Translation

(1) # EC-Type Examination Certificate

(2) **- Directive 94/9/EC -**
Equipment and protective systems intended for use in potentially explosive atmospheres

(3) ## DMT 02 ATEX E 121 X

(4) **Equipment:** **I/P-converter type Doc. 900771**

(5) **Manufacturer:** **ABB Automation Products GmbH**

(6) **Address:** **D 32425 Minden**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the schedule to this type examination certificate.

(8) The certification body of Deutsche Montan Technologie GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.
The examination and test results are recorded in the test and assessment report BVS PP 02.2067 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 50014: 1997+A1-A2	General requirements
EN 50018: 2000	Flameproof enclosure

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate

(12) The marking of the equipment shall include the following:

II 2G EEx d IIC T4/T5/T6

Deutsche Montan Technologie GmbH
Essen, dated 28. June 2002

Signed: Jockers
DMT-Certification body

Signed: Eickhoff
Head of special services unit

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Am Technologiepark 1, 45307 Essen, Telefon (0201)172-1416, Telefax (0201)172-1716

DMT

(13) Appendix to

(14) # EC-Type Examination Certificate

DMT 02 ATEX E 121 X

(15) 15.1 Subject and type

I/P-converter type Doc. 900771

15.2 Description

The converter serves for the transformation of an injected DC current into a proportional pressure. As pressure media neither flammable gases nor Oxygen or Oxygen enriched gas mixtures are used.

Optionally, a control unit, type of protection Intrinsic Safety (EEx ia IIC T6/T5/T4; TÜV 99 ATEX 1487 X), may be used.

15.3 Parameters

15.3.1 Electrical data (non intrinsically safe supply)

Nominal current	≤	50	mA

15.3.2 Electrical data (intrinsically safe supply)

As per TÜV 99 ATEX 1487 X

15.3.3 Pneumatic data

Supply (compressed air)	≤	10	bar
Output signal	≤	1	bar

15.3.4 Thermal data (non intrinsically safe supply)

Maximum input current	50	50	mA
Ambient temperature range - 40 °C up to	55	70	85 °C
Temperature class	T6	T5	T4

15.3.5 - Thermal data (intrinsically safe)

Maximum input current	50	60	60	60	100	100	120	120	150	mA
Ambient temperature range - 40 °C up to	60	55	70	85	55	85	45	80	70	°C
Temperature class	T6	T6	T5	T4	T5	T4	T5	T4	T4	

(16) Test and assessment report

BVS PP 02.2067 EG as of 28.06.02

(17) Special conditions for safe use

17.1 The I/P Converter is designed for use at an ambient temperature range of –40 °C up to 85 °C at maximum.

17.2 If the I/P Converter is used at an ambient temperature above 60 °C or below –20 °C, cable entries and cable approved for a service temperature corresponding to the maximum ambient temperature increased by 10 K respectively corresponding to the minimum ambient temperature shall be used.

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17.3.1 Variants with intrinsically safe control unit shall not be used intrinsically safe once they have been used in type of protection flameproof enclosure from a non intrinsically safe supply.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

45307 Essen, 28. June 2002
BVS-We/Ar A 20010773

Deutsche Montan Technologie GmbH

DMT-Certification body

Head of special services unit

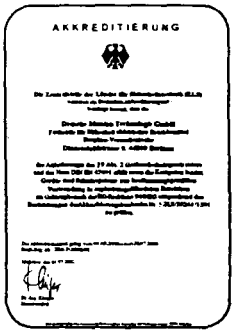
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DMT

Deutsche
Montan Technologie GmbH

DIN EN ISO 9001 zertifiziert

Fachstelle für Sicherheit
elektrischer Betriebsmittel -
Bergbau-Versuchsstrecke



Prüfprotokoll - Test and Assessment Report
BVS PP 02.2067 EG

EG - Baumusterprüfung für Geräte und Komponenten zur Verwendung in explosionsgefährdeten Bereichen (Richtlinie 94/9/EG)

EC - Type Examination for Equipment and Components Intended for Use in Potentially Explosive Atmospheres (Directive 94/9/EC)

DAR-Reg.-Nr.:
ZLS-P-359-2/01

Gegenstand: Gerät Typ Subject: Equipment type	**I/P Umformer Typ DOC 900771** **I/P Converter Type DOC 900771**
Hergestellt und zur Prüfung vorgelegt Manufactured and submitted for examination	**ABB Automation Products GmbH**
Anschrift Address	**Schillerstraße 72, D-32425 Minden**
Prüfgrundlage Basis for examination	**Anhang II der Richtlinie 94/9/EG** **Annex II of Directive 94/9/EC**
Verwendete Normen Standard basis	EN 50014:1997+A1-A2 Allgemeine Bestimmungen General requirements EN 50018:2000 Druckfeste Kapselung Flameproof enclosure 'd'
Prüfgrundlage für Sicherheits- und Gesundheitsanforderungen, die nicht von den verwendeten Normen abgedeckt werden. Basis for those health and safety requirements not covered by the standard basis	**Entfällt** **Not relevant**
Schutzartkennzeichen Code for type of protection	**EEx d IIC T4, T5 oder T6** **EEx d IIC T4, T5 or T6**
Antragsnummer Project number	**A 20010773**

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Dinnendahlstraße 9 D-44809 Bochum Telefon - Phone 0201/172-3855 Telefax-Fax 0201/172-3924

DMT

1) Gegenstand und Typ

I/P-Umformer Typ DOC 900771

Subject and Type

I/P- Converter type DOC 900771

2) Beschreibung

Der Stellumformer dient der Umformung eines eingeprägten Gleichstromes in einen proportionalen Druck. Als Druckmedien werden weder brennbare Gase noch Sauerstoff oder mit Sauerstoff angereicherte Gase verwendet.

Wahlweise wird ein Steuerkopf eingebaut, der in der Zündschutzart Eigensicherheit (EEx ia IIC T6/T5/T4; TÜV 99 ATEX 1487 X) ausgeführt ist.

Description

The converter serves for the transformation of an injected DC current into a proportional pressure. As pressure media neither flammable gases nor Oxygen or Oxygen enriched gas mixtures are used.

Optionally, a control unit, type of protection Intrinsic Safety (EEx ia IIC T6/T5/T4; TÜV 99 ATEX 1487 X), may be used.

3) Dokumentation - Descriptive Documents

3.1 Beschreibung (6 Blatt) - Description (6 sheet), unterschrieben am - signed 14.06.02

3.2

Zeichnung Nr. - Drawing No.	vom - dated	unterschrieben am - signed
900771	09.12.00/14.06.02	14.06.02
901100	12.12.00/10.06.02	14.06.02
901101	12.12.00/20.11.01	14.06.02
901102	12.12.00/20.11.01	14.06.02
901103	12.12.00/20.11.01	14.06.02
901104	12.12.00/20.11.01	14.06.02
901105	12.12.00/20.11.01	14.06.02
901106	12.12.00/20.11.01	14.06.02
901107	12.12.00/20.11.01	14.06.02
901108	12.12.00/20.11.01	14.06.02
901109	12.12.00/20.11.01	14.06.02
901114	20.06.00	14.06.02
901115	20.06.00	14.06.02
901116	20.06.00	14.06.02
901117	20.06.00	14.06.02
901118	20.06.00	14.06.02
901119	20.06.00	14.06.02
901120	20.06.00	14.06.02
901137	15.01.02/14.06.02	14.06.02

3.3 Auszug aus der Betriebsanleitung (2 Blatt) - Extract from the instructions (2 sheet), unterschrieben am - signed 14.06.02

3.4 Verwendete Prüfmuster - Test samples

BVS 081/2002	Gehäuse	Enclosure
BVS 146/2002	Sinterscheiben	Sinter disks

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4) Kenngrößen - Parameters

4.1	Elektrische Daten (nicht eigensicher) Bemessungsstromstärke	Electrical data (non intrinsically safe) Nominal current							≤	50	mA
4.2	Elektrische Daten (eigensicher) Gemäß TÜV 99 ATEX 1487 X	Electrical data (intrinsically safe) As per TÜV 99 ATEX 1487 X									
4.3	Pneumatische Daten Versorgung (Druckluft) Ausgangssignal	Pneumatic data Supply (compressed air) Output signal							≤ ≤	10 1	bar bar
4.4	Thermische Daten (nicht eigensicher)	Thermal data (non intrinsically safe)									
	Max. Eingangsstrom - Maximum input current								50	50	50 mA
	Umgebungstemperaturbereich Ambient temperature range	- 40 °C bis - up to							55	70	85 °C
	Temperaturklasse - Temperature class								T6	T5	T4
4.5	Thermische Daten (eigensicher)	Thermal data (intrinsically safe)									
	Max. Eingangsstrom - Maximum input current		50	60	60	60	100	100	120	120	150 mA
	Umgebungstemperaturbereich Ambient temperature range	- 40 °C bis - up to	60	55	70	85	55	85	45	80	70 °C
	Temperaturklasse - Temperature class		T6	T6	T5	T4	T5	T4	T5	T4	T4

5) Kennzeichnung - Marking

Die Kennzeichnung (gut sichtbar, lesbar und dauerhaft) umfasst die folgenden Angaben:
The marking shall be visible, legible and durable. It shall contain the following:

5.1 Name und Anschrift des Herstellers - The name and address of the manufacturer
Typ – Type DOC 900771
Herstellungsjahr - Year of construction
⟨Ex⟩ II 2G EEx d IIC T4/T5/T6
Fertigungsnummer - Serial number
Bescheinigungsnummer - Certificate number

5.2 Die Kennzeichnung, die normalerweise für den betreffenden Gegenstand in den Konstruktionsnormen vorgesehen ist.
The regular marking corresponding to the product standard for the subject.

6) Stückprüfungen

Der Hersteller muss die Stückprüfungen nach 24 von EN 50014: 1997 und notwendige Prüfungen durchführen, um sicherzustellen, dass der gefertigte Gegenstand mit den Unterlagen, die der Prüfstelle zusammen mit dem Prototyp oder dem Muster eingereicht wurden, übereinstimmt. Er muss auch die Stückprüfungen durchführen, die in den betreffenden Europäischen Normen vorgeschrieben sind.

Die Stückprüfung nach 16 von EN 50018:2000 kann entfallen, da die Überdruckprüfung nach 15.1.3.1 dieser Norm mit einem Prüfdruck entsprechend dem 4fachen Bezugsdruck bestanden wurde.

Die Durchführung der Stückprüfungen ersetzt nicht das laut Konformitätsbewertungsverfahren (Artikel 8 der Richtlinie 94/9/EG) zusammen mit dem Modul der EG-Baumusterprüfung erforderliche und vom Hersteller zu unterhaltende Verfahren gemäß Anhang IV bis VII der Richtlinie 94/9/EG.

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Routine verifications and tests

The manufacturer shall make the routine verifications and tests required by 24 of EN 50014: 1997 necessary to ensure that the subject produced complies with the specification submitted to the testing station together with the prototype or sample. He shall also make any routine verifications and tests required by the respective European Standards.

The routine test as specified in 16 of EN 50018:2000 may be omitted as the overpressure test according to 15.1.3.1 of said standard was carried out successfully with a test pressure of four times the reference pressure.

These routine verifications and tests do not substitute for the procedure defined in annexes IV to VII inclusive of Directive 94/9/EC as required, in addition to the module EC-Type Examination, for the conformity assessment procedure (article 8 of Directive 94/9/EC).

7) Auflagen/Bedingungen für die sichere Anwendung

7.1 Der I/P Umformer ist geeignet für Einsatz in einem Umgebungstemperaturbereich von –40 °C bis maximal 85 °C.

7.2 Bei Betrieb des I/P Umformers in Umgebungstemperaturen über 60 °C bzw. unter –20 °C ist sicherzustellen, dass Leitungseinführungen und Leitungen verwendet werden, die für eine Betriebstemperatur entsprechend der maximalen Umgebungstemperatur zuzüglich 10 K bzw. entsprechend der minimalen Umgebungstemperatur geeignet sind.

7.3 Varianten mit eigensicherem Steuerkopf dürfen nach Verwendung in Zündschutzart Druckfeste Kapselung mit nicht-eigensicherer Speisung nicht mehr eigensicher betrieben werden.

Special conditions for safe use

7.1 The I/P Converter is designed for use at an ambient temperature range of –40 °C up to 85 °C at maximum.

7.2 If the I/P Converter is used at an ambient temperature above 60 °C or below –20 °C, cable entries and cable approved for a service temperature corresponding to the maximum ambient temperature increased by 10 K respectively corresponding to the minimum ambient temperature shall be used.

7.3 Variants with intrinsically safe control unit shall not be used intrinsically safe once they have been used in type of protection flameproof enclosure from a non intrinsically safe supply.

8) Sicherheitstechnisch relevante Informationen

Die Kenntnis der Angaben unter den Nummern 1, 2, 4 und 7 ist für die sichere Verwendung erforderlich. Die Angaben sind in der im Auszug vorgelegten Betriebsanleitung (siehe 3.3).

Information relevant for safety

The information as given in clauses 1,2,4 and 7 is relevant for safe use. The information is included in the relevant extract of the manufacturer's instructions (see 3.3).

44809 Bochum, den 28.06.02
BVS-We/Ar A 20010773

Deutsche Montan Technologie GmbH
Fachstelle für Sicherheit elektrischer Betriebsmittel
Bergbau-Versuchsstrecke

Der Sachverständige
The Testing Officer

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Anhänge - Annexes

Protokoll Report	Allgemeine Bestimmungen EN 50014:1997+A1-A2 General requirements EN 50014:1997+A1-A2	(P-EN 50014)
Protokoll Report	Druckfeste Kapselung EN 50018:2000 Flameproof enclosure EN 50018:2000	(P -EN 50018)

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Translation

(1) 2. Supplement to the EC-Type Examination Certificate

(2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC
Supplement accordant with Annex III number 6

(3) No. of EC-Type Examination Certificate: **BVS 02 ATEX E 121 X**

(4) Equipment: **I/P-Converter type DOC.900771**

(5) Manufacturer: **ABB Automation Products GmbH**

(6) Address: **Schillerstraße 72, 32425 Minden, Germany**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this supplement.

(8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive. The examination and test results are recorded in the test and assessment report BVS PP 02.2067 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 60079-0:2012 General requirements
EN 60079-1:2007 Flameproof enclosure „d"

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the appendix to this certificate.

(11) This supplement to the EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:



II 2G Ex d IIC T4, T5 or T6 Gb

DEKRA EXAM GmbH
Bochum, dated 18th June 2013

Signed: Simanski
Certification body

Signed: Dr. Wittler
Special services unit

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DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Phone +49.234.3696-105 Fax +49.234.3696-110 zs-exam@dekra.com

(13) Appendix to

(14) **2. Supplement to the EC-Type Examination Certificate**
BVS 02 ATEX E 121 X

(15) 15.1 Subject and type

I/P Converter type DOC.900771

15.2 Description

Description of change

Update to the current version of the standard
Modification of the surface coating
Modification of the enclosure material

Description of the equipment

The converter serves for the transformation of an injected DC current into a proportional pressure. As pressure media neither flammable gases nor Oxygen or Oxygen enriched gas mixtures are used.

Optionally, a control unit, type of protection Intrinsic Safety (Ex ia IIC T6/T4; TÜV 99 ATEX 1487 X), may be used.

15.3 Parameters

15.3.1 Electrical data (non-intrinsically safe)

Nominal current				≤ 50	mA

15.3.2 Electrical data (intrinsically safe)

As per TÜV 99 ATEX 1487 X (1-3 Supplement)

15.3.3 Pneumatic data

TEIP11					
Supply (compressed air)				≤ 10	bar
Output signal				≤ 1	bar
TEIP11-PS					
Supply (compressed air)				≤ 2.5	bar
Output signal				≤ 2	bar

15.3.4 Thermal data (non-intrinsically safe)

Maximum input current		50	50	50	mA
Ambient temperature range	-40 °C up to	55	70	85	°C
Temperature class		T6	T5	T4	

15.3.5 Thermal data (intrinsically safe)

As per TÜV 99 ATEX 1487 X (1-3 Supplement)

(16) Test and assessment report

BVS PP 02.2067 EG as of 18th June 2013

(17) Special conditions for safe use

The I/P Converter is designed for use at an ambient temperature range of -40 °C up to 85 °C at maximum.

If the I/P Converter is used at an ambient temperature above 60 °C or below -20 °C, cable entries and cable approved for a service temperature corresponding to the maximum ambient temperature increased by 10 K respectively corresponding to the minimum ambient temperature shall be used.

Variants with intrinsically safe control unit shall not be used intrinsically safe once they have been used in type of protection flameproof enclosure from a non-intrinsically safe supply.

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We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH
44809 Bochum, 18th June 2013
BVS-Sit/Ma A 20130104

Certification body

Special services unit

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