



Pegasus[®] *Pro* series

12 x 2.3 kW Digital Dimmer

User's manual

Fifth edition

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Dear Customer!

Thank you for chose PLS Electronics product. Please read this manual carefully. If you have any technical question or you looking for other equipments, don't hesitate to take up the contact with our sales representative or with the manufacturer at the www.pls.hu web site.

This apparatus is a twelve channel digital dimmer with DMX 512/1990 or 0-10V control (optional) with additional control possibilities. The light control is produced by a phase angle control system (on the neutral).

The wrapper of the unit is NOT baby toy
therefore keep it away form babies!

For technical questions and *original spare parts* please take up the contact with our sales representative or with the manufacturer at the www.pls.hu web site.



ATTENTION!



DON'T USE WITHOUT PROTECTIVE GROUND!



Not allowed to make a parallel connection between any outputs (phases or neutrals) of the unit!
Otherwise the unit can be damaged!

Front parts

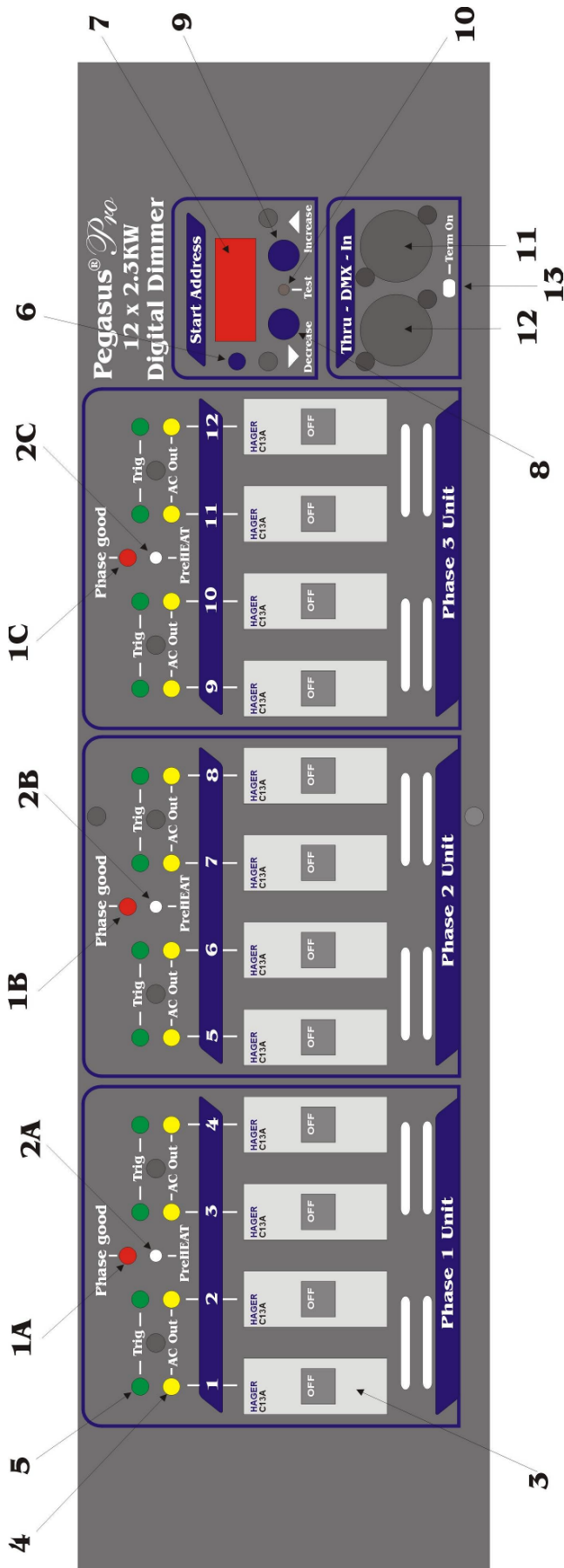


Figure 1. Handling units of front part

- 1A,B,C Phase / Module state indicators. If it's ON, the corresponding phase unit is working.
- 2A,B,C PreHeat/Curve setup button of Module 1, 2 and 3. See the operation later.
3. Circuit breakers to protect the outputs.
4. These green LEDs show the control level of each channel.
5. These yellow LEDs show the output level of each channel.
6. DMX control LED (If it's flashing, the DMX pocket is correct; when ON, the dimmer is in Test, Chaser, PreHeat or Curve setup mode; when OFF, the DMX pocket is incorrect, not present or Analog control (optional) is on.)
7. DMX display. Here you can see basically the start address of this apparatus on the DMX line.
- 8/9. Down / Up buttons. With them you can set the DMX start address, Test channel, Chaser program, PreHeat level or the Control curve depends on the dimmer state.
10. Test/Chaser button. If you push one time the selected channel of the dimmer is increasing automatically from 0% to 100%. If the display indicates "00", all channels are go 0% to 100%. By pressing this button again the dimmer goes to **Chaser** mode (see later). Push the Test button again, and the dimmer goes back to normal dimming operation.
11. DMX input via male XLR connector.
12. DMX throughput via female XLR connector
13. 120 Ohm DMX line termination switch. Switch it to ON position only if this unit is the last on the DMX line! Otherwise left it in **OFF** position!

Outlet of the backside connectors at **Pro-S** (Schuko), **Pro-F** (French/Belgian), **Pro-C** (CEE16/3), **Pro-PC** (PowerCon) and **Pro-WL** (Wieland ST17) dimmer

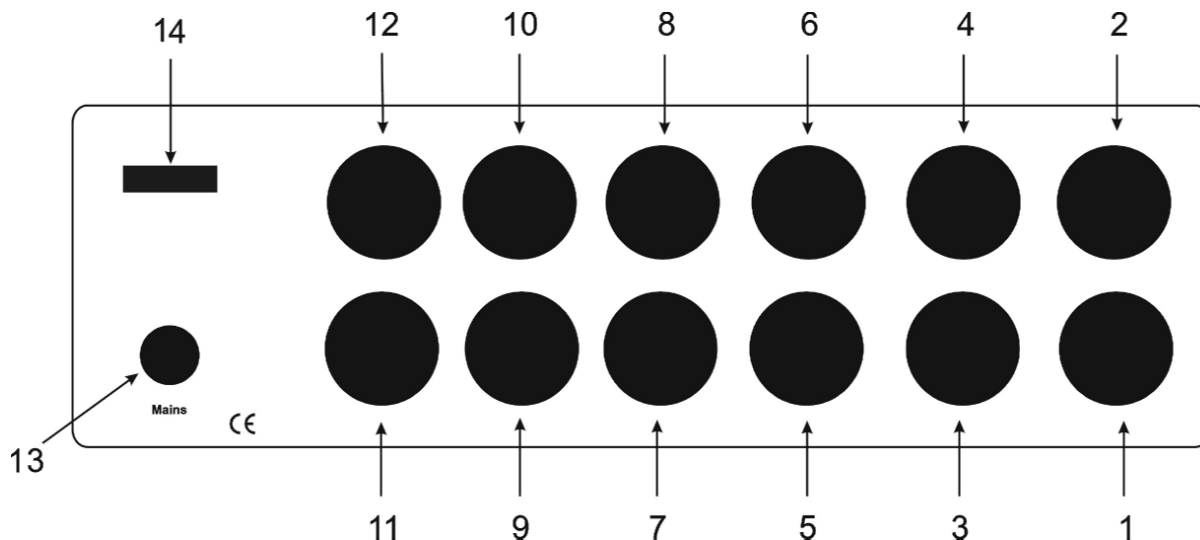


Figure 2. Back part connectors

1-12. Outputs of the channels from 1 to 12.

13. 3 x 40A input mains cable (H07 rubber; 5x6mm²) without CEE male plug

14. Analogue input via 15 pole SUB-D male connector (optional). **At /B suffixed version of the Pro dimmer at this position you can find the XLR connectors for DMX!**

Outlet of the backside connectors at **Pro-H2** dimmer:

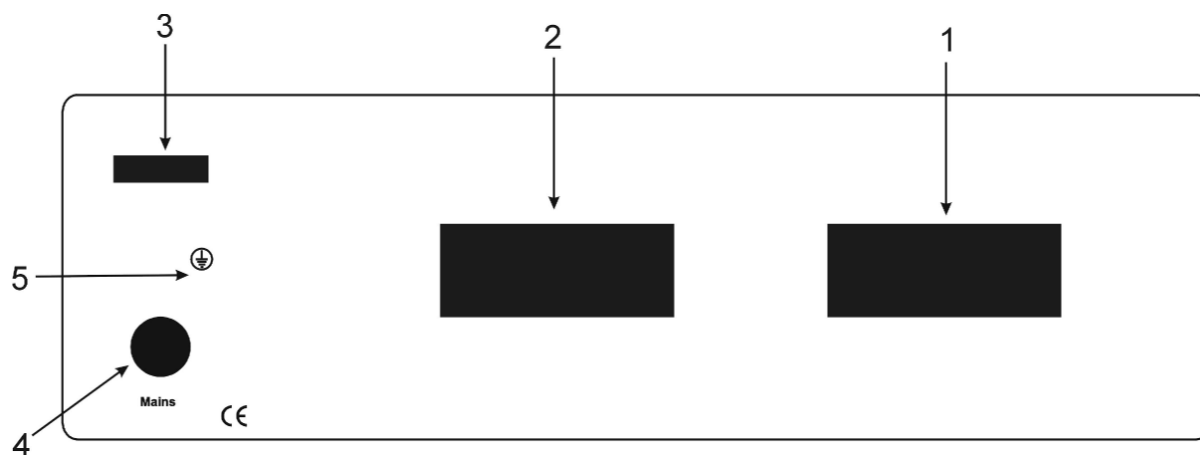


Figure 3. Back part connectors

1. Outputs for the channels 1 to 6. This connector referred in the future as **Connector A**.

2. Outputs for the channels 7 to 12. This connector referred in the future as **Connector B**.

3. Analogue input via 15 pole SUB-D male connector (optional). **At /B suffixed version of the Pro dimmer at this position you can find the XLR connectors for DMX!**

4. 3 x 40A input mains cable (H07 rubber; 5x6mm²) without CEE male plug
5. Additional Protect Earth (PE) connection point for outputs with M4 nut

The pin outlet the 16-pole 'Harting' type connectors in **normal H2 version** is the follows:

Pin number	Function
1, 2, 3, 4, 5, 6	Output <u>phases</u> for channel 1,2,3,4,5,6 respectively at Connector A and output <u>phases</u> for channel 7,8,9,10,11,12 respectively on the Connector B .
9, 10, 11 12, 13, 14	Output <u>neutrals</u> for channel 1,2,3,4,5,6 respectively at Connector A and output <u>neutrals</u> for channel 7,8,9,10,11,12 respectively on the Connector B .
7, 8, 15, 16 and the side connectors	PROTECTIVE EARTH (PE)

The pin outlet of the 16-pole 'Harting' type connectors in **H2-D version** is the follows:

Pin number	Function
1, 3, 5, 7, 9, 11	Output <u>phases</u> for channel 1,2,3,4,5,6 respectively at Connector A and output <u>phases</u> for channel 7,8,9,10,11,12 respectively on the Connector B .
2, 4, 6, 8, 10, 12	Output <u>neutrals</u> for channel 1,2,3,4,5,6 respectively at Connector A and output <u>neutrals</u> for channel 7,8,9,10,11,12 respectively on the Connector B .
13, 14, 15, 16 and the side connectors	PROTECTIVE EARTH (PE)

Outlet of the backside connectors at **Pro-SX** dimmer:

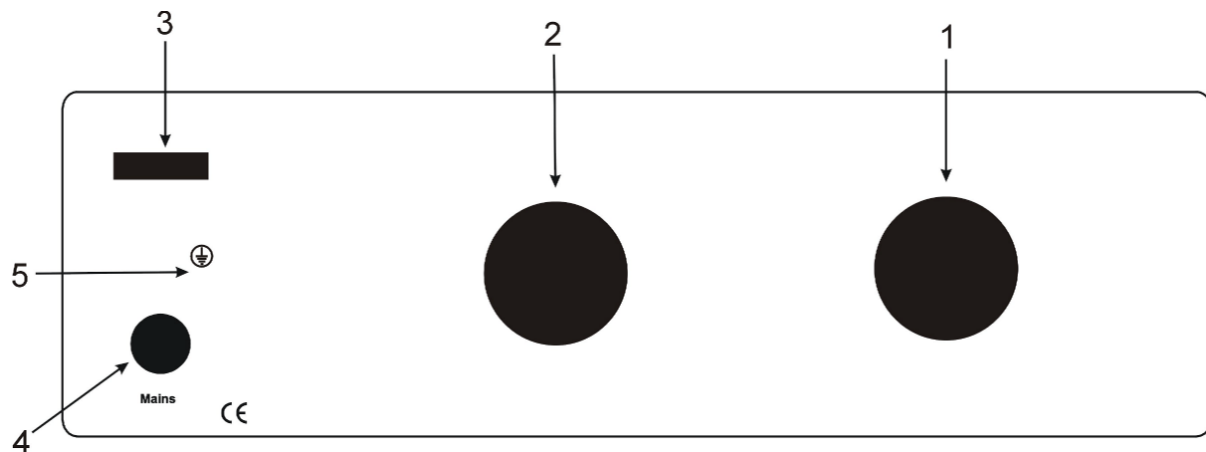


Figure 4. Back part connectors

1. Outputs for the channels 1 to 6. This connector referred in the future as **Connector A**.
2. Outputs for the channels 7 to 12. This connector referred in the future as **Connector B**.
3. Analogue input via 15 pole SUB-D male connector (optional). At **/B suffixed version** of the **Pro dimmer** at this position you can find the **XLR connectors for DMX!**

4. 3 x 40A input mains cable (H07 rubber; 5x6mm²) without CEE male plug
5. Additional Protect Earth (PE) connection point for outputs with M4 nut

The pin outlet the 19-pole 'Socapex' type connectors is the follows:

Pin number	Function
1, 3, 5, 7, 9, 11	Output <u>phases</u> for channel 1,2,3,4,5,6 respectively at Connector A and output <u>phases</u> for channel 7,8,9,10,11,12 respectively on the Connector B .
2, 4, 6, 8, 10, 12	Output <u>neutrals</u> for channel 1,2,3,4,5,6 respectively at Connector A and output <u>neutrals</u> for channel 7,8,9,10,11,12 respectively on the Connector B .
13, 14, 15, 16,17,18,19	PROTECTIVE EARTH (PE)

2. Installation of the unit

After unpacking the apparatus is ready for use. **Not to make the cable longer! If it is short, use standard extension. Operating with injured cable is perilous!**

CAUTION!

The apparatus is NOT waterproof! Protect from several liquids. Not to use outdoors without appropriate preventive measures. If water or other liquid getting into it, dry up, and take to technician! Working with wet apparatus is

PERILOUS!



The unit has been shipped with 5x6mm² H07 rubber cable without CEE male plug. The correct order of the power cable is the follows:

Cable color	Function
Grey	Line 1 (L1 or R)
Black	Line 2 (L2 or S)
Brown	Line 3 (L3 or T)
Blue	NEUTRAL (N)
Green/Yellow	Protect Earth (PE)

CAUTION!

The manufacturer doesn't responsible if the customer connect the cable wrongly! The guaranty will be void if the connection order is wrong and the unit can be damage too!



Before power up, always control the right connection of the Lines, Neutral and the Protect Earth!

The unit is able to control 12 x 10Amps. The input L1, L2 and L3 lines are connected to the channels as the follow:

1-4 channel to Phase L1; 5-8 channel to Phase L2; 9-12 channel to Phase L3

You can use the unit from two or one phase too (for example the L1 and L2 are the same phase). If change the numbers of phases the maximum output power is change like this:

At 3 phases $\Sigma 3 \times 40\text{Amps}$; at 2 phases $\Sigma 2 \times 40\text{Amps}$; at 1 phase $\Sigma 1 \times 40\text{Amps}$



These are the absolute maximum ratings!
If you overdrive, the dimmer can be DAMAGE!



3. Analog control (optional)

The functions of the SUB-D connector pins are in the following table:

Pin N°	Function
1-12	1-12 Channel IN
13	FIX +10V Output
14	Analog mode enable input (connect it to GND)
15	GND

The Pin 13 is a fix 10V ($I_{\text{OMAX}}=50\text{mA!}$) output.

With this output and twelve potmeters you can make a very simple control board to this dimmer. The control board doesn't need any other power supply. Use 10K to 100K Linear type potmeters. **If you don't want to use**

pin 13 leave it UNCONNECTED! The pin 14 must be connected to GND to enable the analog control! (Just connect the pin 14 to the pin 15.) While the analog control is enabled, the dimmer doesn't receive any data from the DMX line, and the display and the DMX LED are blank. For the analog control cable use a 14 core wire with shield. The cable will be the shortest as possible. The connector type is the SUB-D 15 pin female with house.

4. Digital Control

4.1 DMX input

The DMX input signal must be connect to the DMX In [11] marked connector, which can be found on the front side of the unit. If this unit is the **last one on the DMX** network chain you must take the termination switch on the front panel to **“Term On”** position on the front panel. **Otherwise left it at the other position!**

Pin Number	Function
1	Ground (Shield)
2	Data (-)
3	Data (+)
4	Spare Data (-) NC
5	Spare Data (+) NC

Table 1. Functions of XLR pins

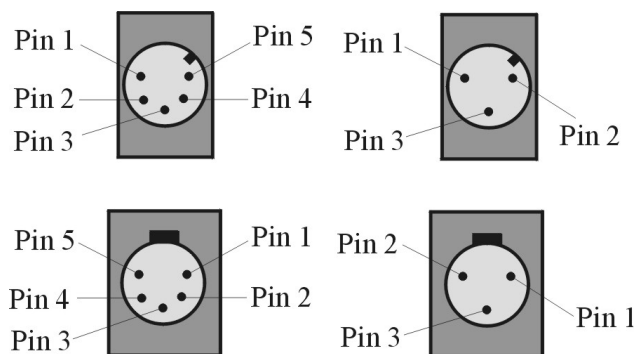


Figure 1. Outlet of the connectors (front view, the male connectors in the upper line)

The DMX input of the dimmer is power and opto isolated!

Not recommended to connect the Pin 1 to the Protect Earth (PE)!

The DMX Throughput is **not isolated** from the DMX input and **not refreshed**!

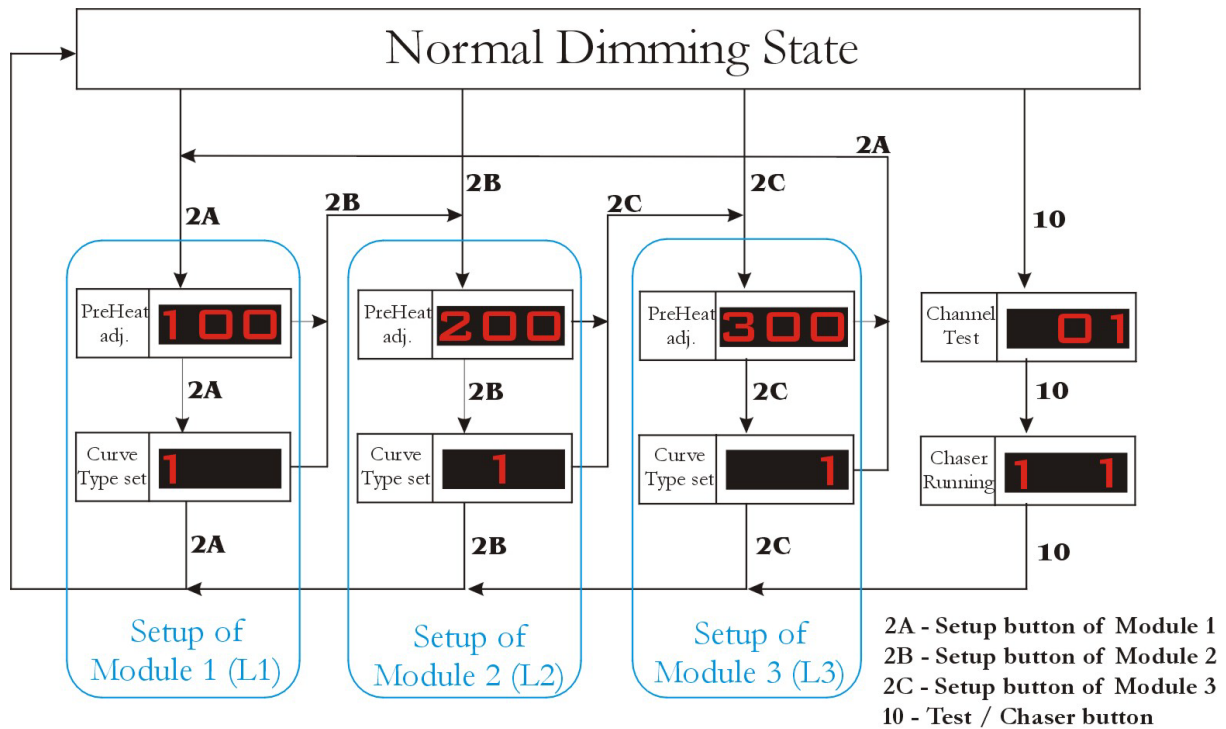
4.1.1 Setting the DMX Start address

The DMX start address can be select with two blue buttons on the front panel. The left side button [8] is decrease, the right one [9] is increase the DMX start address of the dimmer. If you hold down one of the buttons, the address is increment/decrement automatically. After the last button press, the dimmer saves the selected address within 5 seconds. The saving is indicated with a three times flash of the display (no dimming while saving!). On the next power on, the saved DMX address will restore.

4.2 Control setup of each dimmer module

Below each power indicator LEDs [1A,B and C] you can find a button [2A, 2B and 2C]. By pressing one of these buttons the dimmer goes into the setup of the corresponding module. In this setup you can adjust the **PreHeat Level** and select the **Control Curve Type** for the module (each channel on the module will have the same preheat level and control curve). The incoming DMX signal has no affect to the output while the dimmer is in the setup and the DMX LED is ON.

Menu structure of Pro dimmer



4.2.1 PreHeat Level adjust

After pressing e.g. the setup button [2A] of Module One (CH1 to 4) you can see similar on the display of the dimmer:



↑
Module No.

↑
PreHeat level (%)

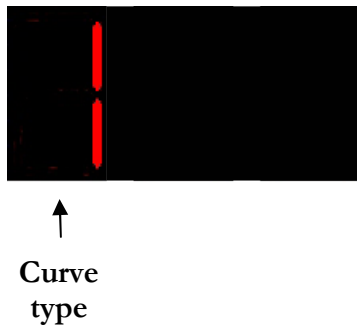
It means the *PreHeat Level* of the Module One is 25%. The first digit from the left means the module number and the next two means the *PreHeat Level* in percent. With the **Up/Down** buttons [8,9] you can adjust the *PreHeat Level* from 0% till 30% and meanwhile the outputs of the module go to the selected level.

The factory setting is 0% in all modules.

After set of the *PreHeat Level* you can do the follows:

- Press the **setup button of another module** to store the selected *PreHeat Level* into the memory and go to the setup of the other module (you can set there the *PreHeat Level* first also).
- Press again the **same setup button** (in this example the Module One) to go to the *Curve Type* select. In this case the *PreHeat Level* is also stored into the memory.

4.2.2 Control Curve select



After the second pressing of the setup button [2] of Module One you can see in the **left position** on the display the actual control curve of the module. (If you are at the setup of Module Two you can see the *Curve Type* in the **middle position** of the display, at the Module Three in the **right position**.)

The *Curve Types* are the follows:

1. Bright-Linear output
2. Voltage-Level Linear (Phase-Linear)
3. Switch (ON/OFF Relay function)
DMX: 0-127 the channel is OFF,
DMX: 128-255 the channel in ON

The factory setting is Bright-Linear (1) in all modules.

With the **Up/Down** buttons [8, 9] you can select the requested *Curve Type*. After select of the *Curve Type* you can do the follows:

- Press the **setup button of another module** to store the selected *Curve Type* into the memory and go to the setup of the other module (you can set there the *PreHeat Level* first).
- Press again the **same setup button** (in this example the Module One) **to exit** from the setup (go back to the normal dimming mode) and store the selected *Curve Type* into the memory.

4.3 Testing the outputs (TEST Mode)

To activate **TEST** function, press the **Test/Chaser** button [10] on the front panel. After pressing it, the level of the selected dimmer channel is going automatically from 0% to 100%. Use the **Up/Down** keys [8,9] to select another channel. If the display indicates “00”, all channels are going from 0% to 100%. By pressing the **Test/Chaser** button [10] the dimmer goes to **Chaser mode**. To exit from the Test/Chaser mode, press again the Test/Chaser button [10]



Declaration of Conformity

We, PLS Electronics Limited declare under sole responsibility that the product:

Product name:Pegasus® Pro 12 x 2,3KW dimmer
Product model (*output variations*):.....S (Schuko), H1 (24-pole 'Harting'), H2 (2 x 16-pole 'Harting'), SX (2 x 19-pole Socapex), C (12 x 3 pole 16A CEE)
Serial Number:n/a
Lot:n/a
Item number:One

to which this declaration relates is in conformity with the following standards:

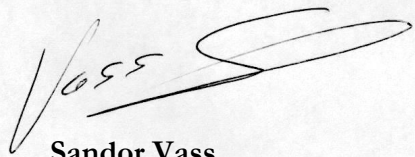
- **EN 55015-1** (Electromagnetic compatibility. Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment (CISPR 15:2000+CISPR 15:2000/A1:2001+ CISPR 15:2000/A2:2003), using:
 - **IEC 61000-3-4** (Technical report, Limitation of emission of harmonic currents in low-voltage power supply systems for equipment with rated current greater than 16A)
 - **EN 61000-3-11** (Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated current up to 75A and subject to conditional connection)
- **MSZ 2364** (Electrical installations with a nominal voltage up to 1000 V)

Therefore the upper indicated product **qualifies** the EU 73/23/EEG LV directive and the 89/33/EEG EMC directive, considering 93/465/EEG directive for CE.

Place of issue:
Szekesfehervar, HUNGARY

Date of issue:
01.10.2006

Signature of authorised person:



Sandor Vass
Director of PLS Ltd