per output circuit, C_i	negligible
Internal inductance per output circuit, L_i	negligible

2.3 EEx ib IIC

Max. connectable inductance for one output circuit	$L_o = 6$ mH
Max. connectable capacitance for one output circuit	$C_o = 138$ nF
Max. connectable inductance for parallel connection of two output circuits	$L_o = 1,5$ mH
Max. connectable capacitance for parallel connection of two output circuits	$C_o = 138$ nF

2.4 EEx Ib IIB

Max. connectable inductance for one output circuit	$L_o = 25$ mH
Max. connectable capacitance for one output circuit	$C_o = 1,01$ μ F
Max. connectable inductance for parallel connection of two output circuits	$L_o = 7$ mH
Max. connectable inductance for parallel connection of two output circuits	$C_o = 1,01$ μ F



2.5 Power supply circuit, strip X1, port z2/d2 (non-intrinsically safe)

Nominal voltage	DC 24 V
Voltage	crest value DC 30 V
Power	6 W

Absolute maximum voltage without affecting the intrinsic safety U_m , crest value 40V

3 Identifying marking

The legible and durable marking must include the following option list:

- Name and address of the manufacturer
- Year of construction
- the identifier $\text{Ⓢ II (2)GD [EEx Ib] IIC}$

4 Production quality assurance

The manufacturer shall operate an approved quality system for production, final equipment inspection and testing according Annex IV directive 94/9/EC.

Munich, April 25th 2002

TÜV AUTOMOTIVE GmbH TA-ES/MUC

Dipl.-Ing. J. Blum