Translation

(1) EC-Type Examination Certificate

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

(3) No. of EC-Type Examination Certificate: **BVS 14 ATEX E 125 U**

(4) Component: **Moving-iron / Moving-coil voltage- / amper meter type GHG 41098 ** R ****

(5) Manufacturer: **Cooper Crouse-Hinds GmbH**

(6) Address: **Neuer Weg-Nord 49, 69412 Eberbach, Germany**

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

(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 component 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 14.2183EG.

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

EN 60079-0:2012	**General requirements**
EN 60079-7:2007	**Increased safety "e"**
EN 60079-11:2012	**Intrinsic safety "i"**
EN 60079-18:2009	**Encapsulation "m"**

(10) The sign "U" placed after the certificate number indicates that the certificate must not be mistaken for a certificate for equipment or a protective system. This certificate may only be used as the basis for the certification of equipment or a protective system.

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

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

II 2G Ex e IIC Gb
II 2G Ex e mb IIC Gb
II 2G Ex ib IIC Gb

DEKRA EXAM GmbH
Bochum, dated 2014-08-07

Signed: Dr. Eickhoff
Certification body

Signed: Dr. Wittler
Special services unit

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(13) Appendix to

(14) **EC-Type Examination Certificate**
BVS 14 ATEX E 125 U

(15) 15.1 Subject and type

Moving-iron / Moving-coil voltage- / amper meter type GHG 41098 **[1)] R ****

1) Variant

01 = VM 45 with moving-iron movement (Ex e mb)

02 = AM 45 with moving-iron movement (Ex e / Ex e mb)

08 = VM 72 with moving-iron movement (Ex e mb)

09 = AM 72 with moving-iron movement Ex e / Ex e mb)

20 = AM 45 with moving-coil movement (Ex ib)

21 = AM 72 with moving-coil movement (Ex ib)

15.2 Description

The Moving-iron / Moving-coil voltage- / ampere meter type GHG 41098 ** R **** is used for the monitoring of current and voltage values. The voltage- / ampere meter can build in three variations.

1) Moving-iron voltage- / ampere meter in type of protection "e" increase safety
2) Moving-iron voltage- / ampere meter in type of protection "e" increase safety with coil and possibly series resistance on a multi-layer board in type of protection "mb" – encapsulation.
3) Moving-coil ampere meter in in type of protection "i" intrinsic safety

The voltage- / ampere meter must be installed in a separately certified enclosure according EN/IEC 60079-ff (type of protection increased safety "e" EN/IEC 6007-7 will be preferred).

15.3 Parameters

15.3.1 Moving-iron ampere meters and voltage meters			
Ampere meter type GHG 41098 02 R ** (AM45)**			
Operating voltage ≤ 250 V			
Nominal current	Measuring range	Power consumption	Limits of service temperature
0.02 A	0 ... 0.02 A	0.130 W	-55 °C ... +80 °C
0.04 A	0 ... 0.04 A	0.130 W	-55 °C ... +80 °C
1.0 A	0 ... 1.0 A	0.135 W	-55 °C ... +80 °C
5.0 A	0 ... 5.0 A	0.129 W	-55 °C ... +80 °C
1.0 A	0 ... 1.0 A	0.135 W	-55 °C ... +80 °C
2.5 A	0 ... 2.5 A	0.133 W	-55 °C ... +80 °C
5.0 A	0 ... 5.0 A	0.129 W	-55 °C ... +80 °C
10.0 A	0 ... 10.0 A	0.150 W	-55 °C ... +80 °C
16.0 A	0 ... 16.0 A	0.210 W	-55 °C ... +80 °C

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Ampere meter type GHG 41098 09 R **** (AM72)			
Operating voltage ≤ 500 V			
Nominal current	Measuring range	power consumption	Limits of service temperature
0.02 A	0 ... 0.02 A	0.130 W	-55 °C ... +80 °C
0.24 A	0.04 ... 0.24 A	0.130 W	-55 °C ... +80 °C
1.0 A	0 ... 1.0 A	0.135 W	-55 °C ... +80 °C
5.0 A	0 ... 5.0 A	0.129 W	-55 °C ... +80 °C
1.0 A	0 ... 1.0 A	0.135 W	-55 °C ... +80 °C
2.5 A	0 ... 2.5 A	0.133 W	-55 °C ... +80 °C
5.0 A	0 ... 5.0 A	0.129 W	-55 °C ... +80 °C
10.0 A	0 ... 10.0 A	0.150 W	-55 °C ... +80 °C
16.0 A	0 ... 16.0 A	0.210 W	-55 °C ... +80 °C
20.0 A	0 ... 20.0 A	0.320 W	-55 °C ... +80 °C
25.0 A	0 ... 25.0 A	0.313 W	-55 °C ... +80 °C
Voltage meter type GHG 41098 01 R ** (VM45)**			
Operating voltage ≤ 250 V			
Nominal current	Measuring range	power consumption	Limits of service temperature
150 mA	0 ... 6 V	0.23 VA	-55 °C ... +80 °C
92.6 mA	0 ... 10 V	0.22 VA	-55 °C ... +80 °C
56.80 mA	0 ... 15 V	0.27 VA	-55 °C ... +80 °C
34.50 mA	0 ... 25 V	0.19 VA	-55 °C ... +80 °C
24.50 mA	0 ... 40 V	0.35 VA	-55 °C ... +80 °C
13.88 mA	0 ... 60 V	0.37 VA	-55 °C ... +80 °C
8.95 mA	0 ... 100 V	0.35 VA	-55 °C ... +80 °C
8.75 mA	0 ... 110 V	0.33 VA	-55 °C ... +80 °C
7.91 mA	0 ... 150 V	0.33 VA	-55 °C ... +80 °C
3.92 mA	0 ... 250 V	0.36 VA	-55 °C ... +80 °C

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Voltage meter type GHG 41098 08 R **** (VM72)			
Operating voltage ≤ 250 V			
Nominal current	Measuring range	power consumption	Limits of service temperature
150 mA	0 ... 6 V	0.23 VA	-55 °C ... +80 °C
92.6 mA	0 ... 10 V	0.22 VA	-55 °C ... +80 °C
56.80 mA	0 ... 15 V	0.27 VA	-55 °C ... +80 °C
34.50 mA	0 ... 25 V	0.19 VA	-55 °C ... +80 °C
24.50 mA	0 ... 40 V	0.35 VA	-55 °C ... +80 °C
13.88 mA	0 ... 60 V	0.37 VA	-55 °C ... +80 °C
8.95 mA	0 ... 100 V	0.35 VA	-55 °C ... +80 °C
8.75 mA	0 ... 110 V	0.33 VA	-55 °C ... +80 °C
7.91 mA	0 ... 150 V	0.33 VA	-55 °C ... +80 °C
3.92 mA	0 ... 250 V	0.36 VA	-55 °C ... +80 °C
4.08 mA	0 ... 400 V	0.42 VA	-55 °C ... +80 °C
4.23 mA	0 ... 415 V	0.45 VA	-55 °C ... +80 °C
3.99 mA	0 ... 500 V	0.35 VA	-55 °C ... +80 °C

15.3.2 Moving-coil ampere meter

Ampere meter type GHG 41098 2* R **** (AM45 / AM72)			
Operating voltage ≤ 30 V			
R_i = 2.5 Ω ± 30 % / L_i = ≤ 0.1 mH / C_i = < 0.1 nF			
Nominal current	Measuring range	power consumption	Limits of service temperature
0.006 A	0 ... 20 mA	1.45 mW	-55 °C ... +80 °C
0.006 A	4 ... 24 mA	1.45 mW	-55 °C ... +80 °C

(16) Test and Assessment Report

BVS PP 14.2183 EG as of 2014-08-07

(17) Installation instructions

17.1 The Moving-iron / Moving-coil voltage- / ampere meter type GHG 41098 ** R **** must be installed in a separately certified enclosure.

17.2 If the enclosure is in type of protection "e" increase safety the creepage and clearance distance must be fulfil EN/IEC 60079-7.

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, 2014-08-07
BVS-Yil/Ma A20131120

Certification body

Special services unit

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