

[1] EC-TYPE EXAMINATION CERTIFICATE

[2] Equipment or Protected System Intended for use
in Potentially explosive atmospheres
Directive 94/9/EC

- [3] EC-Type Examination Certificate Number: Nemko 03ATEX1206X
- [4] Equipment or Protective System: Gas Density Transducer
- [5] Applicant/ Manufacturer: Solartron Mobrey Ltd
- [6] Address: 158 Edinburgh Avenue
 Slough
 SL1 4UE, UK
- [7] This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- [8] Nemko AS, notified body number 0470 in accordance with Article 9 of Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system 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 confidential report no. 200315161
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
- CENELEC EN 50014: 1997 + A1: 1999 + A2: 1999
 CENELEC EN 50020: 2002
 CENELEC EN 50284: 1999
- [10] If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system 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 or protective system in accordance to the directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.
- [12] The marking of the equipment or protective system shall include the following:



II 1 G

EEx ia IIC T5 Ta:70°C

Oslo, 2003-08-13



Rolf Hoel
Certification Department

This certificate may only be reproduced in its entirety and without any change, schedule included.

Postal address:
P.O.Box 73 Blindern
N-0314 OSLO, NORWAY

Office address:
Gaustadalléen 30
0373 OSLO

Telephone:
+47 22 96 03 30
Fax:
+47 22 96 05 50

Enterprise number:
NO 974404532

[13] Schedule**[14] EC-TYPE EXAMINATION CERTIFICATE No Nemko 03ATEX1206X****[15] Description of Equipment or Protective System**

Solartron Mobrey type 7812 Gas Density Transducer for measurement of density in gases. The density of the gas is determined by measuring the frequency of a vibrating cylinder in contact with the gas. An amplifier, magnetically coupled to the sensing element maintains the conditions of vibration and also provides the output signal. The measurement is based on a resonating cylinder. The circuits of the sensing element, amplifier and output circuits are encapsulated in casting compound. The enclosure of instrument made of aluminium or stainless steel and the process contact interface of stainless steel.

Type and Model Codes.

7812 abcdef Model type Gas Density Transducer

The letters **abcdef** denote the following characteristics:

- a:** 1 to 9 Calibration range
- b:** A to Z Material options
- c:** A Electronics
- d:** A to Z Amplifier enclosure
- e:** A Approval ATEX ia
- f:** ****: Product configuration options.

Safety Data**Transducer Terminals 1, 2, 3, 4**

Maximum input voltage.	U _i :	28V
Maximum input current.	I _i :	93mA
Maximum input power.	P _i :	0,65W
Maximum internal capacitance.	C _i :	33nF
Maximum internal inductance.	L _i :	0,73mH

The voltage, current and power values are the total available to all four connections.

PRT terminals 5, 6, 7, 8

Maximum input voltage.	U _i :	15V
Maximum input current.	I _i :	150mA
Maximum input power.	P _i :	0,5W
Maximum internal capacitance.	C _i :	50nF
Maximum internal inductance.	L _i :	0,73mH

The voltage, current and power values are the total available to all four connections.

Range of Ambient Temperature

T_a: -40°C to +70 °C

This certificate may only be reproduced in its entirety and without any change, schedule included.

Postal address:
P.O.Box 73 Blindern
N-0314 OSLO, NORWAY

Office address:
Gaustadalléen 30
0373 OSLO

Telephone:
+47 22 96 03 30
Fax:
+47 22 96 05 50

Enterprise number:
NO 974404532

[16] Report No. 200315161 and the listed descriptive documents**Descriptive Documents**

Name/Number	Rev.	Date	Title/Description	Sheets
78125037	3	2003-08-05	Certification marking	1
78125003	9	2003-07-16	Certification Drawing Gas Density Transducer	2
78125035	3	2003-07-14	Certification Drawing PCB Circuits	1
78125036	2	2003-07-14	Certification Drawing 7812 BD 1 & 4	1

[17] Special Conditions for Safe Use

For enclosures of the transducers made of aluminium impact and friction hazards shall be considered when the transducer is used in category II 1 G environment according to EN 50284 clause 4.3.1.

[18] Essential Health and Safety Requirements

See item 9

This certificate may only be reproduced in its entirety and without any change, schedule included.

Postal address:
P.O.Box 73 Blindern
N-0314 OSLO, NORWAY

Office address:
Gaustadalléen 30
0373 OSLO

Telephone:
+47 22 96 03 30
Fax:
+47 22 96 05 50

Enterprise number:
NO 974404532

Supplement 1 to EC-TYPE EXAMINATION CERTIFICATE

- [14] **EC-TYPE EXAMINATION CERTIFICATE No** **Nemko 03ATEX1206X**
[15] **Description of Equipment or Protective System**

The certificate is extended to apply to the Solartron Mobrey type 3098 Gas Specific Gravity Transducer and a minor modification of the 7812 Gas Density Transducer. The modification does not change the characteristic safety parameters as described in the schedule to the certificate.

The 3098 Specific Gravity transducer consists of a 7812 vibrating cylinder gas density transducer surrounded by a gas reference chamber. The density of the gas is measured under controlled conditions and thus the specific gravity of the gas can be obtained. The 3098 is supplied with or without an external enclosure.

Type and Model Codes.

3098 abcde Model type Gas Specific Gravity Transducer

The letters **abcde** denote the following characteristics:

a: E, F, G: E=Small Insulating Enclosure. F=Without Enclosure, G= Large Insulating Enclosure

bcd: Customer specific requirements

Technical Data

Intrinsic safety: The safety parameters for the intrinsic safety are the same as listed in the Schedule to this certificate

Process gas: Dry, clean non-corrosive gases.

Maximum operation pressure: 7bar

Range of Ambient Temperature: Ta: -40°C to +70 °C

- [16] **Report No. 13966 and the listed descriptive documents**

Descriptive Documents

Number	Issue.	Date	Title/Description
30985014	2	2003-11-27	Specific Gravity Meter Assembly
30985015	1	2002-09-16	Letdown Panel With 3098 and Panel Vent
30985016	2	2003-11-27	3098 Enclosure
30985017	2	2003-11-27	Certification marking 3098
78125035	4	2003-11-27	Certification Drawing PCB Circuits
78125036	3	2003-11-27	Certification Drawing 7812 BD 1 & 4

- [17] **Special Conditions for Safe Use**

When the 3098 is supplied without an external enclosure:

Impact and friction hazards due to the parts made of aluminium shall be considered when the 3098 Gas Specific Gravity Transducer is used in category II 1 G environment, as required according to EN 50284 clause 4.3.1 and EN 13463-1 clause 8.2. The mechanical construction of the unit has been assessed according to standard EN 13463-1: 2001

- [18] **Essential Health and Safety Requirements**

See item 9

Oslo, 2003-12-12



Rolf Hoel

Certification Department

This certificate may only be reproduced in its entirety and without any change, schedule included.

Postal address:
P.O.Box 73 Blindern
N-0314 OSLO, NORWAY

Office address:
Gaustadalléen 30
0373 OSLO

Telephone:
+47 22 96 03 30
Fax:
+47 22 96 05 50

Enterprise number:
NO 974404532

Supplement 2 to EC-TYPE EXAMINATION CERTIFICATE

[14] **EC-TYPE EXAMINATION CERTIFICATE No** **Nemko 03ATEX1206X**

[15] **Description of Equipment or Protective System**

These changes concern as follows for model 7812. The model code on the label has been changed. The ninth digit has changed from "A" to a "J". A minor change for the track on PCB 1, diodes tracks for D7 and D8 are only shortened by 5.08mm without moving their position. Creepage and clearances distances are still the same.

Type and Model Codes.

7812 abcdef Model type Gas Density Transducer

The letters **abcdef** denote the following characteristics:

- a:** 1 to 9 Calibration range
- b:** A to Z Material options
- c:** A Electronics
- d:** A to Z Amplifier enclosure
- e:** J Approval ATEX ia
- f:** ****: Product configuration options.

[16] **Report No. 24442 and the listed descriptive documents**

Descriptive Documents

Number	Issue.	Date	Title/Description
78125037	4	2004-05-13	Certification marking
78125036	4	2004-06-08	Certification Drawing 7812 BD 1 & 4

[17] **Special Conditions for Safe Use**

This information is listed in the main certificate and supplement 1.

[18] **Essential Health and Safety Requirements**

See item 9

Oslo, 2004-06-18



Rolf Hoel
Certification Department

This certificate may only be reproduced in its entirety and without any change, schedule included.

Postal address:
P.O.Box 73 Blindern
N-0314 OSLO, NORWAY

Office address:
Gaustadalléen 30
0373 OSLO

Telephone:
+47 22 96 03 30
Fax:
+47 22 96 05 50

Enterprise number:
NO 974404532

Supplement 3 to EC-TYPE EXAMINATION CERTIFICATE

This supplement 3 is issued due to change of Applicant/ Manufacturer name.

Applicant/ Manufacturer:

Mobrey Limited

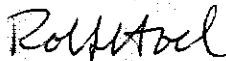
Address:

**158 Edinburgh Avenue
Slough, Berkshire
SL1 4UE, United Kingdom**

The documentation is recorded in Nemko confidential report no.

51317

Oslo, 2005-09-15



**Rolf Hoel
Certification Department**

This certificate may only be reproduced in its entirety and without any change, schedule included.

Postal address:
P.O.Box 73 Blindern
N-0314 OSLO, NORWAY

Office address:
Gaustadalléen 30
0373 OSLO

Telephone:
+47 22 96 03 30
Fax:
+47 22 96 05 50

Enterprise number:
NO 974404532