Ministerstvo dopravy České republiky
Ministry of Transport of the Czech Republic
Nábřeží L.Svobody 12, 110 15 Praha 1, Czech Republic

E8

OSVĚDČENÍ **o:**

UDĚLENÍ HOMOLOGACE
~~ROZŠÍŘENÍ HOMOLOGACE~~
~~ODEJMUTÍ HOMOLOGACE~~
~~UKONČENÍ VÝROBY~~

COMMUNICATION **concerning:**

APPROVAL GRANTED
~~APPROVAL EXTENDED~~
~~APPROVAL WITHDRAWN~~
~~PRODUCTION DEFINITELY DISCONTINUED~~

typu vybavení LPG podle Předpisu č. 67.01
of a type of LPG equipment pursuant to Regulation No. 67.01

Homologace č.: / Approval No.: **67 R – 01 5440**

Rozšíření č.: – / Extension No.: **N/A**

1. Uvažované vybavení LPG:
LPG equipment considered:

~~Nádrž / Container~~
~~Příslušenství připojené k nádrži / Accessories fitted to the container:~~
~~80% uzavírací ventil / 80 per cent stop valve~~
~~stavoznak / level indicator~~
~~přetlakový ventil (odpoušt. ventil) / pressure relief valve (discharge valve)~~
~~přetlakové zařízení / pressure relief device~~
~~dálkově řízený provozní ventil s přepadovým ventilem~~
~~remotely controlled service valve with excess flow valve~~
~~s/bez palivového čerpadla LPG / with/without LPG fuel pump~~
~~víceúčelový ventil, zahrnující následující příslušenství~~
~~multivalve, including the following accessories~~
~~plynotěsná skříňka / gas-tight housing~~
~~elektrická průchodka (čerpadlo/ovladače)~~
~~power supply bushing (pump/actuators)~~
~~Palivové čerpadlo / Fuel pump~~
~~Odpařovač/regulátor tlaku / Vaporizer/pressure regulator~~
~~Uzavírací ventil / Shut-off valve~~
~~Zpětný ventil / Non-return valve~~
~~Přetlakový ventil plynového potrubí / Gas-tube pressure relief valve~~
~~Servisní spojka / Service coupling~~
~~Ohebná hadice / Flexible hose~~
~~Vnější plnicí jednotka / Remote filling unit~~
~~Zařízení pro vstřik plynu nebo vstřikovač / Gas injection device or injector~~
~~Palivová lišta / Fuel rail~~
~~Dávkovací jednotka plynu / Gas dosage unit~~
~~Směšovač plynu / Gas mixing piece~~
Elektronická řídící jednotka / Electronic control unit
~~Tlakový snímač / Pressure sensor~~
~~Filtrační jednotka LPG / LPG filter unit~~

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2. Obchodní název nebo značka:
Trade name or mark:

FOBOS

Centrální jednotka typ:
Central unit of type: **FOBOS 2**

3. Název a adresa výrobce:
Manufacturer's name and address:

FOBOS AUTO LTD
1. Bulgarska Aviatzia
5800 Pleven
Bulgaria

4. Název a adresa zástupce výrobce (pokud jsou potřebné):
If applicable, name and address of manufacturer's representative:

–
N/A

5. Předloženo k homologaci dne:
Submitted for approval on:

21 October 2009

6. Homologační zkušebna:
Technical service responsible for conducting approval tests:

E8/C: TÜV SÜD Auto CZ s.r.o.
Novodvorská 994/138
142 21 Praha 4, Czech Republic

7. Datum protokolu, vydaného touto zkušebnou:
Date of report issued by that service:

3 November 2009

8. Číslo protokolu, vydaného touto zkušebnou:
Number of report issued by that service:

120909 – 09 – TAC

9. **HOMOLOGACE UDĚLENA** ~~/ ODMÍTNUTA / ROZŠÍŘENA / ODEJMUTA~~
APPROVAL IS GRANTED ~~/ REFUSED / EXTENDED / WITHDRAWN~~

10. Důvod(y) pro rozšíření homologace:
Reason(s) for extension:

–
N/A

11. Místo:
Place:

Praha

12. Datum:
Date:

4 November 2009

13. Podpis:
Signature:

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14. Homologační dokumentace je uložena u homologačního orgánu a lze ji obdržet na vyžádání.
The information package lodged with the approval authority may be obtained on request.

Technical Report No.:	120909 – 09 – TAC
ECE Regulation No.:	R67.01
Manufacturer:	FOBOS AUTO LTD 1. Bulgarska Aviatsia 5800 Pleven Bulgaria
Type:	Electronic control unit type: Fobos 2

TECHNICAL REPORT
No. 120909 – 09 – TAC

Test according to ECE Regulation No. 67.01

Uniform provisions concerning the approval of:

I. Approval of specific equipment of motor vehicles using liquefied petroleum gases in their propulsion system

II. Approval of a vehicle fitted with specific equipment for the use of liquefied petroleum gases in its propulsion system with regard to the installation of such equipment

ECE No. 67.00 – date of entry into force: 1 June 1987
including all amendments up to and including
ECE No. 67.01, Supplement 8 – date of entry into force: 3 February 2008

Objectives: Document for issue of approval

Ministry of Transport UN/ECE Approval Authority E 8 Type approvals of wheeled vehicles equipment and parts C Czech Republic

I. Technical data

0.1.	Make (trade name of manufacturer):	FOBOS
0.2.	Type:	Fobos 2
0.3.	Means of identification of type:	By letters and digits
0.3.1.	Location of that marking:	On the label on the cover of ECU
0.4.	Class of component:	Not applicable
0.5.	Name and address of manufacturer:	FOBOS AUTO LTD 1. Bulgarska Aviatsia 5800 Pleven Bulgaria
0.8.	Address of assembly plant:	See item 0.5.
0.9.	Location of the approval mark:	On the cover of ECU

II. Test report

Technical data and tests results are indicated in the enclosure of this technical report.

3. Specimen submitted to test on: 21 October 2009

4. Date of test: 21 October 2009

III. **Manufacturer's information folder** Documentation for type approval of 21 October 2009, 6 pages total

IV. **Attachments**

Technical Reports No.:
260081 – 09 – TAC: 4 pages total
260083 – 09 – TAC: 3 pages total

The results presented above were measured/found in the laboratory accredited by ČIA under No. 1107 according to the ISO/IEC 17025 standard and relate only to items tested. The final confirmation exceeds the accreditation.
Measuring and test equipment and test site meet the requirements of the applicable legislation.
This report must never be reproduced incomplete without a written permission of the testing laboratory.

V. **Final assessment**

The described sample

complies

with the requirements of ECE Regulation No. 67.01
for issue of approval certificate

This technical report consists of pages No. 1 to 2 and 7 pages of attachment.

Ministry of Transport UN/ECE Approval Authority E 9 Type approvals of wheeled vehicles equipment and parts C Czech Republic

Vladimír Perný
Officially recognized expert

Vít Dvořák
Head of Group of experts

Prague, 3 November 2009

Technical Report No.:	260081 – 09 – TAC
ECE Regulation No.:	010.02
Manufacturer:	FOBOS AUTO LTD.
Type:	Fobos 2

TECHNICAL REPORT
No. 260081 – 09 – TAC

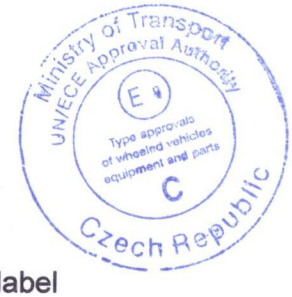
Test according to ECE Regulation No. 010.02
Uniform provisions concerning the approval of vehicles with regard to electromagnetic compatibility.

ECE No. 010.00 – date of entry into force: 1 April 1969
including all amendments up to and including
ECE No. 010.02, supplement 02 – date of entry into force: 12 August 2004

Objectives: partial document for issue of approval certificates according to ECE Regulations 67.01 and 110.00

I. Technical data

0.1.	Make (trade name of manufacturer):	FOBOS
0.2.	Type:	Fobos 2
0.2.1.	Components of the system:	CPU Fobos 2, temperature & pressure sensors, M.A.P. & level sensors, gas/petrol switch model SW2.
0.3.	Means of identification of type:	manufacturer's label
0.3.1.	Location of that marking:	top side of the housing
0.4.	Category of vehicle:	n/a
0.5.	Name and address of manufacturer:	FOBOS AUTO LTD. 1 BULGARSKA AVIATSIA 5800 PLEVEN BULGARIA
0.8.	Address of assembly plant:	see above
0.9.	Location of the approval mark:	next to the manufacturer's label



II. Test report

1. Test conditions

1.1.	Test sample:	electronic control set for the gas propulsion system designed for vehicles with 12V negative ground mains.
1.2.	Test procedures used:	tests executed according to one or more certified procedures: (1.3.) Measurement of high frequency disturbing electromagnetic fields and voltages, test of high frequency resistance and (1.4.) Tests of impulse resistance of electronic devices. Measurement of disturbing impulse overvoltage emitted into the vehicle electrical system.
1.3.	Measuring and test equipment:	radiated interference measuring set: test receiver ROHDE & SCHWARZ ESCS 30 No. 100207, log. Periodical antenna SUNOL SCIENCES JB 3 No. A012006, artificial mains ROHDE & SCHWARZ ESH3-Z6 No. 847250/015. Immunity test instrument set ROHDE & SCHWARZ: generator SMY 01 s.n. 847984/043, hf. Milivoltmeter URV 5 s.n. 848565/022 w. probe URV 5-Z2 s.n. 847922/02, wideband power amplifier BONN Elektronik BWLA 0210-25 s.n. 974436-01, injection probe FCC F-140 s.n. 192, directional coupler AR DC3001 s.n. 21970 EMC test software ROHDE & SCHWARZ EMC 32 (radiation measurement & immunity test).
1.4.	Testing conditions:	w/o precipitation, 4°C, 976hPa, 77% hum.
1.5.	Test track or site:	opened area of the TÜV SÜD Auto CZ, Novodvorská 994/138, Prague 4, Czech Republic

Ministry of Transport UN/ECE Approval Authority E 9 Type approvals of wheeled vehicles equipment and parts C Czech Republic

2. Test results

2.1. Regulation clause 6.6.: radiated emissions **≤31dBµV/m** in frequency range 20 to 1000MHz and both antenna polarizations

2.2. Regulation clause 6.7.: Functional status during immunity test **A** (no malfunctions).

3. Specimen submitted to test on: 21 October 2009

4. Date of test: 21 October 2009

III. Manufacturer's information folder

No information folder

IV. Attachments

Diagrams of applied immunity testing levels & position of the BCI probe — 1 page

The results presented above have been measured/found in the No. 1107 laboratory accredited by ČIA according to the ISO/IEC 17025 standard and relate only to the items tested. The final assessment exceeds the accreditation scope.

Measuring and test equipment and test site meet the requirements of the applicable legislation. This report must never be reproduced incomplete without a written permission of the testing laboratory.

V. Final assessment

The described sample

complies

with the requirements of ECE Regulation No. 010.02
for issue the approval certificate according to ECE Regulations Nos. 67.01 and 110.00

This technical report consists of pages No. 1 to 3 and has no attachment.

Zdeněk Hrdlička
Test executive

Vilém Kunzl
Officially recognized expert

Ministry of Transport UN/ECE Approval Authority E 9 Type approvals of wheeled vehicles equipment and parts C Czech Republic

Prague, 22 October 2009

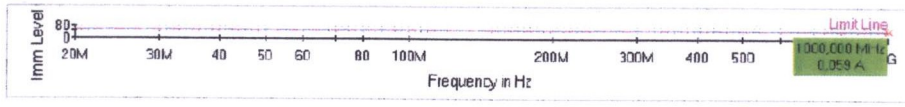
Attachment

Diagrams of applied immunity testing levels & position of the BCI probe

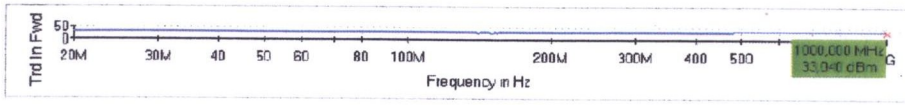
260081-09

EMC32 Report

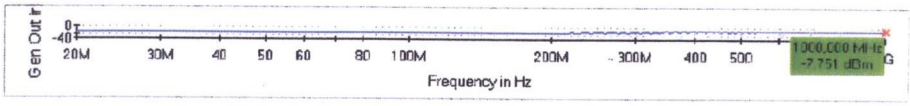
Imm Level



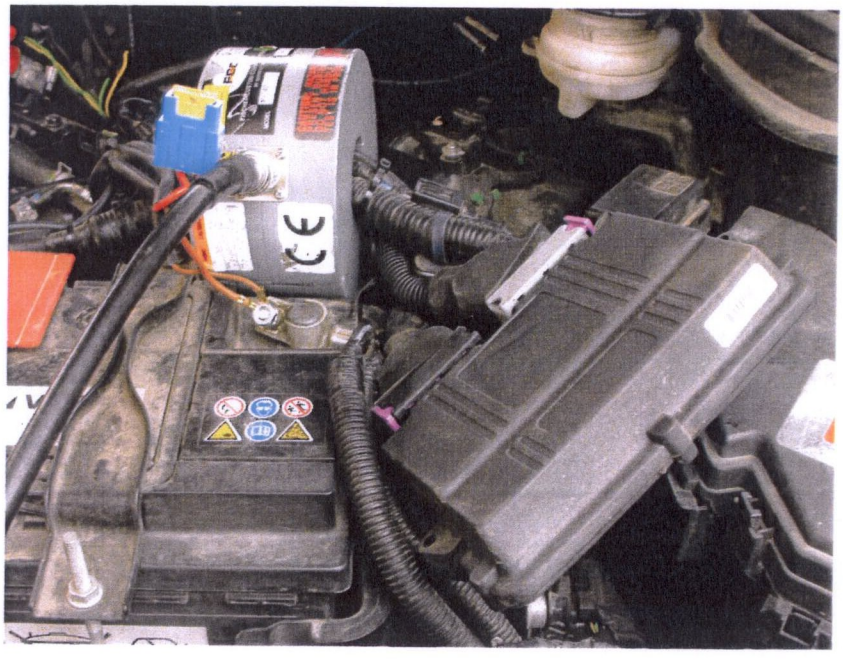
Trd In Fwd



Gen Out



EMC32



Ministry of Transport
UN/ECE Approval Authority
E 8
Type approvals of wheeled vehicles equipment and parts
C
Czech Republic

Technical Report No.:	260083 – 09 – TAC
ECE Regulation No.:	067.01
Manufacturer:	FOBOS AUTO LTD.
Type:	Fobos 2

TECHNICAL REPORT
No. 260083 – 09 – TAC

Test according to ECE Regulation No. 067.01

Uniform provisions concerning:

I. Approval of specific equipment of motor vehicles using liquefied petroleum gases in their propulsion system,

II. Approval of a vehicle fitted with specific equipment for the use of liquefied petroleum gases in their propulsion system with regard to the installation of such equipment.

ECE No. 067.00 – date of entry into force: 1 June 1987
including all amendments up to and including
ECE No. 067.01, Supplement 07 – date of entry into force: 2 February 2007

Objectives: document for issue of approval certificate.

I. Technical data

0.1.	Make (trade name of manufacturer):	FOBOS
0.2.	Type:	Fobos 2
0.2.1.	Components of the system:	CPU Fobos 2, temperature & pressure sensors, M.A.P. & level sensors, gas/petrol switch model SW2.
0.3.	Means of identification of type:	manufacturer's label
0.3.1.	Location of that marking:	top side of the housing
0.4.	Category of vehicle:	n/a
0.5.	Name and address of manufacturer:	FOBOS AUTO LTD. 1 BULGARSKA AVIATSIA 5800 PLEVEN BULGARIA
0.8.	Address of assembly plant:	see above
0.9.	Location of the approval mark:	next to the manufacturer's label

Ministry of Transport UN/ECE Approval Authority E 8 Type approvals of wheeled vehicles equipment and parts C Czech Republic

II. Test report

1. Test conditions

1.1.	Test sample:	electronic control set for the LPG propulsion system designed for vehicles with 12V negative ground mains.
1.2.	Test procedures used	tests executed according to one or more certified procedures: Measurement of high frequency disturbing electromagnetic fields and voltages, test of high frequency resistance and Tests of impulse resistance of electronic devices. Measurement of disturbing impulse overvoltage emitted into the vehicle electrical system.
1.3.	Measuring and test equipment:	scopemeter FLUKE199C s.n. DM 8140090.
1.4.	Testing conditions:	w/o precipitation, 4°C, 976hPa, 77% hum.
1.5.	Test track or site:	opened area of the TÜV SÜD Auto CZ, Novodvorská 994/138, Prague 4, Czech Republic

2. Test results

2.1.	*(Ad Annex 14, clause 2):*	Switching off delay of the service cut-off valves after stalling of the engine **<5s**
2.2.	*(Ad Annex 14, clause 3):*	For EMC test of the electronic control unit see our Test Report No. **260081 – 09 – TAC**
2.3.	*(Ad Annex 14, clause 4):*	During simulation of the electrical failure.all valves remain closed
2.4.	*(Ad Annex 14, clause 5):*	All outputs remain inactive during power switch-off
3.	Specimen submitted to test on:	21 October 2009
4.	Date of test:	21 October 2009

Ministry of Transport UN/ECE Approval Authority E 8 Type approvals of wheeled vehicles equipment and parts C Czech Republic

III. Manufacturer's information folder

Application for approval for the electronic control unit Fobos 2 pursuant to ECE Regulation No. 67.

6 pages total of 21 October 2009

IV. Attachments

No attachments

The results presented above have been measured/found in the No. 1107 laboratory accredited by ČIA according to the ISO/IEC 17025 standard and relate only to the items tested. The final assessment exceeds the accreditation scope.

Measuring and test equipment and test site meet the requirements of the applicable legislation. This report must never be reproduced incomplete without a written permission of the testing laboratory.

V. Final assessment

The described sample

complies

with the requirements of ECE Regulation No. 067.01
for issue of approval certificate.

This technical report consists of pages No. 1 to 3 and has no attachments.

Zdeněk Hrdlička
Test executive

Vilém Kunzl
Officially recognized expert

Prague, 22 October 2009

Ministry of Transport UN/ECE Approval Authority E 9 Type approvals of wheeled vehicles equipment and parts C Czech Republic