

ES-DIM

Electronic Dimmer



Features

- ☺ Supply voltage 20 to 36V DC
- ☺ Output: 8 to 28V DC, max. 1A
- ☺ Input for light sensor for automatic brightness control
- ☺ Safety circuit
- ☺ Low power losses
- ☺ Short circuit proof
- ☺ Protection against pole inter-changing
- ☺ Space saving

Application

The electronic dimmer *ES-DIM* is used to control the brightness of light sources, like e. g. signalling lamps, and of displays. Typical applications are control desks/consolas of vehicles (e. g. trains, ships) in which visibility to outside must not be restricted by too bright light sources especially at bad day light conditions.

In order to lower the lamp voltage no resistor is required. Thus the power loss is reduced considerably and the brightness of the lamps is independent of the number of switched on lamps.

Output

The load to be dimmed (e. g. incandescent lamps, LED's with resistor) has to be connected to + (terminal 9) and -H (terminal 6, 7, 8). The supply current of the load must not exceed 1A at the highest output voltage. Increased supply current for a short time at switching on of cold incandescent lamps is permitted. The output is short circuit proof.

The minimum brightness which is reachable by an external potentiometer or a light sensor is to be adjusted with a small screw driver at the front of the *ES-DIM*. The *ES-DIM/F* has this minimum brightness internally fixed, but it can be increased by an external potentiometer.

With the most faults of the unit a safety circuit switches the output completely on. That means the output voltage equals the supply voltage in the case of a fault!

Pay attention to the right poling when using LED's!

Light sensor

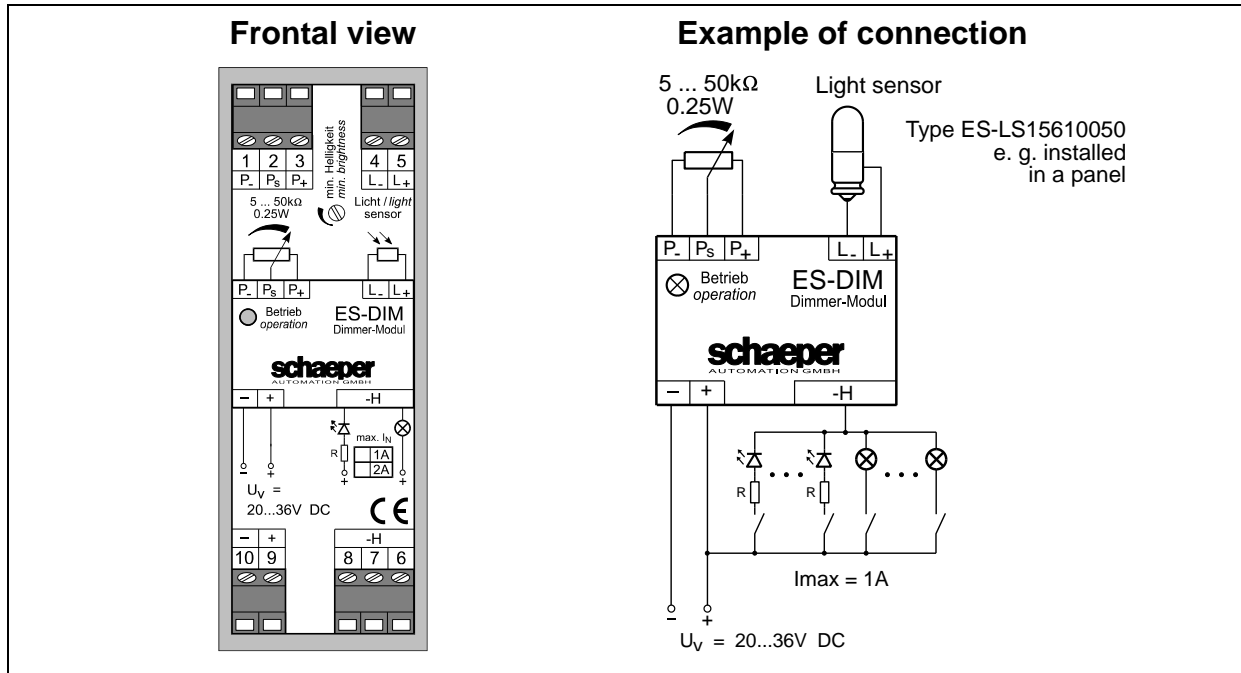
The sensor measures the ambient brightness and is connected to L+ (terminal 5) and L- (terminal 4). With this it is to give heed to the correct poling (s. example of connection).

The output voltage of the dimmer decreases with reduced ambient brightness, i. e. the signalling lamps are getting darker until the adjustable minimum brightness is reached. The light sensor *ES-LS15610050* fits into a common signalling device with a lamp socket T1¼ MG5,7 and should be installed in the panel to be dimmed. Alternatively, the light sensor *ES-T10x28BA9s.1* with socket BA9s can be installed.

External potentiometer

An external potentiometer for the manual setting of brightness can be connected to P+, Ps und P- (terminals 3, 2, 1). At simultaneous usage of a light sensor it determines the reachable minimum brightness.

The nominal value of the resistor has to be 5kΩ to 50kΩ at a power rating of min. 0.25W.



Unit versions

type	function
ES-DIM/B	Minimum brightness is adjustable at the front of the unit with a build-in trimmer
ES-LS15610050	Light sensor, type of socket T1¼ MG 5,7
ES-T10x28BA9s.1	Light sensor, type of socket BA9s

Technical Data

Supply voltage: Terminals +(9) and -(10)	$U_V = 20 \dots 36V$ DC, Power loss: max. 2W Ripple <5%
Output: between terminals +(9) and -H(6, 7, 8)	$U \approx 8 \dots U_V - 1V$, max. 28V DC, adjustable $I_{max} = 1A$, proof of short circuit
Input light sensor: Terminals L+(5) and L-(4)	only for light sensor <i>ES-LS15610050</i> or <i>ES-T10x28BA9s.1</i> Max. cable length 3m. (Attention: Input must not be short-circuited!)
Input potentiometer: terminals P+(3), Ps(2) and P-(1)	for setting of brightness by external potentiometer, 5kΩ to 50kΩ, 0.25W, max. cable length 3m.
EMC-Directive: CE	<i>Emission:</i> According to EN 50081-1, 1993 (Residential, commercial) and EN 55022 <i>Immunity:</i> According to EN 50082-2, 1995 (Industrial environment) and EN 61000-4-2, -3, -4, -6 The DC supply input (terminals 9, 10) must be protected with a suitable over voltage limiter for cable length longer than 10m.
Ambient temperature:	-20 ... +50 °C, no condensation (operation) -20 ... +85 °C (storage)
Housing:	L = 40mm, W = 111mm, H = 35mm with snap-on fastening for DIN EN mounting rails
Connection terminals:	Screw terminals 1 x 1.5mm ² solid or stranded wire
Behaviour in fire:	Housing and terminals: according to UL94: V-2 Flame-inhibiting and self-extinguishing according to VDE
Mass:	approx. 60g