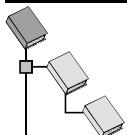




The Universal dim actuator 2gang operates according to the phase control or cut on principle and enables the switching or dimming of filament bulbs, high voltage halogen lamps as well as low voltage halogen lamps via conventional transformers and Tronic transformers. The unit automatically measures the properties of the connected load and sets the appropriate dimming procedure.

Database structure:



Gebr. Berker

- Berker
- Illumination
- Dimmer

Technical Data

Measurements:

Width: 4 units, 70 mm, Height: 90 mm, Depth: 58 mm

Safety class: IP 20

Insulation voltage: According to VDE 0829 Part 230

Test symbol: EIB

Ambient temperature: 5 °C to +45 °C

Storage/Transport temperature: 25 °C to +70 °C (storage at temperatures above +45 °C shortens service life)

Max. Housing temperature: $T_c = +75$ °C

Installation position: Random

Min. clearance: None

Fixing method:

Supply *instabus* EIB

Voltage:

24 V DC (+6 V / 4 V)

Power consumption:

150 mW typically

Connection:

instabus connection and branch off terminals

External Supply

Voltage:

Via connected external conductor (two conductor technology)

Connection:

Screw type terminals: 0.2 – 4 mm² one wire

2 x 0.2 – 2.5 mm² one wire

0.75 – 4 mm² fine wire without cable end sleeve

0.5 – 2.5 mm² fine wire including cable end sleeve

Response in case of bus voltage failure

Bus Voltage only:

Dim actuator switches off

Mains Voltage only:

Dim actuator switches off

Bus and Main Voltage:

Dim actuator switches off

Response after restoring of bus voltage

Bus Voltage only:

Software dependent

Mains Voltage only:

Sets brightness based on object value

Bus and Main Voltage:

Software dependent

Input:

Output:

Number

2

Power MOS FET, phase control or cut on control

230 V AC

2 x 1 A

50 W per channel (if channel is wired!)

max. 4,5 W (both channels)

Screw type terminals: 0,2 – 4 mm² one wire

2 x 0,2 – 2,5 mm² one wire

0,75 – 4 mm² fine wire without cable end sleeve

0,5 – 2,5 mm² fine wire including cable end sleeve

Application summary:

- Dimming 301501

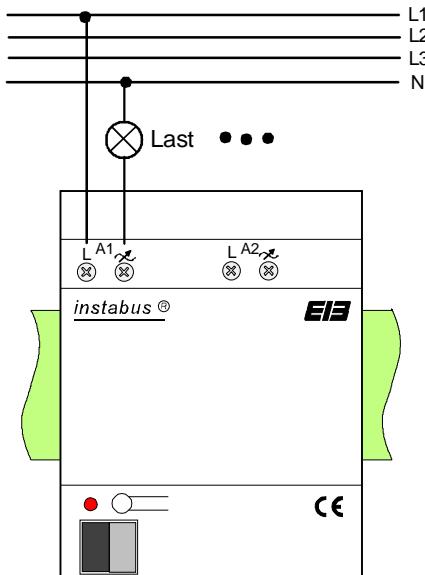


Switching capacity

Resistance load:	50 to 250 W
Filament bulbs:	50 to 250 W
HV halogen:	50 to 250 W
LV halogen, conventional transformer:	50 to 250 VA
LV halogen, Tronic transformer:	50 to 250 VA

Connection diagram:

Terminal configuration:

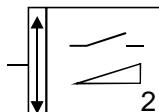


Comments on hardware:

Protection against short circuits and excess temperatures is integrated within the dimmer. In the case of a short circuit, the load is switched off after 8 seconds during phase control operation and after 100 msec during cut off operation. Restarting occurs through a simple operation. If the short circuit still exists, then the load is once again switched off, as described earlier. The load is also switched off if the ambient temperature is too high. It restarts after it has cooled down.

Various external conductors can also be connected.

The inductive load properties (e.g. conventional transformers) and capacitive load properties (e.g. Tronic transformers) may not be switched together at any output port, but the simultaneous operation of the inductive loads on channel 1 and the capacitive loads on channel 2 is possible! In the case of a combined load with conventional transformers, the proportion of the resistant load may not exceed 50%.

Software description			
ETS search path:			ETS symbol:
Illumination / Dimmer / Universal dim actuator 2gang RMD			
AST Type	01 Hex	1 Dez	reserved
Applications:			
No.	Brief description:	Name:	Version:
1	Dimming with time functions, revertive signal, blocking	Dimming 301501	0.1
Application: 1. Dimming 301501			
Executable from mask version: 1.2			
Number of addresses (max):	34	Dynamic Table Management	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Number of assignments (max):	28	Maximum Table Length	62
Communications objects: 18			
Object	Name	Function	Type
0	Output 1	Switching	1 Bit
1	Output 2	Switching	1 Bit
2	Output 1	Dimming	4 Bit
3	Output 2	Dimming	4 Bit
4	Output 1	Brightness value	1 Byte
5	Output 2	Brightness value	1 Byte
6	Output 1	Revertive signal switching	1 Bit
7	Output 2	Revertive signal switching	1 Bit
8	Output 1	Revertive signal value	1 Byte
9	Output 2	Revertive signal value	1 Byte
10	Output 1	Blocking	1 Bit
11	Output 2	Blocking	1 Bit
12	Output 1	Light scene extension	1 Byte
13	Output 2	Light scene extension	1 Byte
14	Output 1	Short circuit message	1 Bit
15	Output 2	Short circuit message	1 Bit
16	Output 1	Open circuit message	1 Bit
17	Output 2	Open circuit message	1 Bit
Description of objects			
• Object 0, 1:	Switching	1 Bit object to switch a load	
• Object 2, 3:	Dimming	4 Bit object to change relative brightness between 0 and 100 %	
• Object 4, 5:	Brightness value	1 Byte object to set brightness values between 0 and 255	
• Object 6 - 9:	Revertive signal	1 Bit object to feedback switching and value status of dim actuator	
• Object 10, 11:	Blocking	1 Bit object to block dimming actuator	
• Object 12, 13:	Light scene extension	1 Byte object to call up or save light scenes 1-8	
• Object 14, 15:	Notification of short circuit	1 Bit object to sent a short circuit message to the EIB	
• Object 16, 17:	Notification of open circuit (load failure)	1 Bit object to send a load failure message to the EIB	

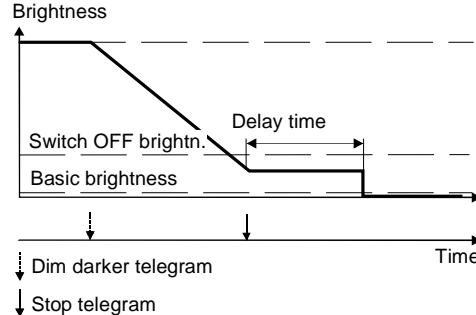
Functional scope

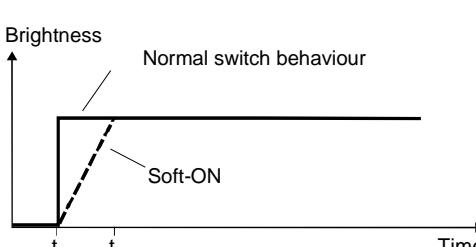
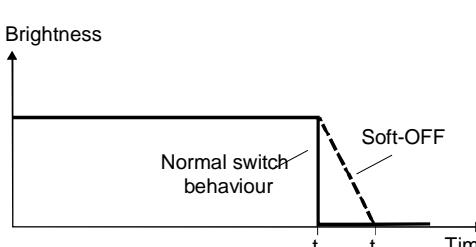
- Dimming and switching of lighting devices
- Switch on and dimming responses can be set via parameters
- Revertive signal (feedback) for switching status possible via objects 6 and 7
- Revertive signal (feedback) for dimming values possible via objects 8 and 9
- Parameters available for "Soft switch-ON", "Soft switch-OFF" and timed dimmer
- Start up dimming or brightness values
- Possible to have timed delayed OFF when reaching or not reaching a limiting brightness value
- Overload detection
- Light scene operation possible (up to eight brightness values can be called up as light scenes)
- Blocking operation can be activated via an object with parameterisable brightness values at the beginning and end of the blocking function
- Responses of the dim actuator after bus voltage is restored can be set

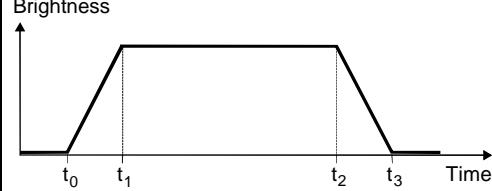
Description of Parameters

Description	Values:	Comments:
 Output 1		
Basic brightness (brightness value = 1) (depends on illumination)	Level 1 Level 2 Level 3 (Standard bulbs) Level 4 Level 6 (Standard halogen) Level 6 Level 7 Level 8	Adapt basic brightness (lowest dimming level) to the local situation. Level 1 denotes the lowest basic brightness level.
Behaviour at bus voltage return	OFF Basic brightness 10% 20% 30% 40% 50% 60% 70% 80% 90% Maximum brightness Brightness value in case of bus voltage failure No change	Response of device after restoration of bus voltage can be set in parameters. The brightness value in case of a bus voltage failure is set in the setting "Brightness value in case of bus voltage failure". The current brightness value is retained for the setting "no change".
Brightness at switching ON: Switch on	Basic brightness 10% 20% 30% 40% 50% 60% 70% 80% 90% Maximum brightness Brightness value before last switch off	Defines the start up brightness after receiving an ON telegram. The brightness value prior to the last switching off is set for the setting "Brightness value before last switch off".

Behaviour at value reception	Jump on brightness value Dim on brightness value	Defines whether a received brightness value will be dimmed up or started up directly.	
Time between 2 of 255 steps base	0.5 msec 8 msec 130 msec	2,1 sec 33 sec	Establishes the time base that will apply for the dimming of 2 of the 255 dimming steps. Changing the timed length of the dimming step sets the dimming speed. Time = Factor x Base
Time between 2 of 255 steps factor (1...255)	1...255, 24		Time factor for the time between two dimming levels. Preliminary setting: 24 x 0.5 msec = 12 msec

 Output 1: Additional functions  Output 2 see always Output 1!		
Timer/Soft-ON and soft-OFF function ?	YES NO	Defines whether Soft and/or timed dimmer functions are to be enabled.
Automatic switch OFF function ?	YES NO	Defines whether the control unit will switch off after receiving a constant brightness that equals or is lower than the settable switch off brightness after a parameterisable time. 
Blocking function?	YES NO	The control unit can be blocked via the bus, i.e. an active brightness value remains constant while the block is active. Establishes whether the Blocking function is to be enabled.
Light scene function ?	YES NO	Establishes whether the Light scene function is to be enabled.
Revertive signal for switching object ?	YES NO	Defines whether the switching status will be acknowledged (feedback).
Revertive signal for brightness value ?	YES NO	Defines whether the brightness value status will be acknowledged (feedback).
Message at short circuit operation ?	YES NO	Establishes whether a short circuit message is to be sent.
Message at open circuit operation ?	YES NO	Establishes whether a open circuit (load failure) message is to be sent.

Output 1/2: Timer/Soft-ON and Soft-Off			
Soft switch-ON function ?	YES NO		Defines whether the Soft ON function will be switched on.
Soft switch ON – Time for one dim step, base	0.5 msec 8 msec 130 msec	2.1 sec 33 sec	Setting for slowed down switch ON: dimming up to parameterised switch ON brightness (not retriggerable).
			 <p>$t_1 - t_0$: time for Soft ON</p>
Soft switch ON – Time for one dim step, factor (0...255)	1...255, 24		<p>Time basis for a dimming level during Soft ON Time = Base x Factor</p> <p>Time factor for a dimming level during Soft ON</p> <p>Preliminary setting: $24 \times 0.5 \text{ ms} = 12 \text{ ms}$</p>
Soft switch-OFF function ?	YES NO		Defines whether the Soft OFF function will be switched on.
Soft switch OFF – Time for one dim step, base	0.5 msec 8 msec 130 msec	2.1 sec 33 sec	Setting for slow switching off: dim down to switch off (Cannot be retriggered).
			 <p>$t_3 - t_2$: time for Soft OFF</p>
Soft switch OFF – Time for one dim step, factor (1...255) (1 = no function)	1...255, 24		<p>Time basis for a dimming level during a dimming level with Soft OFF Time = Basis x Factor</p> <p>Time factor for a dimming level with Soft OFF</p> <p>Preliminary setting: $24 \cdot 0.5 \text{ ms} = 12 \text{ ms}$</p>

Activate time dimmer function?	YES NO	<p>A timed switching function starts when the timed dimmer is started up. After the pre-set delay time has elapsed, the control unit switched off automatically (retriggerable). Soft ON and Soft OFF functions can be activated.</p>  <p>$t_1 - t_0$: Time for Soft-OFF (optional) $t_2 - t_1$: Time between ON and OFF $t_3 - t_2$: Time for Soft-OFF (optional)</p>
Time between switch-ON and switch-OFF, base	0.5 ms 8 ms 130 ms	Time delay = Basis x Factor
Time between switch-ON and switch-OFF, factor (1...255)	1...255, 80	<p>Time delay = Basis x Factor Preliminary setting: $80 \cdot 130 \text{ ms} = 10.4 \text{ sec}$</p>

Output 1/2: Automatic switch OFF		
Switch OFF delay base	0.5 ms 8 ms 130 ms	Basis for the switch off delay. Time delay = Basis x Factor
Switch OFF delay factor (1...255)	1...255, 10	Factor for the switch off delay. Preliminary setting: $10 \cdot 130 \text{ ms} = 1.3 \text{ s}$
Switch OFF delay at brightness value lower as (1...255)	1...255, 1	Upon reaching a constant brightness that equals or is lower than the switch off brightness, the control unit switches off after a time delay that can be set in the parameters.

 Output 1/2: Blocking		
Polarity of the blocking objects	Not inverted (0 = enabled, 1 = disabled) Inverted (0 = disabled, 1 = enabled)	The dimming actuator is blocked when the value of the blocking object = 1. The dimming actuator is blocked when the value of the blocking object = 0.
Brightness at beginning of blocking	OFF Basic Brightness, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90% Maximum Brightness No change Brightness value prior to last switch off	Establishes which brightness value will be active at the beginning of blocking. The current brightness value set right now is retained with the setting "no change". The brightness value set prior to the last switch off will be set for the setting "Brightness value prior to last switch off". Defines brightness value that will be set at end of blocking.
Brightness at end of blocking	OFF Basic Brightness, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, Maximum brightness No change Brightness value prior to last switch off Tracked brightness value	 The current brightness value set right now is retained with the setting "no change". The brightness value set prior to the last switch off will be set for the setting "Brightness value prior to last switch off". Bus telegrams are registered and the brightness value is retained for the setting "tracked brightness value" even while the block is active. The latest registered brightness telegram is executed at the end of the block.

 Output 1/2: Light scenes		
Brightness for light scene 1	OFF Basic Brightness, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, Maximum brightness	Brightness value setting during lighting arrangement 1
Brightness for light scene 2 – 8	See lighting arrangement 1	
Memory function?	YES NO	Defines whether a brightness set in the control unit will be saved as a lighting arrangement.

Notes on software

• Blocking Function (Objects 10 + 11)

The dimming actuator can be blocked via the bus so that the preset brightness value remains constant while the block is active. The actuator can be set to a parameterised brightness at the beginning and end of the block (also refer to description of parameters for the Blocking Function).