EC type-examination certificate

Number **T10468** revision 0
Project number SO12200099

Issued by	NMi Certin B.V. Hugo de Grootplein 1 3314 EG Dordrecht The Netherlands
In accordance with	The Metrologiewet (Stb. 2006, 137) as Dutch implementation of Directive 2004/22/EC on measuring instruments (MID).
Manufacturer	Rocar-Tech Garage Equipment B.V. Granaatstraat 55 7554 TN Hengelo The Netherlands
In respect of	A model of an **Exhaust Gas Analyzer**. Type : 810
Characteristics	Accuracy class 0 Electromagnetic environment class E1 Temperature range +5 °C / +40 °C In the description number T10468 revision 0 further characteristics are described.
Valid until	3 May 2022
Description and documentation	The instrument is described in the description number T10468 revision 0 and documented in the documentation folder T10468-1, appertaining to this EC-type examination certificate.

The Notified Body no. 0122
NMi Certin, 3 May 2012

C. Oosterman
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Description

1 General information about the exhaust gas analyzer

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

1.1 Essential parts

Description	Drawing number	Remark
Block diagram of 810 gas Analyzer	10468/0-01	
Layout of control Circuit Board	10468/0-02	Drawing Parts list (1 page)
Layout of Microbench II	10468/0-03	Drawing Parts list (4 pages)

Oxygen sensor		
Manufacturer	Type	Remark
Tecnomotor	1.61.0205	-

EMC protection measures:
- Power supply filter, Omega, type POLYSNAP BZ01110;
- Ferrite core around the temperature cable, 1 turn;
- Ferrite core around the RPM-counter cable, 1 turn.

1.2 Essential characteristics

Measuring ranges:

Gas component	Display range		Resolution	
CO	0 – 10,0	% vol	0,01	% vol
CO_2	0 – 20,0	% vol	0,1	% vol
HC	0 – 10 000	ppm vol	1	ppm vol
O_2	0 – 21	% vol	0,01	% vol

The primary indication is on the 810. The firmware is according to guide WELMEC 7.2:
- Software type P;
- Risk Class C;
- No extensions are applicable.

The firmware is built according drawing:
- "Block diagram of the firmware", drawing number 10468/0-04.

Firmware specification			
Firmware item	Version number	Checksum	Indication
Gas bench firmware	5.129	-	during start-up
Gas analyser firmware (English)	2.2	1852	during start-up
Gas analyser firmware (French)	2.2	23280	during start-up
Gas analyser firmware (Greek)	2.2	1879	during start-up
Gas analyser firmware (Italian)	2.2	115	during start-up
Gas analyser firmware (Polish)	2.2	11900	during start-up
Gas analyser firmware (Portugese)	2.2	312	during start-up
Gas analyser firmware (Romanian)	2.2	1135	during start-up
Gas analyser firmware (Spanish)	2.2	671	during start-up
Gas analyser firmware (Svedish)	2.2	6041	during start-up
Gas analyser firmware (Turkish)	2.2	65470	during start-up

- Calibration period, 12 months.

- Functions:
  - Lambda calculation;
  - PEF in display;
  - (Semi-) automatic zero setting;
  - Drift compensation;
  - Low flow signaling.

- Protections:
  - Warm-up check;
  - Checking facilities for correct functioning;
  - Detection of HC residue;
  - Leak-test;
  - Control of O_2 channel;
  - Detection of adjustments that are necessary;
  - Signaling for ending of the calibration period;
  - Hardware sealing for the gascalibration.

- Parameters:
  - Warm-up time : < 10 min
  - Temperature range : +5 °C / +40 °C
  - Minimal flow : 1,5 l/min

- Power supply voltage 230 V AC, 50 Hz.

1.3 Essential shapes

The exhaust gas analyzer is built according to the drawings:
- "Front view of the 810-830 Gas Analyzer", drawing number 10468/0-05;
- "Rear view of the 810-830 Gas Analyzer", drawing number 10468/0-06.

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

To secure components that may not be dismantled or adjusted by the user, the exhaust gas analyzer has to be secured in a suitable manner on the locations indicated in the drawing:
- "Security seal applied to gas tester", drawing number 10468/0-07.

1.4 Conditional parts

- User manual exhaust gas analyzer "Gas Analyzer 810-830 Operating manual, Revision 0.2", 52 pages;
- Pump, KNF, type PL3041A –NFT30;
- Valve, ASCO, type SCG356A001V;
- Gas anti-condensate filtering system, StampoTecnica, type 042.10.00039;
- Carbon Filters, FTI srl, type DIAN01;
- Power supply, Meanwell, type S150-13.5;
- Gas Probe, Tecnomotor.

The exhaust gas analyzer may be equipped with one or more of the following protective interfaces that have not to be secured:
- PS/2;
- USB;
- RS232.

1.5 Non-essential parts

- Optional NO_x sensor;
- Revolutions counter;
- Oil temperature meter.

The exhaust gas analyzer 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.