



**SIEMENS**  
Ingenuity for life

## Universal dimmers – for all dimmable LEDs and lamps

Equipped with two load outputs, no minimum load,  
compact and versatile in their application.

[siemens.com/gamma](http://siemens.com/gamma)



The worldwide  
standard for  
home and  
building control



### LEDs and conventional

Light-emitting diode lamps – LED for short – are capturing the lighting markets, extensively replacing conventional incandescent light bulbs and halogen lamps. At the same time, demand to control the brightness of lighting is simultaneously increasing. Dimming functions in LED lamps focus more on ease and convenience than on energy efficiency. The integrated system electronics can only ensure dimming of LED lamps if the LED is marked as dimmable by the lamp manufacturer.

### Reliable dimming of LEDs

The universal dimmer fulfills the requirement to dim all dimmable lamps, and dimmable LED lamps in particular. It allows reliable dimming of even small lamp outputs of just a few watts of power. Despite the low load, the LED definitely dims to complete shut-off.

### Compact and versatile in its applications

At normal lamp outputs the compact modular series unit equipped with four modules can be operated using two load outputs, or at higher lamp loads using only one load output. This versatility simplifies planning effort and product selection.

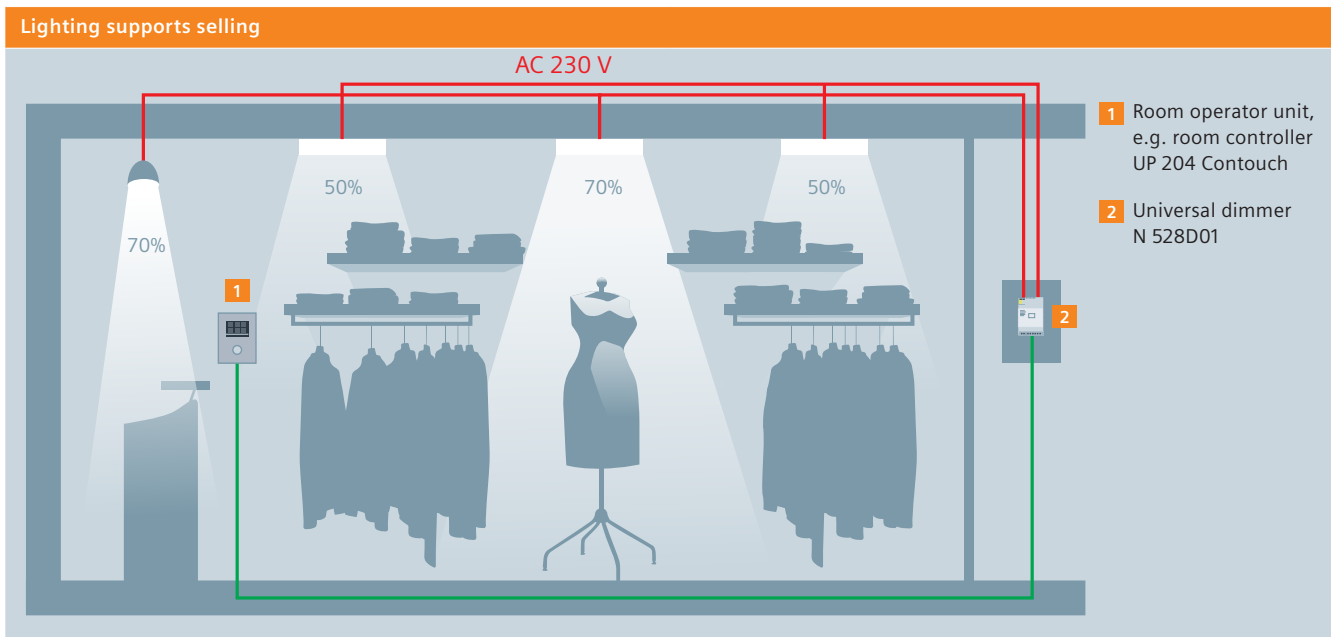
### Application program and functions

The application program ensures efficient planning, engineering and commissioning. All functions are designed and executed in the same manner as in analog products, thereby reducing training needs.

### Highlights

- Dimming of LEDs and conventional lamps
- Stepless, continuously variable dimming and reliable shut-off of even low lamp outputs
- Compact design for versatile application with two outputs
- High scope of functionality and comprehensive application program

# Dimming of LED



Lighting control systems always play an important role when it comes to presenting products or rooms in a favorable light. A fitting mood can be achieved in rooms and spaces by adjusting

the brightness of individual lamps. To achieve that mood, universal dimmers are used that enable appealing adjustment of the lighting brightness.

## Conventional lamps are giving way to LED lamps



The term “retrofit” – to install something retroactively – suggests that LED retrofit lamps are supplanting conventional incandescent and halogen lamps. Products of the same standard socket sizes (E27 and E14, etc.), similar designs (as bulbs, spotlights and candles) and directional characteristic (global, spot, etc.) are available, some dimmable and some not.

In addition to LED retrofit lamps with integrated electronics, there are LED lamps controlled by an LED driver that serves as an electrical ballast device. These LED drivers act as electronic transformers.

## Dimming of LED lamps



In general, all conventional incandescent and halogen lamps are dimmable. In contrast, LED lamps are equipped with electronic switching for control purposes. As no uniform standard is available for these electronics, every LED lamp behaves differently. The lamp manufacturer defines the brightness range within which an LED lamp can be dimmed. Lamp manufacturers mark LED lamps correspondingly in their technical datasheets, on the packaging or on the product itself. Hence, dimming LEDs is only implementable within the scope of possibility set by the LED manufacturer. Because the electronics installed in dimmable LED lamps are not standardized, the range of dimmability can only be guaranteed by testing.


# All key data at a glance

## Technical data



- Two outputs for switching and dimming resistive, inductive or capacitive loads
- Automatic adjustment of leading-edge or trailing-edge control, depending on the connected load type
- Rated operational voltage AC 230 V
- Rated frequency 50 – 60 Hz
- 300 VA per output or 500 VA if only one output used
- No required minimum load per output
- Electronic protection for each output against overload, short-circuit and overheating
- Screw terminals for connecting untreated single-core, stranded or multi-core conductors, 0.5 to 2.5 mm<sup>2</sup>
- Bicolor LED for indicating switching status (red = ON, green = OFF) or errors (blinking orange), for each output
- Electronics operated via bus voltage
- Designed for DIN rail mounting on a TH35 mounting rail according to DIN EN 60715
- Maximum width 4 module units (1 MU = 18 mm)
- Operating mode separately selectable for each output (normal mode, one- or two-level timer mode, blinking)
- Additional object for each output for blocking/releasing the output
- Sending of status objects on request and/or automatically after a change
- Adjustable blocking time for sending status objects after restart and bus voltage recovery
- Adjustable dimming value for each output in case of bus voltage failure and recovery
- Additional night mode object for time-limited switching on the output (and hence illumination) at night
- Adjustable ON period at night or with timer mode
- Selectable warning of imminent switching off the illumination by dimming to 50% of the previous dimming value during night mode or timer mode
- Integrated 8-bit scene control and integration of each output in up to 8 scenes
- Selectable counting of operating hours and with threshold monitoring of the operating hours
- Selectable counting of load cycles and with threshold monitoring of the load cycles
- Building site function for switching light without commissioning with ETS of the dimmer with Engineering Tool Software (ETS)

## Connected load depending on lamp type\*

Lamp type	Operation of	
	2 channels	1 channel
 Dimmable LEDs	≤100 VA**	≤200 VA**
 Low-voltage halogen lamps with electronic transformers	300 VA	500 VA
 Dimmable energy saving lamps (ESL)	≤45 VA**	≤75 VA**
 High-voltage halogen lamps	300 W	500 W
 Low-voltage halogen lamps with magnetic transformers	240 VA	400 VA
 Incandescent lamps	300 W	500 W

\* At 35 °C ambient temperature; derating to 80% at 45 °C

\*\* The maximum connected load at the output depends on the lamp type and mode of operation (leading-edge or trailing-edge control).

## Selection and ordering data

Type	Product title	DT	Order no.	PU (Unit, set M)	PS/P unit	PG	Weight per PU (kg)	Price
N 528D01	Universal dimmer N 528D01	A	5WG1 528-1DB01	1	1		0.275	

Our world is undergoing changes that force us to think in new ways: demographic change, urbanization, global warming and resource shortages. Maximum efficiency has top priority – and not only where energy is concerned. In addition, we need to increase comfort for the well-being of users. Also, our need for safety and security is constantly growing. For our customers, success is defined by how well they manage these challenges. Siemens has the answers.

**“We are the trusted technology partner for energy-efficient, safe and secure buildings and infrastructure.”**

**Published by  
Siemens Switzerland Ltd 2016**

Building Technologies Division  
International Headquarters  
Gubelstrasse 22  
6301 Zug  
Switzerland  
Tel +41 41 724 24 24

Siemens Building Technologies  
Brunel House  
Sir William Siemens Square, Frimley  
Camberley  
Surrey, GU16 8QD  
United Kingdom  
Tel +44 1276 696000

Siemens Ltd  
Building Technologies Division  
22/F, AIA Kowloon Tower, Landmark East  
100 How Ming Street  
Kwun Tong, Hong Kong  
Tel +852 2870 7888

Article no. E10003-C38-6B-A0200-7600 (Status 08/2016)

Subject to changes and errors. The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.

© Siemens Switzerland Ltd, 2016