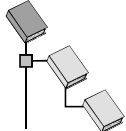




The Universal dim actuator 2gang operates according to the phase control or cut on principle and enables the switching or dimming of filament bulbs, high voltage halogen lamps as well as low voltage halogen lamps via conventional transformers and Tronic transformers. The unit automatically measures the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

Database structure:



Gebr. Berker

- Berker
- Illumination
- Dimmer

Application summary:

- Dimming 301501



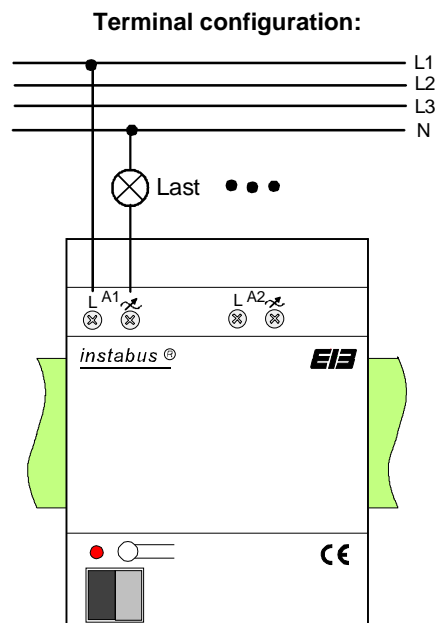
Technical Data

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:	Snap onto DIN rail
Supply <i>instabus</i> EIB	
Voltage:	24 V DC (+6 V / 4 V)
Power consumption:	150 mW typically
Connection:	<i>instabus</i> connection and branch off terminals
External Supply	Via connected external conductor (two conductor technology)
Voltage:	
Connection:	Screw type terminals: 0,2 – 4 mm ² one wire 2 x 0,2 – 2,5 mm ² one wire 0,75 – 4 mm ² fine wire without cable end sleeve 0,5 – 2,5 mm ² 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
Switch type:	Power MOS FET, phase control or cut on control
Nominal voltage:	230 V AC
Rated current:	2 x 1 A
Minimum load:	50 W per channel (if channel is wired!)
Total dissipation:	max. 4,5 W (both channels)
Connection:	Screw type terminals: 0,2 – 4 mm ² one wire 2 x 0,2 – 2,5 mm ² one wire 0,75 – 4 mm ² fine wire without cable end sleeve 0,5 – 2,5 mm ² fine wire including cable end sleeve

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:

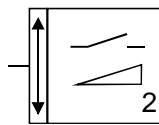


Comments on hardware:

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%.

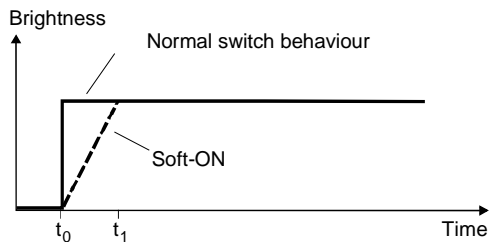
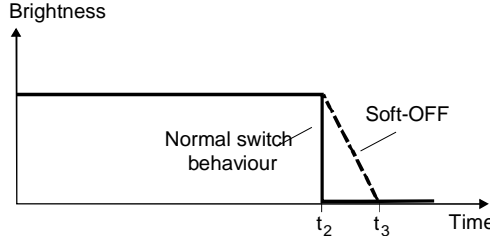
Software description				
ETS search path:			ETS symbol:	
Illumination / Dimmer / Universal dim actuator 2gang RMD				
AST Type	01 _{Hex}	1 _{Dez}	reserved	
Applications:				
No.	Brief description:	Name:	Version:	
1	Dimming with time functions, revertive signal, blocking	Dimming 301501	0.1	
Application: 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	Flag
<input type="checkbox"/> 0	Output 1	Switching	1 Bit	C W
<input type="checkbox"/> 1	Output 2	Switching	1 Bit	C W
<input type="checkbox"/> 2	Output 1	Dimming	4 Bit	C W
<input type="checkbox"/> 3	Output 2	Dimming	4 Bit	C W
<input type="checkbox"/> 4	Output 1	Brightness value	1 Byte	C W
<input type="checkbox"/> 5	Output 2	Brightness value	1 Byte	C W
<input type="checkbox"/> 6	Output 1	Revertive signal switching	1 Bit	C T
<input type="checkbox"/> 7	Output 2	Revertive signal switching	1 Bit	C T
<input type="checkbox"/> 8	Output 1	Revertive signal value	1 Byte	C T
<input type="checkbox"/> 9	Output 2	Revertive signal value	1 Byte	C T
<input type="checkbox"/> 10	Output 1	Blocking	1 Bit	C W
<input type="checkbox"/> 11	Output 2	Blocking	1 Bit	C W
<input type="checkbox"/> 12	Output 1	Light scene extension	1 Byte	C W
<input type="checkbox"/> 13	Output 2	Light scene extension	1 Byte	C W
<input type="checkbox"/> 14	Output 1	Short circuit message	1 Bit	C T
<input type="checkbox"/> 15	Output 2	Short circuit message	1 Bit	C T
<input type="checkbox"/> 16	Output 1	Open circuit message	1 Bit	C T
<input type="checkbox"/> 17	Output 2	Open circuit message	1 Bit	C T
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".

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 2.1 sec 8 msec 33 sec 130 msec	Setting for slowed down switch ON: dimming up to parameterised switch ON brightness (not retriggerable).
		
		$t_1 - t_0$: time for Soft ON
		Time basis for a dimming level during Soft ON Time = Base x Factor
Soft switch ON – Time for one dim step, factor (0...255)	1...255, 24	Time factor for a dimming level during Soft ON
		Preliminary setting: $24 \times 0.5 \text{ ms} = 12 \text{ ms}$
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 2.1 sec 8 msec 33 sec 130 msec	Setting for slow switching off: dim down to switch off (Cannot be retriggered).
		
		$t_3 - t_2$: time for Soft OFF
		Time basis for a dimming level during a dimming level with Soft OFF Time = Basis x Factor
Soft switch OFF – Time for one dim step, factor (1...255) (1 = no function)	1...255, 24	Time factor for a dimming level with Soft OFF
		Preliminary setting: $24 \cdot 0.5 \text{ ms} = 12 \text{ ms}$

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".
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	Defines brightness value that will be set at end 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". 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).