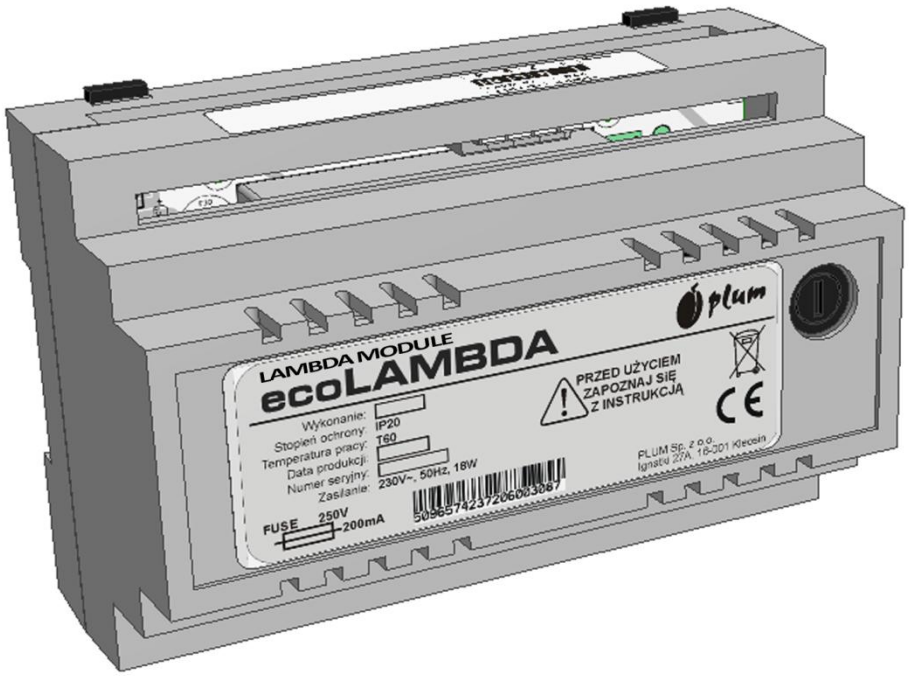
Lambda module
ecoLAMBDA

FOR PELLET BOILERS AND FIREPLACES



QUALITY INTERNATIONAL FORUM JAKOŚCI 2008 ISO 9001 ISO 14001 OHSAS 18001

CE RoHS COMPLIANT

SERVICE AND ASSEMBLY MANUAL

Version: 5.0

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1. SAFETY

The module can only be used within the household and similar

The module should be installed by a trained and qualified technician, according to the requirements of EN 60335-1.

2. GENERAL INFORMATION

ecoLAMBDA module is modern electronic device for measuring the oxygen content in the exhaust gas. The results of measurements of the module are sent ecoLAMBDA digital communication interface RS-485 module to work with regulators, whose job is to maintain the oxygen content and temperature of the gas at the required level by controlling the inflow of fluid.

An example of an application module ecoLAMBDA shown below

Detailed operating instructions and the function performed by the module is described in the specific instructions of the devices to which it is applying the module.

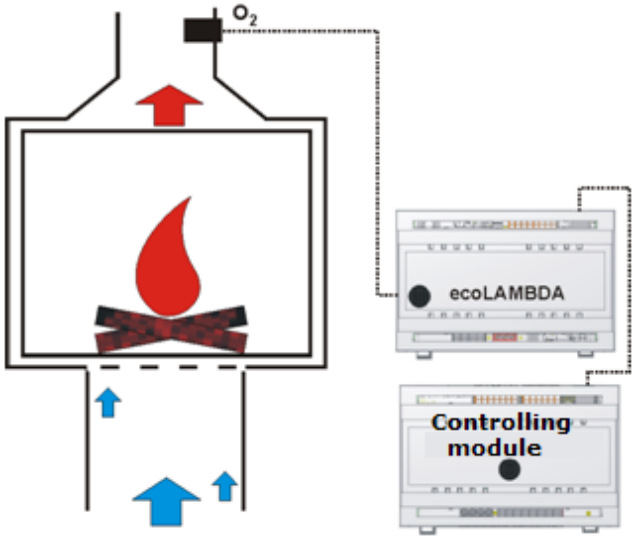

Fig. 2.1 Example connection of ecoLAMBDA

3. WEEE DIRECTIVE 2002/96/EC

Your product is made of high quality materials that are recyclable and can be reused.

If the product is marked with this symbol of

the crossed out wheeled bin, it means that the product meets the requirements of the 2002/96/EC of the European

We recommend that you familiarize yourself with the local separate collection system for electrical and electronic products.

Please act according to your local rules and do not dispose of your old products with your normal household waste. The correct disposal of your old product will help prevent potential negative consequences for the environment and human health.

4. SPECIFICATIONS

Measuring parameters	measuring range: 0 .21% O_2, an accuracy of ± 1% O_2 *
Data transmission	RS485
Power	230V AC, P = 18W, 50Hz
Load carrying capacity terminals 3.4	max 2A
Operating Conditions	0 ° ≤ Ta ≤ 60 ° C, 10-90% relative humidity, non-condensing
Enclosure	IP 20
Nominal new surge voltage	2500V ~
Weight Module	0.6 kg
Dimensions WxHxL	(Figure 6.1)

** Accuracy refers to the same input of the module and does not include the accuracy of the probe connected*

INSTALLATION INSTRUCTIONS
ecoLAMBDA

5. SET

- Module ecoLAMBDA. item 1
- Oxygen Sensor item 1
- Installation and Use item 1
- Connection cable RS485 item 1

6. INSTALLATION OF ecoLAMBDA

Due to the risk of shock, the module is designed for use in environments where conductive pollutants may be present (pollution degree 3 according to EN 60730-1).

Moreover, the module can not be used in the presence of condensation, and be exposed to water.

6.1. Installation and use of the probe

The probe should be installed in the exhaust (chimney or flue). The installation should be performed at the point where the exhaust gas temperature is the highest but not greater than **700 ° C.** Installation in a place where the temperature exceeds a given threshold will damage the probe.

Operating position the probe should be such that the axis of the probe has been deflected from the level of the angle of not less than 10 ° but not greater than 15 degrees from vertical, as shown in Figure 6.1

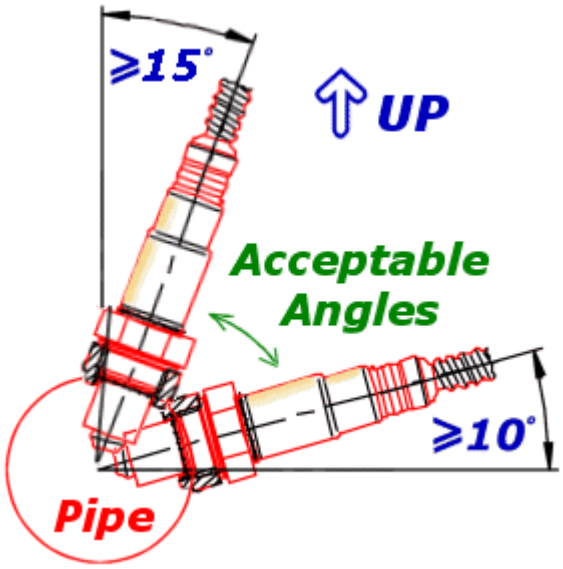

Fig. 6.1 Probe installation

The probe is equipped with a threaded connection M18x1, 5 It should work with the nozzle welded or screwed to install chimney pipe union preferred shape is shown in Figure Figure 6.2. Recommended torque sensor is 40 .60 Nm.

Beware of the risk of burns.
The probe tip is connected to the module can reach temperatures of several hundred degrees Celsius.

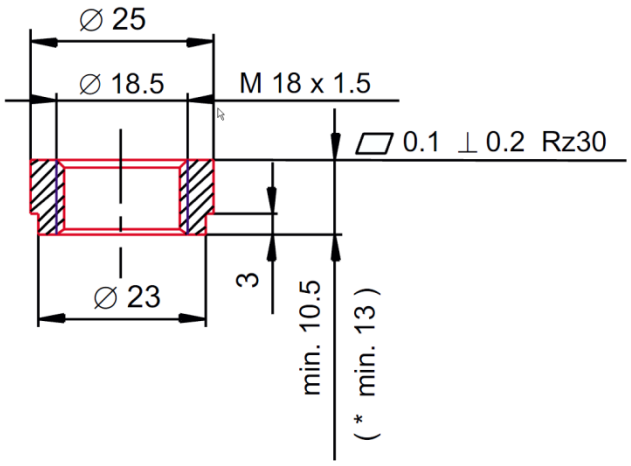

Fig. 6.2 Shape of the probe pipe

The maximum permissible operating temperature:

700 ° C - the probe and its metal
200 ° C - cable over a distance from the probe to the pin
120 ° C - the plug probe
60 ° C - cable between the sensor and the module connector

Terms of Use probe

- Do not leave the probe is not supplied abounding in the presence of the exhaust gases. The probe should be supplied via the module EcoLAMBDA if it is surrounded by gas.
- Protect the probe from the effects of condensation

Failure to comply with these requirements will shorten the life or even damage to the oxygen sensor.

6.2. Installing the module

EcoLAMBDA module is designed for installation. Method of construction and installation shall comply with the requirements of **EN 60335-1.**

The buildings can use the standard mounting enclosure with a width of eight modules. Space required for the module is shown in Figure 6.3 . The blue box is the minimum distance from the rest of the building.

Module should be installed so following issues should be guaranteed:

- **a level of protection equivalent to that provided for the environmental conditions**
- **protection against the ingress of dust and water**
- **not exceed the maximum operating temperature (60°C)**
- **ensure the exchange of air in the housing**
- **prevent access to hazardous parts**
- **in the electrical installation connected to the unit should be placed a device for disconnection of the two poles of the mains power supply in accordance with the rules governing the construction of such an installation.**

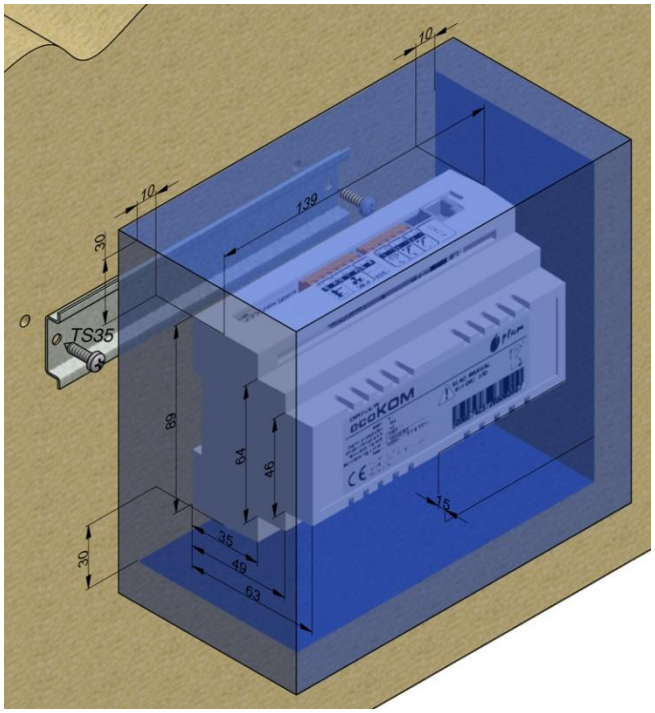

Fig. 6.3 Installing the executive module

Before placing the unit on the bus to pick up the tabs with a screwdriver. After placing the rail, push the taps to its original position. Make sure that the unit is mounted securely and cannot be deducting it from the rails without the use of tools.

6.2.1. Connection service

The module is equipped with a spring-type connectors. Placing the cable in the connector is made by pressing a flat screwdriver into the connector, is inserted into the end of the cable (with integrated collet) and then release the button.

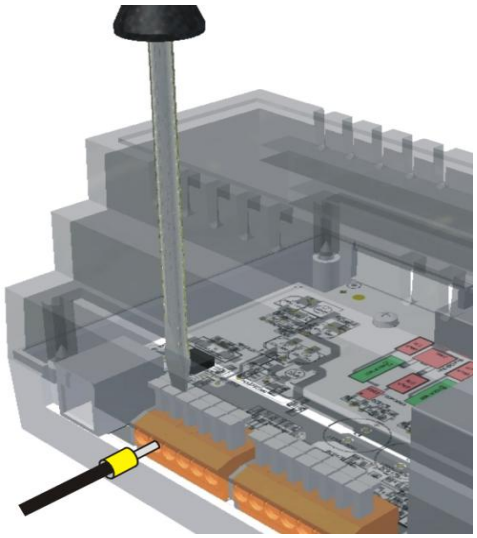

Fig. 6.2 Clamps service

ZThe range of acceptable cross sectional area cable connected to the terminal in the table below

Type of circuit	Exceeded her line
Network circuits	0.75 ÷ 1mm ^{2} *
Low Voltage Circuits	0.25 ÷ 0.75 mm ^{2}

** For installation of wire-wound, the maximum cross section of 1.5 mm ^{2}*

Length of wire end ferrules (Stripped length) should be 8 to 10 mm. The shorter end of such 6 mm may fall out of the connector.

6.2.2. Connecting network circuits

Install the unit with the power disconnected network.

The module is designed for power supply of 230V, 50Hz. Power supply is connected to terminals L, N. Power Wiring diagram shown in Figure 6.5

Leads to a 230V power devices should be conducted in such a way that they encounter with the cables connected to sensors and other electrical components, plus all the cables should not come into contact with surfaces hotter than the nominal operating temperature of these wires.

The module is equipped with additional terminals (3,4) Distribution mains supply and for connecting an additional device for cooperating with the module.

Power led out with the clamps is not protected with a fuse. 3.4 clamps inside the module are directly connected to clams 1,2. Maximum load of these terminals is 2A.

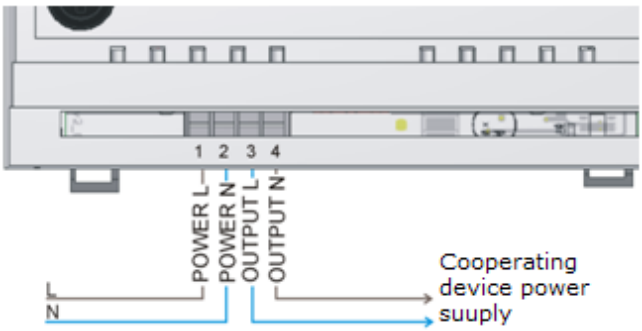

Fig. 6.3 Connecting mains power

6.2.3. Connecting transmission circuits

Communication module with other devices is via RS485 interface. Cable to make the connection is included in the kit. The cable has a standard RJ11 connector and supports them as a standard telephone connection. Distribution of signals in the connector shown in Figure BUS Figure 6.6 . If the supply cord is too short, you can use the telephone (four-wire) with RJ11 connectors with a length not exceeding 10 m.

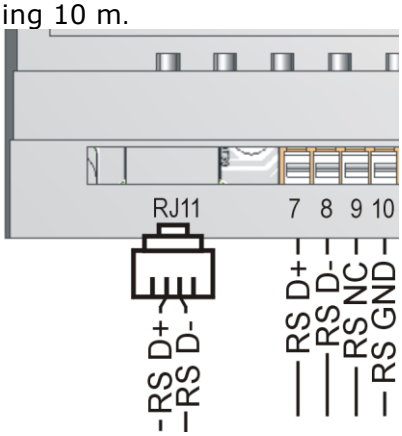

Fig. 6.4 Distribution of signals in the BUS connector

(View from the side of the connector)

6.2.4. Connection of the oxygen sensor

ecoLAMBDA module works with lambda sensor module supplied with the kit .. The use of other types of oxygen sensors does not guarantee the reliability of the measurements.

Diagram of a probe to the module shown in Figure 6.7

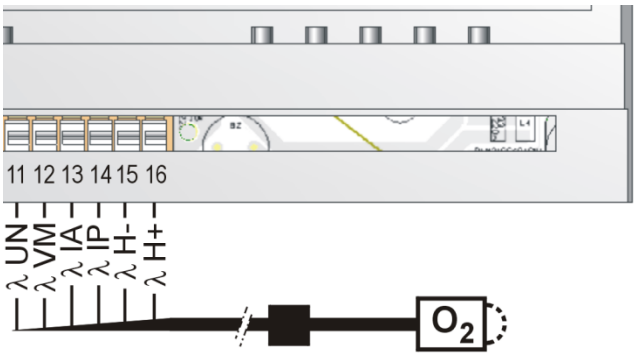

Fig 6.7 Connecting the probe to the module

Legend:

Input	Wire color
□ **H+**	Grey
□ **H-**	White
□ **IP**	Pink
□ **IA**	Green
□ **VM**	Yellow
□ **UN**	Brown

7. REPLACING THE FUSE

Before replacing the fuse, disconnect the power supply to the unit.

The device uses fuse 1.25 A slow-blow type 215P 5x20 tube by LittelFuse..

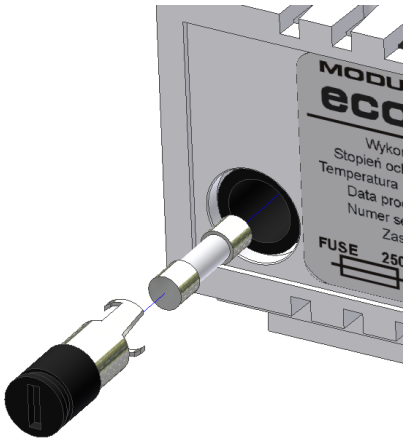

Fig. 7.1 Fuse replacement

Manufacturer reserves the right to change design and software without notice.

Changelog:

3.0 Added sections of connecting cables
4.0 adds information about the length of the cable insulation. Described outputs of a probe
5.0 Updated drawings of the device according with the update of the equipment.

Ignatki 27a, 16-001 Kleosin
Poland
tel. +48 85 749-70-00
fax +48 85 749-70-14

plum@plum.pl
www.plum.pl
www.plumelectronics.eu