



**Control unit**  
**1gang**  
**1 - 10 V Eb**

**Order No.:**  
**75331003**

The control unit 1gang receives instabus telegrams and converts these to address fluorescent lighting that is equipped with an electronic ballast unit and an interface of 1... 10V. The control output has a load capacity of 50 mA. The lighting group is connected to a galvanically separated closer contact 230V/10A to switch it on/off.

**Product family:** Illumination  
**Product type:** Dimmer

**Database**  
**search path**

EIB supply voltage: from system with 24 V DC (+6 / -4 V), typically 150mW  
Mains supply voltage: 230 V AC  
Nominal voltage at output: 230 V  
Nominal current: 10 A, Ohmic

**General**  
**Technical**  
**Data**

Switching capacity: Resistant load 2300W  
Filament bulbs 2000W  
LV halogen, normal transformer 500 VA,  
LL, duo 2320 W  
LL, unknown 1000 W

**Control unit without status indication 300412**

**Application**  
**summary:**

### Description of application

Once a switching telegram is received, the actuator assumes a 1 Bit value status. A dimming telegram is executed according to the encoding for a 4 Bit value, and depending on the parameter settings (255 dimming levels). The corresponding dimmer lever is addressed upon receiving a brightness value (8 Bit). The dimming process is linear in time and can be set to different times in 3 separated areas.

Number of associations: max. 5  
Number of group addresses: max. 5  
Number of objects: 1 switching object (1 Bit)  
1 dimming object (4 Bit)  
1 value object (1Byte)

**Group**  
**address and**  
**object**  
**associations**

**Objects**

<b>Obj.</b>	<b>Name</b>	<b>Function</b>	<b>Type</b>	<b>Prio</b>	<b>Flag</b>
0	Actuator	Switching	1 Bit	Auto	C W
1	Actuator	Dimming	4 Bit	Auto	C W
2	Actuator	Brightness value	1 Byte	Auto	C W

<b>General</b>	
Brightness at switching on: Switch onto	Basic brightness, 10 %, 20 %, 30 %, 40 %, 50 %, 60 %, 70 %, 80 %, 90 %, <b>max. brightness</b>
Behaviour at receiving a value	<b>Dim on brightness value</b> Jump on brightness value
<b>Dimming speed</b>	
Time between 2 of 255 dim steps base	<b>0.5 msec</b> , 8.0 msec, 130 msec, 2.1 sec, 33 sec,
At beginning of the 1st time range factor (3...255)	3.. <b>32</b> ..255
At end of the 1st time range factor (3...255)	3.. <b>32</b> ..255
At end of the 2nd time range factor (3...255)	3.. <b>16</b> ..255
At end of the 3rd time range factor (3...255)	3.. <b>16</b> ..255
<b>Partitioning of the 3 brightness ranges</b>	
Limit between range 1 and 2	10 %, 15 %, 20 %, 25 %, 30 %, 35 %, 40 %, <b>45 %</b> , 50 % brightness
Limit between range 2 and 3	50 %, 55 %, 60 %, 65 %, 70 %, <b>75 %</b> , 80 %, 85 %, 90 %, 95 % brightness

#### Description of parameters:

The parameterised status is assumed upon receiving a switching command. The lowest dimming level is the basic brightness (value 1 of 255 possible levels, approx. 0.4% of the total area).

The processing of brightness values is prepared in Object 2: If the actuator receives a telegram with a corresponding address (e.g. from the light scene push button), then the brightness encoded in the value field is set according to the parameters: Started running means that the value was set without a time delay. The value set for the time is dimmed by the time set in the parameters.

The dimming of fluorescent lamps can be divided over the entire area linearly into up to three different areas with varying time responses (*see Appendix for examples*). The basis for all the following factors can be parameterised similarly. Different time responses for the three areas are set using the following settings for the area limits. This, for example, it is possible to run through the upper dimming area quickly, and to set extremely fine activation segments in the lower area. The three areas can also be defined from their limits. The gradient differences in the critical areas are approximated in order to have a harmonic and flowing dimming process.

#### Description of application

Once a switching telegram is received, the actuator assumes a 1 Bit value status. A dimming telegram is executed according to the encoding for a 4 Bit value, and depending on the parameter settings (255 dimming levels). The corresponding dimmer lever is addressed upon receiving a brightness value (8 Bit). The dimming process is linear in time and can be set to different times in 3 separated areas. **The actuator sends its switching status to the system after a change in the switching status.**

(See Application 300412 for parameters and descriptions).

If the *transmit Flag* (Transfer flag) is set in the *Switch* object, then a telegram with the content "*Switch object dimmer On/Off*" is set to the system after start up or after dimming a lighting unit. The **first** group address in the switching object (sending) is active as the target address. **Only one flag may be set within a group!**

All the bus subscribers with a corresponding address will be switched on.

Thus, the actuator becomes the source of the telegram. If several dimming actuators with a corresponding group address are linked within the switching object, then these will be switched, e.g. to 30%, according to the parameters.

Dimming OFF is not possible as the basic brightness restricted the lowest dimmable area.

Electronic ballast devices with a control interface of 1 ... 10 V are suitable to be connected. This generates a constant direct current, which leads to the controller via 2 cores (+/-) and uses an

**Brightness  
at sw. on:  
Switch onto**

**Behaviour at  
receiving a  
value**

**Beginning /  
End of the x  
time range  
combined  
with a  
breakdown  
of the ranges**

**Setting the  
"T" flag  
(Transfer  
flag):**

**Sending  
group  
addresses**

**Function  
principle  
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Part 6**

electronic potentiometer to generate a voltage between 1 and 10 V. In electronic ballast devices, an operating frequency is set based on the voltage.

The maximum output of the control output equals 500 mW (signal current 50 mA). Because of the power consumption of individual electronic ballast units, the total of the individual consumption must be defined to establish the maximum strength of the ballast unit that can be connected.

Example: 50 ballast devices Type Siemens:  $50 \times 1 \text{ mA} = 50 \text{ mA}$   
12 ballast devices Type Helvar:  $12 \times 4 \text{ mA} = 48 \text{ mA}$

Because of the varying, non-standardised 1 .. 10 V interface configurations, the use of a brand name device is recommended. This will help to achieve homogenous lighting. All lighting devices have a similar dimming response.

The subsequent installation in lamps is not allowed. When working on a project, we recommend looking at the responsible lighting device manufacturers. Some brands handle installation, so that lighting equipment that complies with VDE requirements is available within the building.

#### **Combining switching output with other operational equipment:**

If the technical data is taken into consideration, it is naturally possible to connect all-purpose lights combined with fluorescent tubes to the switching output. Combining fluorescent tubes and low voltage halogen with a Tronic transformer cannot be recommended because of the resulting switch-on peaks.

The adjustment screw attached to the device allows the individual setting of the desired basic brightness. Dimming or value transmission below the set basic brightness will not be effective.

**Driving  
power**

**Types of  
electronic  
ballast**

**Installation  
of lights**

**Adjustment  
screw for  
basic  
brightness**