



The PP600 Series LED Lighting Controllers

Dynamically adjust all lighting parameters

- Use techniques not previously possible
- Auto-calibrate lighting
- Produce more reliable inspection systems
- Cut the cost of using LED lighting.

The PP600 range of Gardasoft products is easy to use, efficient and cost-effective. Although it is a legacy product, it will be supported for many years. The RT range of lighting controllers is also available from Gardasoft, which offers SafeSense™ and SafePower™ technology and higher performance, and should be considered for newer designs.

The Problems Faced:

- 1** Powering LED lighting requires a DC supply, series potentiometer, enclosure, wiring, documentation and testing – a hidden cost often resulting in about three days work.
- 2** Automated control of lighting then requires an analogue output board, amplifiers and power drivers, more documentation. After all that there are noise and ripple issues to be resolved.
- 3** Small variations in supply voltage can cause large changes in brightness.
- 4** Different component types require different lighting systems. Several different views can be taken of each component.
- 5** Although LED Lighting is fairly stable, some intensity drift does occur.
- 6** Production line down-times prohibit lengthy manual adjustments of lighting levels for different builds.

The PP600 Series' Solutions:

- 1** The **PP600 Series** can be wired up and working in about ten minutes.
- 2** The **PP600 Series** replaces all this with a single off-the-shelf unit.
- 3** The **PP600 Series** supplies a constant current to produce much more stable lighting.
- 4** Use a **PP600 Series** unit and control the switching, intensity and timing directly from software.
- 5** Measure the lighting intensity by averaging the brightness of the image grabbed by a camera; send commands to the **PP610 Series** using RS232 to adjust the lighting current accordingly.
- 6** Intensities can be stored with other configuration data and downloaded to the **PP610 Series** in seconds.

The PP610 Series features

The PP610 lighting controller provides PC or PLC control of LED lighting for machine vision applications. It includes the power regulation, intensity control, timing and trigger-ing functions required for machine vision systems.

Three modes of operation

Three modes are provided independently for each channel:

- **Continuous** – output is a continuous current;
- **Pulsed** – output is pulsed once per trigger;
- **Selected** – output changes according to digital inputs. (Note: If you set one of the selections to 0, the PP610 operates in *Switched* mode.)

The PP610 is set up using simple RS232 commands sent from a PC or PLC. The set-up is saved in non-volatile memory so that the PP610 will resume operation after a power cycle. It can also be set up using four push-buttons and a four-digit display on the front of the unit.

Note: For SafeSense™ and SafePower™ technology, and even higher performance, see our RT range of Controllers.

Gardasoft's website www.gardasoft.com provides a free download of a demonstration program, with fully commented source, showing how the PP610 can be controlled from a PC using either Visual C++ or Visual Basic. (Note: More product information, manuals and application notes can also be found at our website.)



PP600 SERIES SPECIFICATIONS

SPECIFICATIONS:	PP600	PP602	PP610	PP612	PP600F	PP602F	PP610F	PP612F
User interface	Push-button		Push-button & RS232		Push-button		Push-button & RS232	
Lighting connection	Screw terminal	Screw terminal & Japanese-style connector	Screw terminal	Screw terminal & Japanese-style connector	Screw terminal	Screw terminal & Japanese-style connector	Screw terminal	Screw terminal & Japanese-style connector
Output channels	Two independent, constant current outputs							
Output current	From 0mA to 10A, in steps of 0.25mA for currents up to 750mA; in steps of 2.5mA for higher currents Maximum current per channel: 10A pulsed, or 4A continuous (subject to heat dissipation limits)							
Output voltage	0V to 47V. (Note: Must be at least 1V less than the lighting power supply.)							
Trigger inputs	Two opto-isolated digital inputs, which require 5V to 24V							
Pulse width timing	From 20µS to 1.3S, in steps of 20µS Timing repeatability: 2µS				From 5µS to 10mS, in steps of 1µS Timing repeatability: 1µS			
Delay from trigger to pulse	From 20µS to 1.3S, in steps of 20µS Timing repeatability: 2µS				From 10µS to 10mS, in steps of 2µS Timing repeatability: 2µS			
Supply voltage	Control supply: regulated 12V to 40V. Lighting supply: can be the control supply, or a separate 12V to 48V supply.							
Dimensions	118mm long x 76mm wide x 27mm high (excluding DIN fixing)							
Weight	240g (excluding DIN fixing)							
Mounting	DIN rail or panel mounting							

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