Translation

(1) # 1. 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: **DMT 02 ATEX E 234 X**

(4) Equipment: **Inspection-glass luminary type REL01-Ex**

(5) Manufacturer: **F.H. Papenmeier GmbH & Co. KG**

(6) Address: **Talweg 2, 58239 Schwerte, 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 02.2121 EG.

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

EN 60079-0:2012 General requirements
EN 60079-11:2012 Intrinsic safety 'i'

(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 ia IIC T4/T5/T6 Gb
I M2 Ex ia I Mb

DEKRA EXAM GmbH
Bochum, dated 8th march 2013

Signed: Dr. Eickhoff
Certification body

Signed: Dr. Wittler
Special services unit

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) **1. Supplement to the EC-Type Examination Certificate**
DMT 02 ATEX E 234 X

(15) 15.1 Subject and type

Inspection-glass luminary type REL01-Ex (previous designation type REL01)

15.2 Description

The Inspection-glass luminary type REL01-Ex is designed for illumination purposes of inspection assemblies and comprises a metallic enclosure containing a printed circuit board fitted with electronic components.

The electronic components on the printed circuit board are embedded in casting compound with the exception of the light emitting diodes arranged as a chain.

The supply circuit intended to be connected to an IS circuit is led out of the casting compound and the enclosure by means of a permanently connected cable (length 3 m) providing open leads.

15.3 Parameters

15.3.1 Supply circuit

Voltage	U_i	AC/DC	30	V
Current	I_i		250	mA
Power	P_i		2	W
Effective internal capacitance	C_i		negligible	
Effective internal inductance	L_i		negligible	

15.3.2 Ambient temperature range

Group I application: - 5 °C to + 60 °C

Group II application: - 5 °C to + (see table)

Temperature class with reference to ambient temperature and supply power

Temperature class	max. permissible ambient temperature T_a	Power P_i
T1 to T4	60 °C	2 W
T5	60 °C	1.5 W
T6	40 °C	1 W

15.3.3 Luminosity

Wave length 690 nm

Radiation density of the non-focussed light ray (permanent light per LED) < 1.1 mW / mm^2

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(16) Test and assessment report

BVS PP 02.2121 EG as of 8th March 2013

(17) Special conditions for safe use

17.1 The Inspection-glass Luminary type REL01-Ex is designated for use in the following ambient temperature range – 5 °C to + 60 °C.

17.2 The Inspection-glass Luminary shall be installed in (attached to) an inspection assembly, providing as a minimum degree of protection IP 20 (IP 54 Group I) according to EN 60529 for the LED chain.

17.3 Internal wiring inside this enclosure shall comply with requirements specified in clauses 6.3.12 and 7.6e of EN 60079-11.

17.4 Installation of the Inspection-glass Luminary together with other equipment in an enclosure providing a suitable type of explosion protection shall be executed in such a way, that connection facilities of the IS circuit provide a distance through air to metallic enclosure parts of 3 mm as a minimum and to connection facilities or bare parts of non-IS circuits of other components (equipment) 50 mm as a minimum or are separated from them by means of a partition wall according to 6.3.2 of EN 60079-11.

17.5 Installation of the Inspection-glass Luminary in an enclosure providing a suitable type of explosion protection shall be assessed and certified separately.

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, 8th march 2013
BVS-Scha/Ma A 20121299

Certification body

Special services unit

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DMT

Translation

(1) # EC-Type Examination Certificate

(2) **-Directive 94/9/EG-**
Equipment and protective systems for intended use in explosion hazardous areas

(3) **DMT 02 ATEX E 234 X**

(4) **Equipment:** Sightglass Luminaire Model REL01

(5) **Manufacturer:** F.H. Papenmeier GmbH & Co. KG

(6) **Address:** D 58239 Schwerte

(7) The design and construction of this equipment as well as its permissible variations are specified in the supplement to this type examination certificate.

(8) The certification station of the Deutsche Montan Technologie GmbH, notified station no. 0158 in accordance with article 9 of the council directive 94/9/EC of the European Parliament and consultation body of 23 March 1994, certifies that the equipment complies with the essential health and safety requirements relating to the design and construction of equipment and protective systems intended for use in explosion hazardous areas in accordance with appendix II to the directive.
The examination results are recorded in test report BVS PP 02.2121 EG.

(9) The essential health and safety requirements are met by compliance with

EN 50014:1997 + A1 - A2 general regulations
EN 50020:1994 intrinsic safety "i".

(10) Where the sign "X" appears after the certificate number it indicates that the equipment is subject to special conditions for safe use in the supplement to this certificate.

(11) This EC type examination certificate relates only to the design and the type examination of the specified equipment in accordance with directive 94/9/EG. For the manufacture and marketing of the equipment, additional requirements of the directive which are not covered by this certificate, must be met.

(12) The identification marking of this equipment must include the following:
Ⓔx II 2G EEx ia IIC T4/T5/T6
IM2 EEx ia I

Deutsche Montan Technologie GmbH
Essen, dated 12. November 2002

Signed: Dr. Jockers

DMT certification station

Signed: Signature

Manager technical department

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

DMT

Translation

(13) Supplement to

(14) # EC-Type Examination Certificate

DMT 02 ATEX E 234 X

(15) 15.1 Product and Model

Sightglass luminaire model REL01

15.2 Description

Sightglass luminaire model REL01 is an intrinsically safe wired unit for the internal illumination of longitudinal sightglasses.

The sightglass luminaire comprises a trough shaped metal housing containing all its electronic components embedded in insulating resin.

Indicating elements (a row of Light Emitting Diodes) are exposed on the open surface of the resin bed.

Power supply is to the free cores of a flexible cable tail (up to 3 m long) extending from the module housing and linked to the intrinsically safe distribution circuit cast into the module's resin mass.

15.3 Nominal electrical values

15.3.1 distribution circuit

voltage	U_i	UC	30 V
current	I_i		250 mA
power	P_i		2 W
internal effective capacitance	C_i	nonessential	
internal effective inductance	L_i	nonessential	

15.3.2 Temperature class relative to ambient temperature and power

Temp. class	max. permissible ambient Temp. T_a	power P_i
T1 to T4	60° C	2 W
T5	60° C	1,5 W
T6	40° C	1 W

15.3.3 Lightsignal

Wavelength	690 mm
Illumination intensity of unfocused light beam (constant light output per LED)	<1,1 mW/mm²

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(16) Test report

BVS PP 02.2121 EG, issue date 12.11.2002

(17) Special requirements for safe use:

17.1 The sightglass luminaire model REL01 is suitable for operation in the temperature range of -5° C to + 60° C.

17.2 The sightglass luminaire must be fitted into or onto a housing which will provide a protection rating for the LED line of at least IP 20 in accordance with EN 60529.

17.3 The internal wiring standard must meet the requirements of sections 6.4.1 and 7.6e of EN 50020.

17.4 Fitting of the sightglass luminaire REL01 into or onto a housing has to be such as to ensure that an air gap of at least 3 mm is maintained between the connecting parts of the intrinsically safe circuitry and the metal housing parts and an air gap of at least 50 mm between connecting or blank parts of non intrinsically safe circuitry and other parts; or that, in the latter case, they are separated by a dividing wall in accordance with 6.3.1 of EN 50020.

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