Product designation:	**Three-channel 1-10 V control unit compact**
Design:	DIN-rail type (REG)
Article no.:	**1019 00**
ETS search path:	Gira Giersiepen / Lighting / Dimmer / 1-10 V control unit compact REG

Functional description:

The control unit receives telegrams via the instabus EIB and switches or dims fluorescent lamps in conjunction with electronic ballasts. During the dimming process, the electronic ballasts are controlled via a 1-10 V interface. The switching function is ensured by a relay contact switching the supply voltage to the electronic ballasts. The relay contact can also be actuated manually without affecting the bus.
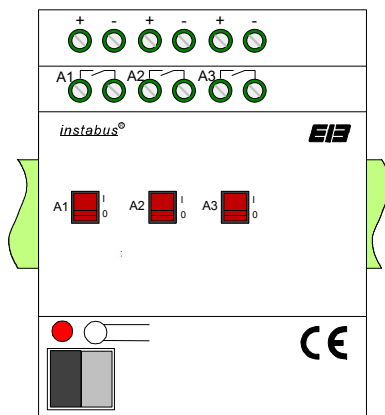
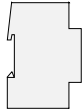| Illustration:	Dimensions:	Controls:
	Width: 4 modules, 70 mm Height: 90 mm Depth: 58 mm	1 Programming button 1 Programming LED (red) 3 Slide switches for manual control of the relays

Technical characteristics

External supply	---
Supply of instabus EIB	
voltage:	21 – 32 V DC SELV
power consumption	max. 240 mW (I = 10 mA)
connection:	instabus connecting and branch terminal
Input	
number:	3
signal voltage:	1-10 V
signal current:	max. 100 mA per channel
	(1 Insta electronic ballast approx. 0.8 mA, 1 Siemens electronic ballast: approx. 1 mA, 1 Helvar electronic ballast: approx. 4 mA)
signal duration:	continuous
connection:	screw-type terminals:
	0.5 – 4 mm² single wire and stranded without ferrule
	0.5 – 2.5 mm² stranded with ferrule
length of input line:	max. 500 m bei 0.5 mm²

instabus EIB System

Actuator

Output
  manufacturer of relay: Gruner
  type of relay: 707 L: 1A   in acc. with DIN VDE 0435
  number: 3
  type of switch: n.o., potential-free relay contact
  max. switched voltage: 230 V AC +/- 10 % 50 Hz
  max. rated current: 16 A / AC-1; 10 A / AC-3
  max. inrush current: 400 A, 150 µs / 200 A, 600 µs
  connection: screw-type terminals:
                                       0.5 – 4   mm²   single wire and stranded without ferrule
                                       0.5 – 2.5   mm²   stranded with ferrule

  Switching capacity
    resistive loads: 2500 W
    capacitive loads: 1100 W / 140 µF
    fluorescent lamps with   type-dependent (because of different inrush currents)
    electronic ballast: e.g.:   1 to max. 15 Insta electronic ballasts TC 1 – 10 V for one lamp
                                           1 to max. 12 Insta electronic ballasts TC 1 – 10 V for two lamps

---

Response on bus voltage failure
  bus voltage only: 1-10 V input increasing applied voltage to 10 V relay response
                                   dependent on parameters
  mains voltage only: control voltage at 1-10 V input non-defined relay status same as before
                                   mains voltage failure
  bus and mains voltage: control voltage at 1-10 V input non-defined relay response dependent
                                   on parameters.

Response on voltage return
  bus voltage only: dependent on parameters
  mains voltage only: control unit sets brightness to object value
  bus and mains voltage: dependent on parameters
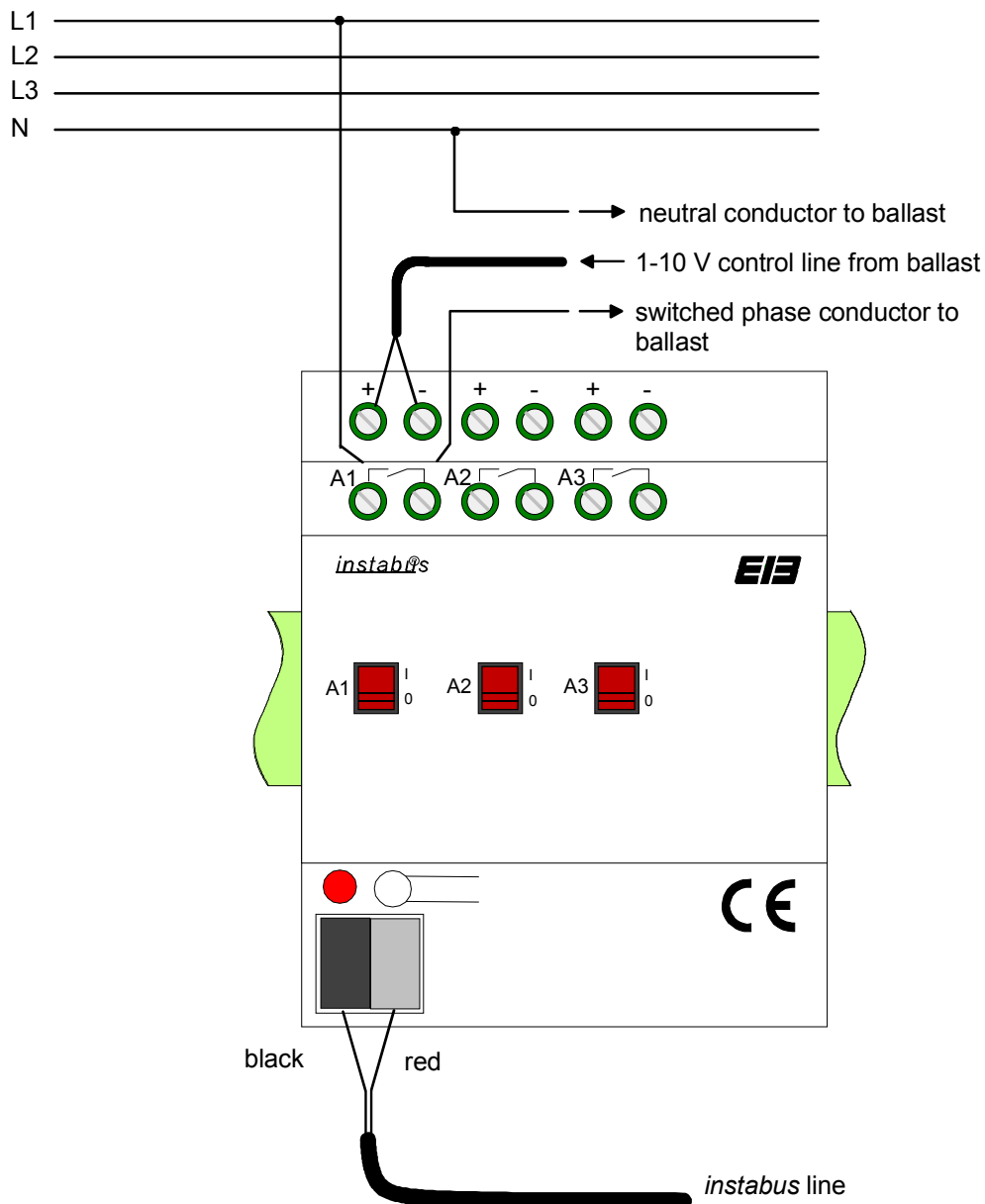Response to change of polarity of control voltage breaks down to approx. 0.6 V; connected electronic
control voltage   ballasts shut off or set lighting to minimum brightness.

Type of protection: IP 20
Mark of approval: EIB
Ambient temperature: -5 °C ... +45 °C
Storage / transport temperature: -25 °C ... +70 °C (storage above + 45 °C reduces the service life)
Max. housing temperature: T_C = +75 °C
Mounting position: any
Minimum spacings: none
Type of fastening: snap-fastening on DIN rail (no data rail required)

GIRA

Wiring diagram: **Terminals:**

L1

L2

L3

N

neutral conductor to ballast

1-10 V control line from ballast

switched phase conductor to ballast

+   -   +   -   +   -

A1   A2   A3

instabus   EIB

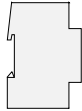A1   I / 0   A2   I / 0   A3   I / 0

CE

black   red

instabus line

Hardware information:

- The device permits connection of different phase conductors.

- Relay actuation effected with the slide switches is not registered by the software. An output disabled via the bus can therefore nevertheless be controlled by hand.
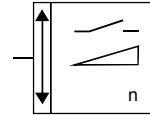
instabus EIB System

Actuator

Software description:
ETS search path: ETS-symbol:

Gira Giersiepen / Lighting / Dimmer / Control unit 1-10 V compact REG

Applications:

Summarized description:	Name:	Date:	Page:	Database
Control unit with timing, checkback and disabling functions	Control unit 301801	06.04	5	10199190

GIRA

| Application: | **Control unit 301801** |

Scope of functions

- Dimming and switching of fluorescent lamps in conjunction with an electronic ballast or other dimmable 1-10 V devices

- Switch-on and dimming behaviour adjustable by means of parameters

- Checkback of switching status possible via objects 9, 10 and 11

- Active transmission of brightness value via brightness objects possible (set Ü flag)

- "Soft-ON", "Soft-OFF" and time dimmer parameterizable

- Dimming start at predefined brightness values

- Delayed shutoff when value drops below shutoff brightness

- Light-scene operation (recalling of up to eight internally stored brightness values as light-scenes)

- Disable mode can be activated via an object with parameterizable brightness value at the beginning and end of disabling

- Response of control unit after bus voltage failure and return adjustable

	Object		**Object description**
	0 - 2	Switching	1 bit object for switching of the load
	3 - 5	Dimming	4 bit object for relative brightness change between 0 and 100 %
	6 - 8	Brightness value	1 byte object for brightness setting between 0 and 255
	9 - 11	Switching checkback	1 bit object for switching status checkback of control unit
	12 - 14	Disabling	1 bit object for disabling of the control unit
	15 - 17	Light-scene extension	1 byte object for recalling or storing of light-scenes 1 - 8

instabus EIB System

Actuator
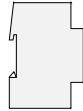
Number of addresses (max):	27	dynamic table handling	Yes ☒ No ☐
Number of assignments (max):	27	maximum length of table	54
Communication objects:	18		

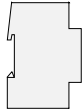| Object		Name	Function	Type	Flag
⬜↵	0	Output 1	Switching	1 bit	K, S, (L) *
⬜↵	1	Output 2	Switching	1 bit	K, S, (L) *
⬜↵	2	Output 3	Switching	1 bit	K, S, (L) *
⬜↵	3	Output 1	Dimming	4 bit	K, S, (L) *
⬜↵	4	Output 2	Dimming	4 bit	K, S, (L) *
⬜↵	5	Output 3	Dimming	4 bit	K, S, (L) *
⬜↵	6	Output 1	Brightness value **	1 byte	K, S, (L) *, (Ü) **
⬜↵	7	Output 2	Brightness value **	1 byte	K, S, (L) *, (Ü) **
⬜↵	8	Output 3	Brightness value **	1 byte	K, S, (L) *, (Ü) **
⬜↗	9	Output 1	Switching checkback	1 bit	K, Ü, (L) *
⬜↗	10	Output 2	Switching checkback	1 bit	K, Ü, (L) *
⬜↗	11	Output 3	Switching checkback	1 bit	K, Ü, (L) *
⬜↵	12	Output 1	Disabling	1 bit	K, S, (L) *
⬜↵	13	Output 2	Disabling	1 bit	K, S, (L) *
⬜↵	14	Output 3	Disabling	1 bit	K, S, (L) *
⬜↵	15	Output 1	Light-scene extension	1 byte	K, S, (L) *
⬜↵	16	Output 2	Light-scene extension	1 byte	K, S, (L) *
⬜↵	17	Output 3	Light-scene extension	1 byte	K, S, (L) *

*:   For objects marked (L), the current object status can be read out (set L flag!).

**:   With brightness value objects, the current brightness value is internally followed up. By setting the Ü flag, the brightness value can be transferred to the bus as an active value when a certain dimming level is reached

GIRA

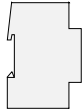| Parameters		
Description:	Value:	Remarks:
📁 Output 1		
Basic brightness (brightness value = 1) (depending on lamp)	level 1 (control voltage approx. 0.6 V) **level 2 (control voltage approx. 1.2 V)** level 3 (control voltage approx. 1.8 V) level 4 (control voltage approx. 2.4 V) level 5 (control voltage approx. 3.0 V) level 6 (control voltage approx. 3.6 V) level 7 (control voltage approx. 4.2 V) level 8 (control voltage approx. 4.8 V)	Adaptation of basic brightness (lowest dimming level) to local conditions. Level 1 corresponds to lowest basic brightness.
Response on bus voltage failure		The response of the device in the event of bus voltage failure can be parameterized.
	ON (max. brightness)	The relay is switched on. A voltage applied at the 1-10 V input is raised to 10 V when mains voltage is present at the electronic ballast.
	OFF	The relay is switched off. The voltage at the 1-10 V input is not defined because the mains volttage supply to the electronic ballast is off.
	no change of relay switching status	The relay is not energized and remains in its current switching state. A voltage applied at the 1-10 V input is raised to 10 V when mains voltage is present at the electronic ballast.
Response on bus voltage return	OFF basic brightness 10% 20% 30% 40% 50% 60% 70% 80% 90% maximum brightness **Brightness value on bus voltage failure**	The response of the device on return of bus voltage can be parameterized. If the setting is "Brightness value at the time of bus voltage failure", the brightness at the time of bus voltage failure is stored in the NV memory of the device. The value is restored after return of bus voltage. After programming with the ETS, the value is always "0" (OFF).

instabus EIB System

Actuator

📂 Output 1		
Starting brightness: Switching on with the starting brightness	basic brightness 10% 20% 30% 40% 50% 60% 70% 80% 90% **maximum brightness** brightness value before last shutoff	Defines the starting brightness on reception of an ON telegram. If the setting is "Brightness before last shutoff", the brightness value existing before last shutoff is stored in the device (RAM) via the switching object. When the device is switched on next time via the switching object, this value will be restored. Only values not equal "0" (OFF) are stored. After programming with the ETS or return of bus voltage, the value is always "1" (basic brightness).
Response on reception of value	direct jump to brightness level **approach brightness level by dimming**	Defines whether a received brightness level is reached directly or approached by dimming.
Time between 2 of 255 dimming levels base value	**0,5 ms** 8 ms 130 ms 2,1 s 33 s	Defines the timebase applicable to 2 of the 255 dimming levels. Changing the length of the dimming levels permits setting the dimming speed. Time = factor x base
Time between 2 of 255 dimming levels factor (3...255)	3...255, **24**	Time factor determining the time between two dimming levels. Preset value: 24 · 0.5 ms = 12 ms
📂 Output 2 resp. output 3, see ouput 1		

GIRA

📁 Output 1, enable		
Time functions ?	YES **NO**	Defines whether soft- and/or time-dimming functions are to be enabled.
Shutoff function ?	YES **NO**	Defines whether the control unit is to shut off after a parametrizable time on reaching of a constant brightness below a presettable shutoff brightness.
Disable function?	YES **NO**	The control unit can be disabled from the bus, i.e. an active brightness value remains constant when disable is active. Disabling function is deactivated.
Light-scenes ?	YES **NO**	Defines whether the light-scene function is activated or not.
Switching status checkback?	YES **NO**	Defines whether the switching status is to be checked back.
📁 Output 2 enable resp. Output 3 enable, see Output 1 enable		

| 📁 Output 1 time functions		
"Soft-ON" function ?	YES **NO**	Defines whether the Soft-ON function is activated or not.
Soft-ON time for a dimming level base value	**0,5 ms** 8 ms 130 ms 2,1 s 33 s	Setting for slow switching: increase of brightness up to the parametzerized starting brightness (not retriggerable). brightness $t_1 - t_0$: time for soft-ON timebase of a dimming level for soft-ON time = base x factor
Soft-ON time for a dimming level factor (3...255)	3...255, **24**	time factor of a dimming level with soft-ON Preset value: $24 \cdot 0.5$ ms = 12 ms
"Soft-OFF" function ?	YES **NO**	Determines whether the soft-OFF function is activated.
Soft-OFF time for a dimming level base value	**0,5 ms** 8 ms 130 ms 2,1 s 33 s	Setting for slow shutoff: reducing the brightness until shutoff. (not retriggerable). brightness $t_3 - t_2$: time for soft-OFF timebase of a dimming level for soft-OFF time = base x factor
Soft-OFF time for a dimming level factor (3...255)	3...255, **24**	time factor of a dimming level with soft-OFF Preset value: $24 \cdot 0.5$ ms = 12 ms

GIRA

📁 Output 1 time functions		
Activate time-dimming function ?	YES **NO**	On activation ("ON" telegram) of the time-dimming function, a timer routine is started. Time-dimming starts a timer switch when activated ("ON" telegram). After the end of the preset time delay, the control unit is switched off automatically (retriggerable). Soft-ON and soft-OFF functions can be activated. $t_1 - t_0$: time for soft-ON (optional) $t_2 - t_1$: time between ON and OFF $t_3 - t_2$: time for soft-OFF (optional)
Time between ON and OFF base value	0,5 ms 8 ms **130 ms** 2,1 s 33 s	Delay = base x factor
Time between ON and OFF factor (3...255)	3...255, **80**	Delay = base x factor Preset value: 80 · 130 ms = 10.4 s

📁 Output 2 time functions resp. Output 3 time functions, see Output 1 time functions.

📁 Output 1 Disable		
Function of disable object	**0 = operation, 1 = disabled** 1 = operation, 0 = disabled	The control unit is disabled when disable object value = 1. The control unit is disabled when disable object value = 0.
Brightness at the beginning of disabling	**OFF** basic brightness 10% 20% 30% 40% 50% 60% 70% 80% 90% maximum brightness no action brightness value before last shutoff	Defines the brightness value active at the beginning of disable. If the setting is "no action", the currently set brightness remains unchanged. If the setting is "brightness value before last shutoff", the brightness value before last shutoff is stored in the device (RAM) via the switching object. This value is restored at the beginning of the disabling function. Only values not equal "0" (OFF) are Stored. After programming with the ETS or return of bus voltage, the value is always "1" (basic brightness).

instabus EIB System

Actuator

📁 Output 1 Disable		
Brightness at the end of disabling	**OFF** basic brightness 10% 20% 30% 40% 50% 60% 70% 80% 90% maximum brightness no action brightness value before last shutoff follow-up brightness	Defines the brightness value set at the end of disable. If the setting is "no action", the currently set brightness remains unchanged. If the setting is "brightness value before last shutoff", the brightness value before last shutoff is stored in the device (RAM) via the switching object. This value is restored at the end of the disabling function. Only values not equal "0" (OFF) are stored. Shutting off during an active disabling function is not possible. After programming with the ETS or return of bus voltage, the value is always "1" (basic brightness). If the setting is "follow-up brightness", bus telegrams (switching, dimming, brightness value) will be registered also during active disable and the brightness value will be followed up. At the end of disable, the brightness value active before disable or followed up during disable will be restored.
📁 Output 2 disable resp. Output 3 disable, see Output 1 disable		
📁 Output 1 light-scenes		
Brightness for light-scene 1	OFF basic brightness 10% 20% 30% 40% 50% 60% 70% 80% 90% maximum brightness	Setting of brightness for light-scene 1
Brightness for light-scenes 2 - 8	see light-scene 1	
Storage function ?	YES **NO**	Defines whether a brightness set at the control unit can be stored as a light-scene.
📁 Output 2 light-scenes resp. Output 3 light-scenes, see Output 1 light-scenes		

GIRA

📂 Output 1 shutoff function		
Delay to shutoff base value	0,5 ms 8 ms **130 ms** 2,1 s 33 s	Base of shutoff time delay. Time delay = base x factor
Delay to shutoff factor (3...255)	3…255, **10**	Factor of shutoff time delay Preset value: 10 x 130 ms = 1.3 s
Shutoff when brightness value below	**5 %** 55 % 10 % 60 % 15 % 65 % 20 % 70 % 25 % 75 % 30 % 80 % 35 % 85 % 40 % 90 % 45 % 95 % 50 % maximum brightness	On reaching of a constant brightness value below shutoff brightness, the dimming actuator is switched off after a parametrizable time delay.
📂 Output 2 shutoff function resp. Output 3 shutoff function, see Output 1 shutoff function		
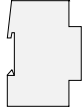
Software information

For editing of all parameters, access in der ETS must be set to "Full access".

- **Disable function (objects 12, 13 + 14)**

  The control unit can be disabled via the bus so that the preset brightness value remains constant during an active disable. At the beginning and at the end of the disabling function, the control unit can be set to a parameterized brightness (cf. also parameter description for disabling function).

- **Control voltage**

  The brightness range of 0 thru 255 (0 thru 100 %) corresponds to a linear control voltage range. The lowest possible voltage is defined by the parameterizable basic brightness. The highest possible control voltage is fixed at approx. 10 V. The basic brightness corresponds to brightness value = 1. When the brightness value is set = 0 the relay of the control unit switches off the connected electronic ballast ("OFF" state). In this case, the control voltage is non defined because the mains voltage supply of the electronic ballast is off. In case of electronic ballasts connected to the control input (1-10 V) but not switched by the internal relay, i.e. the mains voltage supply of these ballasts is not switched via the control unit, the control voltage in the "OFF" state is set to the value corresponding to the basic brightness.

- **Brightness value**

  The currently set brightness value is followed up in the brightness value objects. If the L flag of these objects is set, the current value can be read out. The control unit can also transmit a set brightness value actively to the bus. This means that the newly set brightness value can be transmitted when the control unit is switched on (via the "switching" object), when a running dimming cycle is being terminated or when a value is being received. This function is active only if the Ü flag of the respective "brightness value" objects has been set.

- **Switching status checkback**

  If the switching status of the control unit changes from "OFF" to "ON" or from "ON" to "OFF", a corresponding switching telegram is transmitted to the bus via the switching status checkback object. If the "Soft-ON" function has been activated and started, a checkback "ON" telegram is transmitted once at the beginning of the dimming cycle. If the "Soft-OFF" has been activated and started, a checkback "ON" telegram is being transmitted at the beginning of the dimming cycle. A checkback "OFF telegram will be transmitted only after the end of the dimming cycle. If the "Soft-OFF" function is started by an elapsed time-dimming function, a checkback "OFF" telegram is being transmitted to the bus only after the end of the dimming cycle.
  A corresponding switching status checkback telegram is transmitted also in the event of object value updates of the switching object ("OFF" after "OFF" resp. "ON" after "ON").

GIRA