12 S1 ConstLi 210301

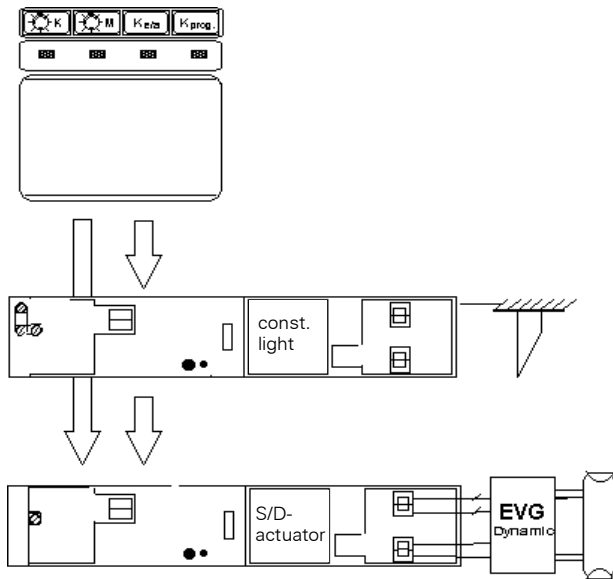## Devices Employing the Program

Product family: Physical Sensors
Product type: Brightness
Manufacturer: Siemens

Name: Brightness Controller GE252
Order-no.: 5WG1 252-4AB02

Application Description

The constant light control mode allows the brightness controller to maintain a constant light level within a regulating range of 200 to 1900 Lux.
When the actual light intensity exceeds the specified set point or drops below it, the brightness controller sends regulating telegrams to the corresponding switching/dimming actuators and thus brightens or darkens the lighting in steps until the set point is met.

The light intensity set point can be specified in the parameter list and also temporarily via bus telegrams.

The brightness controller can be locked to stop it from cancelling manual switch operations immediately.

When activating the constant light control all controlled lighting groups must be set to the same light intensity. This is necessary as the actuators' light intensity is established via dimming telegrams which does not allow you to balance two switching/dimming actuators with a different setting.

To stop the brightness controller from incessantly producing regulating telegrams in case the specified set point cannot be met as the brightness controller is overfed e.g. by direct sun light, the number of those dimming telegrams is limited to 127.

Communication Objects

no.	Function	Object name	Type
Phys.Addr.	Program		
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0	Function	Dimming	4 Bit
1	Setpoint	Set	1 Byte
2	Enabling/interlocking	Switch	1 Bit
3	Interlocking	Switch	1 Bit
4	Interlocking	Dimming	4 Bit
5	Interlocking	Value	1 Byte
6	Setpoint	Shift	4 Bit

Note:

The order of the entries may vary from the above due to individual customization of the table.

Obj	Function	Object name	Type	Flag
0	Function	Dimming	4-Bit	CTU
Via the group address of this object dimming telegrams are sent to the switching/dimming actuators. The group address must not be assigned to object [4]. Otherwise the brightness controller would lock itself with the first switching telegram.				
1	Setpoint	Set	1-Byte	CWU
This object's group address allows you to temporarily adjust the switching thresholds at any time to switching the lighting on exceeding or dropping below the Lux value as specified in the parameter list. The new threshold must be sent as a 1 byte telegram (e.g. via a push button 4-fold to sending values) according to the conversion table below. On releasing a locked brightness controller and on bus voltage recovery the thresholds are re set to the original parameter settings.				
2	Enabling / interlocking	Switch	1-Bit	CWU
Via this object's group address the brightness controller is locked and released. The constant light control is enabled with a "1" telegram and disabled again with a "0" telegram. Usually the object holds the group address to manually switching the lighting on and off. Thus, the brightness controller is activated with switching on the lighting and vice versa. When switching off the lighting, the brightness controller must also be deactivated. Otherwise it would switch the lighting on again in the night according to the parameter settings. The locking status is preserved on bus voltage failure and re-established on bus voltage recovery.				

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Obj	Function	Object name	Type	Flag
3	Interlocking	Switch	1-Bit	CWU
On receiving switching telegrams via this object the brightness controller is locked. The telegram's information ("1") or "0") is ignored. Usually, this object holds the group address to manual operation of the lighting group. Thus, the manual setting is maintained. With a "1" telegram at object [2] the constant light control is released again.				
4	Interlocking	Dimming	4-Bit	CWU
On receiving dimming telegrams via this object the brightness controller is locked. The telegram's information ("brighten" or "darken") is ignored. Usually, this object holds the group address to manual operation of the lighting group. Thus, the manual setting is maintained. With a "1" telegram at object [2] constant light control is released again. The assigned group address must not be identical to the one assigned to object [0]. Otherwise the brightness controller would lock itself with the first switching telegram.				
5	Interlocking	Value	1-Byte	CWU
On receiving "value" telegrams via this object the brightness controller is locked. The telegram's information ("light intensity value") is ignored. Usually, this object holds the group address to manual operation of the lighting group. Thus, the manual setting is maintained. With a "1" telegram at object [2] the constant light control is released again.				
6	Setpoint	Shift	4-Bit	CWU
This object's group address allows you to temporarily adjust the specified set point to regulating the lighting at any time. By adjusting the set point the lighting is automatically dimmed. After finishing the dimming the brightness controller accepts the established light intensity as the new set point. On releasing a locked brightness controller and on bus voltage recovery the set point is re set to the original parameter setting.				

Maximum number of group addresses: 15
Maximum number of assignments: 15

Parameters

Function:

Parameters	Settings
Setpoint to be regulated	**approx. 600 Lux** approx**.** 200 Lux : : approx. 1900 Lux
This parameter defines the set point to establishing a constant light control and can be set in steps of 50 Lux. „approx. 600 Lux": The brightness controller sends "brighten" or "darken" dimming telegrams until a light intensity value of about 600 Lux is established. „approx. 200 Lux": The brightness controller sends "brighten" or "darken" dimming telegrams until a light intensity value of about 200 Lux is established. „approx. 1900 Lux": The brightness controller sends "brighten" or "darken" dimming telegrams until a light intensity value of about 1900 Lux is established.	
Permitted deviation from setpoint deviation = (2-20)*(8 Lux)	**4**
This parameter defines the tolerance to establishing the set point which is necessary as the regulation is resolved via dimming telegrams. When choosing the tolerance too small or when using a flickering light it might occur that the set point lies between two dimming status and thus cannot be met by the control logic, In this case the tolerance must be increased. The tolerance is generated by multiplying the specified value with 8 Lux. Therefore the default tolerance is approx. 32 Lux.	
Dimming step size (without STOP)	**dim by 1/64** dim by 1/32
This parameter defines the change in light intensity that is to be established by a dimming telegram. „Dimming: 1/64": Every dimming telegram changes the light intensity by 1/64 (approx. 1,56 %) of the total dimming range. „Dimming: 1/32": Every dimming telegram changes the light intensity by 1/32 (approx. 3,12 %) of the total dimming range.	
Factor for dimming time (2-20)*130 ms	**5**
This parameter governs the frequency to the cyclic sending of dimming telegrams to changing the light intensity until the set point is met. Together with the "Dimming step size" this parameter constitutes the dimming speed. The cyclic send frequency is generated by multiplying specified value with 130ms. Therefore the default frequency is approx. 650ms.	

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Release/Interlocking:

Function	Enabling/interlocking	Calibration

Behaviour after commissioning — send telegrams

Parameters	Settings
Behaviour after commis-sioning	**send telegrams** do not send any telegrams
This parameter defines the locking status upon commissioning the brightness controller with the ETS. On bus voltage failure the actual status is preserved and re-established on bus voltage recovery. "send telegrams": On commissioning the brightness controller is released. "do not send any telegrams": On commissioning the brightness controller is locked.	

Calibration:

Function	Enabling/interlocking	Calibration

Enter calibration result here... (0 = no function, 255 = faulty) — 0

Parameters	Settings
Enter calibration result here... (0 = no function, 255 = faulty)	**0**
This parameter holds the amplification factor provided by the application program 12 C1 Calib 710101". A "0" disables the brightness controller. A result of "255" indicates a faulty calibration. Repeat the calibration procedure.	

Conversion table " Threshold value, Shifting ":

approx. 50	Lux = 6		approx. 1050 Lux	= 134
approx. 100	Lux = 13		approx. 1100 Lux	= 140
approx. 150	Lux = 19		approx. 1150 Lux	= 147
approx. 200	Lux = 26		approx. 1200 Lux	= 153
approx. 250	Lux = 32		approx. 1250 Lux	= 159
approx. 300	Lux = 38		approx. 1300 Lux	= 166
approx. 350	Lux = 45		approx. 1350 Lux	= 172
approx. 400	Lux = 51		approx. 1400 Lux	= 179
approx. 450	Lux = 57		approx. 1450 Lux	= 185
approx. 500	Lux = 64		approx. 1500 Lux	= 191
approx. 550	Lux = 70		approx. 1550 Lux	= 197
approx. 600	Lux = 77		approx. 1600 Lux	= 204
approx. 650	Lux = 83		approx. 1650 Lux	= 210
approx. 700	Lux = 90		approx. 1700 Lux	= 216
approx. 750	Lux = 96		approx. 1750 Lux	= 223
approx. 800	Lux = 102		approx. 1800 Lux	= 229
approx. 850	Lux = 109		approx. 1850 Lux	= 235
approx. 900	Lux = 115		approx. 1900 Lux	= 242
approx. 950	Lux = 121		approx. 1950 Lux	= 248
approx. 1000	Lux = 128		approx. 2000 Lux	= 255

Conversion formula " Threshold value, Shifting "

$(255/2000) \times (\text{new Lux value}) = 8$ bit information

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Notes: