

GENERAL:

The FD3 U1 wireless-controlled universal dimmer can be used to dim and switch glow lamps and halogen lamps with Tronic or conventional transformers by remote control in combination with radio remote control transmitters (FSH 8 hand-held transmitter or FSU 4 flush-mounted transmitter).

The dimmer can also be used as a conventional momentary-contact touch dimmer by means of the wired local pushbutton.

The FD3 U1 automatically detects the connected loads and switches over to the appropriate dimming mode (leading-edge or trailing-edge phase control). Tronic transformers must not be used together with conventional (wound) transformers, because the two transformer types require different dimming modes.

The free-field range with the transmitters mentioned above is 50m. However, as is typical of radio remote controls, the range is strongly influenced by the local conditions.

APPLICATION:

Wireless dimming or switching of lighting systems.

OPERATION:

By appropriate programming, the following functions can be assigned to any transmission channels (transmitter pushbutton) or to the local pushbutton:

- Increase / dim brightness or switch with last brightness
- Switch on / over with maximum brightness
- Increase brightness or dim brightness
- Switch on or switch off

-Increase / dim brightness or switch with max brightness
 Each function can be assigned 2 address codes, thereby enabling central control.

The "Minimum brightness" control is used to set the minimum brightness of different light media.

The "Soft ON" and "Soft OFF" controls can be used to set the switching characteristics according to individual requirements.

Radio remote controlled universal dimmer FD3 U1 (35-500W)

SPECIAL FEATURES:

- Dims incandescent lamps and halogen lamps with tronic or conventional transformers
- Automatic detection of connected loads
- Local and Central control
- Programmable address codes (teach-in mode)
- Free-field range 50m
- Compact housing
- Input for local pushbutton switch
- Electronic short-circuit and overload protection

TECHNICAL DATA:

Reception frequency	433.92MHz
Modulation type:	OOK PWM
Operating voltage	230V AC 50Hz
Power input	2W at 500W load
Load min.	35W
Load max.	500W (power drop in case of thermally unfavourable installation)
Wired local input:	
Line capacitance	max. 10nF
Line length	max. 50m
Interference immunity	compliant IEC 801-4 level 2
Equipment protection	compliant IEC 801-5 level 2
Ambient temperature	-10°C to +45°C (power drop as from +30°C)
Insulated housing	Flameproof to VDE 0304 Part 3, level FV 0
Connections	Socket terminals with captive screws M3.5
Installation position	if necessary directed at transmitter
External dimensions	43x43x33mm ³
Weight	55g
Colour (RAL)	Grey 7035 / green 6029

ORDERING INFORMATION:

Part No.	Type	Description
fd3u19	FD3 U1	Radio remote control universal dimmer 230V AC/50 Hz35-500W

Accessories:

fs3h8b	FS3 H8	Hand-held transmitter, 8 buttons
fs3u49	FS3 U4	Flush-mounted transmitter 4 inputs 230V AC
hc3500	HC35	Top-hat rail clip

FD3 U1 OPERATION

LED display:

Programming mode: LEDs 1-3 indicate the dimmer functions to be programmed. The Central LED indicates if the address is stored as a Local or Central address.

Radio remote control reception: When a valid remote control signal is received, the LEDs indicate the dimmer function assigned to the signal by flashing.

Fault code: if one or more LEDs flash briefly every 5s, this means that the dimmer has been switched off due to power failure, overheating or short-circuit. This fault code display is cleared when the dimmer is next switched on.

Dimmer functions:

- ☀-●-● **1. Dim/switch:** The FD3 U1 in this case responds like a conventional pushbutton dimmer. When the button is briefly touched and released it switches the light on (with the last brightness) / off, and when the button is held down for longer it brightens/dim the light
- ☀-● **2. Maximum brightness:** switches over between most recent and max. brightness (in Central control mode only to max. brightness).
- ☀-☀-● **3. Brighten:** increases the brightness while the button is pressed.
- ☀ **4. Dim:** reduces the brightness while the button is pressed.
- ☀-●-☀ **5. Switch on:** switches the light on with the last adjusted brightness.
- ☀-☀ **6. Switch off:** switches the light off
- ☀-☀-☀ **7. Dim/switch max:** as per function 1, but switches on with full brightness instead of last adjusted brightness.

Address code programming:

All transmitters and receivers are factory-set to the following default address:



In the factory-set state, the FD3 U1 responds on channel 1 to the default address with "Dim and switch" dimmer function, which is also assigned to the local pushbutton. Programming is only required if another transmitter address is set, a different channel has to be used or if other dimmer functions are required.

Programming instructions:

- Press and release the Prog. button repeatedly until the dimmer function you wish to program is displayed by LEDs 1-3.
- Now press the desired button on the transmitter or the local pushbutton until the LEDs start flashing (the remote control code or local pushbutton has been understood and saved).
- Repeat this process to program additional dimmer functions or hold down the Prog. button (>1s) to exit programming mode. Programming mode is also automatically terminated if the Prog. button remains unused for 20s.

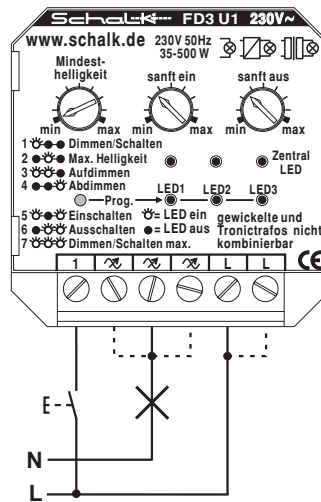
To implement a Central control system, each dimmer function can be allocated a 2nd address code. For this purpose, the Prog. button must be briefly pressed and released repeatedly until the "Central" LED is lit and LEDs 1-3 display the dimmer function to be programmed.

Each address code can only be assigned to a single dimmer function. If an address code that has already been programmed is assigned to another dimmer function, the previous programming is automatically deleted in order to prevent malfunctions.

Reset device:

By holding down the Prog. button for longer than 10s, the system is reset, and therefore all programmed functions are cleared. Reset is indicated by all the LEDs flashing 5 times. After the reset, the device is returned to the factory setting and responds to the default address on channel 1 or to the local pushbutton with the "Dim and switch" function.

TYPICAL APPLICATION



The two L terminals are interconnected inside the device, as are the three terminals for the lamp wire. If the dimmer is installed in a location with poor heat dissipation, this can be improved by additionally wiring up the other terminals.

Potentiometer functions



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.



Soft On / Soft 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. With the "soft on" and "soft off" controls, this effect can be adjusted to personal taste. When the potentiometer is set to min., the light is switched very rapidly with an abrupt change, whereas at the max. position the light is switched slowly and very softly.

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)!

The efficiency of conventional and Tronic transformers must be taken into account. The maximum power permitted for the dimmer relates to the accepted primary power of the transformer. Tronic transformers must be approved for dimmer operation with trailing-edge phase control (reverse phase control) and must have sufficient interference suppression.

Installation instructions:

When the dimmer is operated, heat is generated due to the dimmer's connected power (power consumption). If this heat cannot be adequately dissipated, the input power must be reduced:

- 10% for installation in wood, plasterboard or hollow wall
 - 20% for installation of several adjacent dimmers
 - 10% per 5° above the specified ambient temperature 30°C.
- Heat dissipation is improved by connecting more wires to the dimmer.

If the max. permissible operating temperature is exceeded, the FD3 U1 starts slowly dimming the load. If the overheating is not adequately stopped, the load is then switched off. The light media may only be switched off by the dimmer. No switch may be installed between the dimmer output and the light media.