

GENERAL:

The ETD 1 universal pushbutton dimmer can be used to dim incandescent lamps and halogen lamps with tronic or conventional transformers.

The connected load is automatically detected on restoring the voltage, and the appropriate dimming mode is set.

Two additional, electrically isolated inputs permit the simple implementation of a comprehensive central control.

Different switching or dimming functions are user programmable for each input (1, Z1, Z2). Therefore the ETD 1 is extremely flexible and comfortable in installation and operation.

OPERATION:

The 3 push-button inputs 1, Z1 and Z2 can be assigned 10 different functions. By factory setting the inputs are assigned as follows:

- Input 1 => Toggle
- Input Z1 => Switching on
- Input Z2 => Switching off

The "Toggle" function is the typical push-button dimmer mode of operation. A brief press of the pushbutton-switch (<0.5s) causes the dimmer to switch the light on or off. If the button is held down for a longer period (>0.5s), the brightness is increased or reduced ("dimmed up" or "down").

A adjustable "snooze function" can be assigned to each input. The snooze function is then activated by dimming the brightness and deactivated by increasing the brightness. When the snooze function is activated, the brightness is slowly reduced to the minimum value and the light is then switched off. The dimming time is determined by the maximum brightness. At maximum brightness, the light is dimmed to 0 within 60 minutes, and at half-brightness the dimming period is about 30 minutes.

Universal push-button dimmer ETD 1 500VA

SPECIAL FEATURES:

- Dims incandescent lamps and halogen lamps with tronic or conventional transformers
- Suitable for automatic demand switches
- Automatic load detection or selectable dimming modes (forward or reverse phase control)
- Extremely compact housing (fits in flush-mounted switch box and is therefore independent of the switch design used)
- Soft on/off function for low lighting component wear and pleasant switching characteristics
- Selectable "snooze" function (slow automatic down-dimming, e.g. for children's bedroom)
- Electronic short-circuit and overload protection
- Two additional, electrically isolated inputs permit a simple implementation of a central control
- 500 VA connectable load (expandable to max. 4x500VA with power extension modules EL 3)

TECHNICAL DATA:

Operating voltage	230V AC 50Hz
Power consumption	2W at 500VA load
Max. load	0-500VA
Capacitive Load at 1	max. 100nF
Glow lamps at 1	max. 20mA
Cap. Load at Z1, Z2	max. 20nF
Glow lamps at Z1, Z2	max. 1mA
Interference immunity	IEC 801-4 level 2
Equipment protection	IEC 801-5 level 2
Ambient temperature	-10°C to +50°C (load reduction from +30°C)
Insulated housing	flameproof to VDE 0304 part 3, level FV 0
Terminals	socket terminals with captive screws M3.5
Mounting	snap-on mounting on 35mm standard rail DIN EN 50022
External dimensions	18 x 88(45) x 58mm
Installation depth	55mm
Weight	80g
Colour (RAL)	grey 7035

ORDERING INFORMATION:

Part No	Type	Designation
etd109	ETD 1	universal push-button dimmer 230V/50 Hz 0-500VA
el3009	EL 3	Power extension 500VA

Programming different functions to the push-button inputs 1, Z1 and Z2

Activate the teach-in mode by pressing the "prog" button for more than 2 seconds

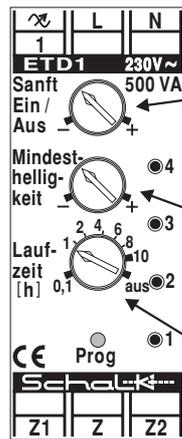
Select the desired function (see table below) by pressing the "prog" button several times

Activate one of the inputs (1, Z1 or Z2) to apply the selected function to this input

The LEDs 1 - 4 indicate the device status

- LEDs on: indicates the selected function in learn mode (see table)
- LEDs flashing fast: indicates the assigned function for the momentary activated push-button input.
- LEDs flashing slow: indicates an error (see table)
- LEDs flashing in sequence: timer function is activated

Adjustable functions:



Soft ON/OFF:

The "soft On/soft Off" function brightens/dims the light while switching it on/off. This preserves the light medium and creates a pleasant switching effect. When the potentiometer is set to "-", the light is switched very rapidly and at the "+" position the light is switched very softly.

Minimum brightness:

Control for adapting the minimum brightness to different light media. The minimum brightness should be set to a level where switching on/off at minimum brightness still makes a perceptible difference.

Timer function:

Selectable time for switching off the lighting. When set to "aus" the timer is deactivated.

Description of the programmable functions ● = LED off ☺ = LED on ☼ = LED flash

- ☺ ● ● ● ● **1 Toggle:** a short keypress switches on or off, a long keypress is dimming up or down (switch on with last brightness)
- ☺ ☺ ● ● ● ● **2 Toggle with "snooze" function:** The "snooze" function is activated by dimming down and deactivated by dimming up
- ☺ ☺ ☺ ● ● ● ● **3 Toggle max:** Switches on with maximum brightness (instead of last brightness)
- ● ☺ ● ● ● ● **4 Toggle max with "snooze" function:** like Toggle with "snooze" (but switches on with max. brightness)
- ☺ ● ☺ ● ● ● ● ● **5 Switch on:** Switches on only with last brightness e.g. for "central on"
- ● ☺ ● ● ● ● ● **6 Switch off:** Switches off only e.g. for "central off"
- ☺ ☺ ☺ ● ● ● ● ● **7 Dim up/On:** A short keypress switches on, a long keypress is dimming up
- ● ● ● ☺ ● ● ● ● **8 Dim down/Off:** A short keypress switches off, a long keypress is dimming down
- ☺ ● ● ● ● ☺ ● ● ● ● **9 Switch on max:** Switches on only with max. brightness e.g. for "central on"
- ● ☺ ● ● ● ● ● **10 Switch over max:** Switching over between last brightness and max. brightness

Dimming mode: Automatic load detection is factory default, but in some cases it can be necessary to select the dimming mode manually. With the functions 11 to 13 the dimming mode can be set to automatic load detection, forward phase control or reverse phase control. The programming process is like described above with the difference that instead of a pushbutton input the internal Prog-Key has to be pressed for 10s to store the selected dimming mode.

- ☺ ☺ ● ● ☺ **11 Dimming mode Auto:** Automatic load detection after power on (factory default)
- ● ☺ ☺ ● ● ● ● ● **12 Dimming mode R,C:** reverse phase control for resistive and capacitive load (incandescent lamps or electronic transf.)
- ☺ ● ● ● ● ● ● ● ● **13 Dimming mode L:** forward phase control for inductive load (conventional transformers)

Error codes: (flashing LEDs after automatic switch off in case of an error)

- ☼ ● ● ● ● **1 Overload (more than 500VA load)**
- ● ☼ ● ● ● ● **2 Overtemperature**
- ☼ ☼ ● ● ● ● ● **3 Load shortcircuit**
- ● ● ● ● ● ☼ ● ● **4 Overvoltage**
- ☼ ● ● ● ● ● ● ● ● **5 Asymmetrical load**

Installation instructions:

When operating the dimmer, heat is generated as a function of the dimmer power output. If this heat cannot be adequately dissipated, the power output (load) must be reduced.

- 10% when installed in wood, plasterboard or hollow wall
- 20% when several dimmers are installed close together
- 10% per 5°C in excess of 30°C ambient temperature.

The efficiency of conventional and Tronic transformers must be taken into account. The maximum permitted power for the dimmer is based on the transformer's primary power input.

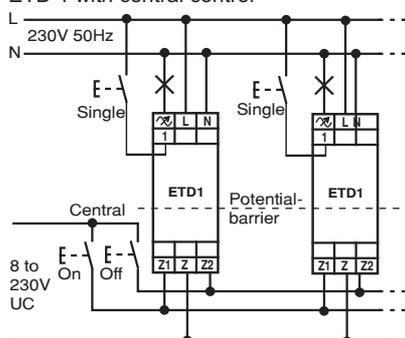
Tronic transformers must be authorised by the manufacturer for reverse phase control (trailing-edge phase control).

Dimmable loads:

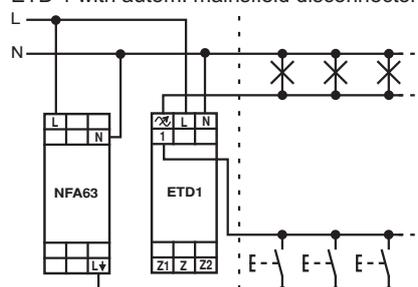
- ☼ ☼ Incandescent lamps and high-volt halogen lamps
- ☼ ☼ Tronic transformers
- ☼ ☼ Conventional (wound) transformers
- ☼ ☼ + ☼ ☼ Combination of incandescent lamps and tronic transformers
- ☼ ☼ + ☼ ☼ Combination of incandescent lamps and conventional transformers
- ☼ ☼ ☼ ☼ ☼ ☼ Tronic transformers and conventional transformers may not be combined (different dimming modes)!

TYPICAL APPLICATIONS:

ETD 1 with central control



ETD 1 with autom. mainsfield disconnector



ETD 1 with power extension to max. 4x500VA

