



Nederlands Meetinstituut

EC-type examination certificate

Number **T10133** revision 0
Project number 802896
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Issued by NMI Certin B.V.
Hugo de Grootplein 1
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The Netherlands

Notified Body number 0122

In accordance with The "Metrologiewet" (Stb. 2006, 137) as Dutch implementation of Directive 2004/22/EC on measuring instruments (MID).

Manufacturer Brainbee S.p.A.
Via Quasimodo 4/a
43100 Parma
Italy

In respect of A model of an **Exhaust Gas Analyser**.
Manufacturer's mark or name : Brainbee or GlobalPro
Type : AGS-688 or EGA-688

Characteristics Accuracy class 0
Electromagnetic environment class E2
Mechanical environment class M1
Temperature range +5 °C / +40 °C (non-condensing)

In the description number T10133 revision 0 further characteristics are described.

Valid until 21 May 2018

Description and documentation The instrument is described in the description number T10133 revision 0 and documented in the documentation folder T10133-1, appertaining to this EC-type examination certificate.

Dordrecht, 21 May 2008
NMI Certin B.V.

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1 General information about the exhaust gas analyser

All properties of the exhaust gas analyser, whether mentioned or not, may not be in conflict with the legislation.

1.1 Essential parts

Description	Drawing number	Rev.	Remarks
Block diagram	1.9.1 Electronic structure	--	
Pneumatic scheme	1.7.1 Pneumatic scheme	--	
AGS-688 Main board Parts list main board	EA1093-01-1 EC1093-01-3	-- --	Component layout Parts list, 5 pages
Block diagram Sensors AMB II	T10133-001	--	
Main board Sensors AMB II Parts list Sensors AMB II	9211-050 9211-050-PCB 360 MCU	-- --	Component layout Parts list, 3 pages

Configurations:

- Configuration 1:
 - Primary indication on the AGS-688/EGA-688. Software is type P according to guide WELMEC 7.2. A universal computer may be connected, running non-legally relevant software.
- Configuration 2:
 - Primary indication on an universal computer, complying with electromagnetic immunity class E2 according to the Directive 89/332/EEC (EMC Directive). Software on universal computer is type U according to guide WELMEC 7.2. Communication between AGS-688/EGA-688 and the universal computer through serial cable or Bluetooth. The AGS-688/EGA-688 may repeat the primary indications.

Oxygen sensor		
Manufacturer	Type	Remarks
City Technology Ltd.	AO2 CiTicel	
Envitec-Wismar GmbH	Oxiplus A, 00A 101	
Teledyne Analytical instruments	R-21A & R-22A	

EMC protective measures:

- AGS-688 / EGA-688:
 - The Sensors AMB II gasbench is shielded with a metal cover;
 - The top and both sides of the exhaust gas analyzer are shielded with an extra metal cover;
 - Ferrite ring around all incoming and outgoing cables (1 turn);
 - Ferrite ring around the cable from main board to the oxygen sensor (2 turns);
 - Ferrite ring around the cable from main board to the pressure sensor (1 turn);
 - Ferrite ring around the cable from main board to the printer (2 turns);
 - Ferrite ring around the cable from main board to the Sensors AMB II gasbench (1 turn);
- Power supplies PSI-40, PSI-50/51, PSI-60 and PSI-70/71:
 - Ferrite ring around all incoming and outgoing cables (1 turn).

1.2 Essential characteristics

Measuring ranges:

Gas component	Display range	Resolution
CO	0 – 9.99 % vol	0.01 % vol
CO ₂	0 – 19.9 % vol	0.1 % vol
O ₂	0 – 25.00 % vol	0.01 % vol
HC	0 – 9999 ppm vol	1 ppm vol

Software identification and specification (refer to WELMEC guide 7.2):

- Configuration 1:
 - Software type P;
 - Risk Class B;
 - Extensions S, D.

Name	Version number	Checksum	Display
AGS-688/EGA-688	1.300	EB5D	during start-up

- Configuration 2:
 - Software type U;
 - Risk Class C;
 - Extensions T, S.

Name	Version number	Checksum	Display
AGSMID.EXE	1.04	CE5E	in main menu
AGSCOM.DLL	1.01	31CD	in main menu
AGS-688/EGA-688	1.300	EB5D	during start-up

- Adjustment period, 12 months.

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- Functions:
 - Lambda calculation;
 - PEF value in display;
 - (Semi) automatic zero setting;
 - Automatic adjustment device;
 - Drift compensation;
 - Low flow signalling.

- Protections:
 - Warm-up check;
 - Control of automatic devices;
 - Detection of HC residue;
 - Leak-test;
 - Control of O₂ channel;
 - Detection of adjustments that are necessary;
 - Software sealing for gas adjustment (adjustment date, which can be recalled in the set-up menu).

- Parameters:
 - Warm-up time : max. 10 min
 - Temperature range : +5 °C / +40 °C
 - Minimal flow : 2.5 l/min

- Power supply:
 - Measuring unit AGS or EGA : 12 VDC by PSI-40 3P2J, PSI-50/51, PSI-60, PSI-70/71
 - PSI-40 3P2J, PSI-50/51, PSI-60, PSI-70/71 : 230 VAC, 50/60 Hz

1.3 Essential shapes

The exhaust gas analyser is built according to the drawings:

- Front view AGS-688 / EGA-688, drawing number 5.2 Front view;
- Rear view AGS-688 / EGA-688, drawing number 5.3 Rear view.

Markings:

- The markings have to fulfil the requirements stated in the legislation.
- The data plate is fixed to the exhaust gas analyser and secured against removal by sealing or will be destroyed when removed.
- Near the display the inscriptions belonging to the function as exhaust gas analyser must be present.

To secure components that may not be dismantled or adjusted by the user, the exhaust gas analyser has to be secured in a suitable manner on the locations indicated in the drawing:

- Sealing AGS-688 / EGA-688, drawing number 5.4 Sealing.

The securing component has to bear either:

- A mark of the manufacturer laid down in an approved quality system by a Notified Body, or;
- A mark of a Notified Body.

1.4 Conditional parts

Description	Drawing number	Rev.	Remarks
Power supply board (PSI-40)	P40A series	--	P40A 3P2J
Power supply board (PSI-50/51, PSI-60)	EP1075-2 EA1075-01-2	-- --	Component layout Parts list, 1 page
Power supply board (PSI-70/71)	PSI-70-MB1 PSI-70-MB2	-- --	Component layout Parts list, 1 page

- User manual;
- Pump, manufacturer Gardner Denver Thomas, type 1422 VC;
- Filters, manufacturer Finite Filter Parker, type 0G10-20;
- Gas probe, see drawing number Probe-005.

The exhaust gas analyser may be equipped with one or more of the following protective interfaces that have not to be secured:

- RS232;
- RS485;
- USB.

1.5 Conditional shapes

Description	Drawing number	Rev.	Remarks
PSI-40 power supply unit	P40A series	--	P40A 3P2J
PSI-50/51/60 power supply unit	PSI-50-009	--	
PSI-70/71 power supply unit	PSI-70-010	--	

1.6 Non-essential parts

- Keyboard;
- Integrated revolution counter based on induction clamp;
- Integrated oil temperature meter;
- NO_x sensor.

The exhaust gas analyser may be connected to non-essential devices, for example but not limited to external printers, second display's, etc. provided that:

- They do not present primary data;
- They do not lead to an instrument having other essential characteristics than those fixed by this type-examination document.

2 Approval conditions, seals and verification marks

See chapter 1.2, essential characteristics and 1.3, essential shapes.