Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

(1) **CERTIFICATE OF CONFORMITY**

(2) **PTB No. Ex-97.D.2145 X**

(T R A N S L A T I O N)

(3) This certificate is issued for the electrical apparatus

Contrans I_remote isolation switching amplifier type V17331-64

(4) manufactured by Hartmann & Braun AG
D-60484 Frankfurt

(5) This electrical apparatus and any acceptable variation thereto is specified in the Schedule to this Certificate of Conformity.

(6) The Physikalisch-Technische Bundesanstalt, being an Approved Certification Body in accordance with article 14 of the Council Directive of the European Communities of December 18, 1975 (76/117/EEC), confirms that this electrical apparatus has been found to comply with the harmonized European Standards

Electrical apparatus for potentially explosive atmospheres

EN 50 014: 1977 + A1...A5 (VDE 0170/0171 Part 1/1.87) General Requirements
EN 50 020: 1977 + A1...A5 (VDE 0170/0171 Part 7/4.92) Intrinsic Safety "i"

after the apparatus has been successfully subjected to pattern evaluation. The results of this pattern evaluation have been recorded in a confidential test report.

(7) The apparatus marking shall include the code:

[EEx ia] IIC

(8) The manufacturer shall be responsible for ensuring that any apparatus bearing the above marking conforms to the test documents specified in the Schedule to this certificate and that the routine verifications and tests prescribed have been carried out successfully.

(9) The electrical apparatus may be marked with the Distinctive Community Mark according to Annex II to the Council Directive of February 6, 1979 (79/196/EEC). A facsimile of this mark is printed on this sheet of the certificate.

By order

Braunschweig, September 04, 1997

(signature)

Dr.-Ing. Johannsmeyer
Oberregierungsrat

4 pages, correct and complete as regards content.
By order

Dr.-Ing. Johannsmeyer
Regierungsdirektor

Braunschweig, May 12, 1999

Test certificates without signature and official stamp shall not be valid.
The certificates may be circulated only without alteration.
In case of dispute, the German text shall prevail.

Physikalisch-Technische Bundesanstalt

SCHEDULE

to Certificate of Conformity PTB No. Ex-97.D.2145 X

The Contrans I_remote isolation switching amplifier type V17331-64 is used for the transmission of digital electrical signals from the explosion hazardous area to the non-explosion hazardous area.

The maximum permissible ambient temperature is 60 °C.

Electrical data

Supply circuit..... direct voltage 20 - 30 V, approx. 1 W
(contacts 1 and 2) Maximum voltage: U_m = 40 V

Interface circuit..... for connection to a serial interface
(contacts 3 and 6) (data circuit)
Maximum voltage: U_m = 60 V

Input circuit..... type of protection Intrinsic Safety EEx ia IIB/IIC
(contacts 14, 15 resp. 16, 17 resp. EEx ib IIB/IIC
resp. 10, 11 resp. 12, 13) maximum values per circuit:
U_o = 9.6 V
I_o = 16 mA
P_o = 38 mW
linear characteristic

	IIB	IIC
maximum permissible external inductance	530 mH	140 mH
maximum permissible external capacitance	41 µF	4.8 µF

The following maximum values result for the interconnection of any two of the four circuits:
U_o = 9.6 V
I_o = 32 mA
P_o = 76 mW
linear characteristic

	IIB	IIC
maximum permissible external inductance	140 mH	37 mH
maximum permissible external capacitance	41 µF	4.8 µF

The following maximum values result for the interconnection of any three of the four circuits:
U_o = 9.6 V
I_o = 48 mA
P_o = 114 mW
linear characteristic

Z 14-5 320 17-00.93

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Schedule to Certificate of Conformity PTB No.-Ex-97.D.2145 X

	IIB	IIC
maximum permissible external inductance	64 mH	17 mH
maximum permissible external capacitance	41 µF	4.8 µF

The following maximum values result for the interconnection of all four circuits:

U_o = 9.6 V
I_o = 64 mA
P_o = 152 mW
linear characteristic

	IIB	IIC
maximum permissible external inductance	36 mH	9.4 mH
maximum permissible external capacitance	41 µF	4.8 µF

The intrinsically safe input circuits are safely electrically isolated from all other circuits up to a peak value of the nominal voltage of 375 V.

The intrinsically safe input circuits have to be considered as interconnected.

Test documents

1. Certificate of conformity PTB No. Ex-97.D.2144 X — signed on
2. Description No. 16-264PT-9 (1 sheet) — 1997-07-03
3. Drawing No. 16-264PT-8 — 1997-07-03

Special Condition

The connection facilities of the Contrans I_remote isolation switching amplifier type V17331-64 shall be installed in such a way that at least the degree of protection IP20 according to IEC 529 is ensured.

By order

Braunschweig, September 04, 1997

(signature)

Dr.-Ing. Johannsmeyer
Oberregierungsrat

Physikalisch-Technische Bundesanstalt

1. SUPPLEMENT

to Certificate of Conformity PTB No. Ex-97.D.2145 X

manufactured by Hartmann & Braun AG
D-60484 Frankfurt

The Contrans I_remote isolation switching amplifier type V17331-64 is extended to the Contrans I_remote frequency converter type V17336-62.

The Contrans I_remote frequency converter type V17336-62 is based on the hardware of the Contrans I_remote isolation switching amplifier type V17331-64. The modifications concern the software of the isolation switching amplifier.

The "electrical data", the "special condition" as well as all other specifications indicated, are unchanged valid also for the Contrans I_remote frequency converter type V17336-62.

Test document

Description No. 16-264PT-11 signed on 1997-11-12

By order: Braunschweig, February 13, 1998

(signature)

Dr.-Ing. Johannsmeyer
Regierungsdirektor

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