12 S1 TwoPnt 210201

Devices Employing the Program

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

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

Application Description

This application allows you to switch switching actuators on and off as governed by the switching threshold (light intensity levels) specified in the parameter list with the ETS or via the bus.
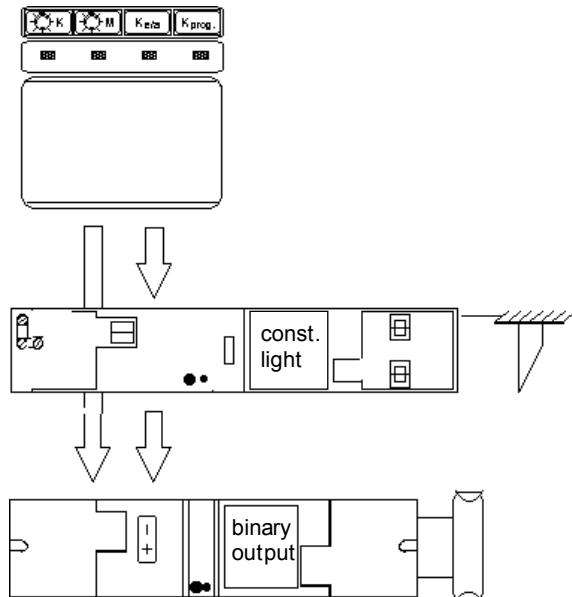
The application program provides the following operating modes:

Switch off:
The device sends an "off" telegram on exceeding a certain light intensity level.

Switch on
The device sends an "on" telegram on dropping below a certain light intensity level.

Two step light control:
The device sends an "off" telegram on exceeding a certain light intensity level and an "on" telegram when dropping below another light intensity level.

The two step light control mode is suited to controlling non dimmable lighting systems. E.g., lights close to windows could be switched off if the daylight suffices and back on again at night.

The brightness controller can be locked to stop it from cancelling manual switch operations immediately. Furthermore, the brightness controller can be locked temporarily to manual control while the switching telegrams are sent cyclically to the switching actuators.

Communication Objects

Phys.Addr.	Program		
no.	Function	Object name	Type
01.01.040	12 S1 TwoPnt 210201		
0	Function	Switch	1 Bit
1	Time interlocking	Switch	1 Bit
2	Enabling/interlocking	Manual operation	1 Bit
3	Interlocking	Switch	1 Bit
4	Threshold value	Set	1 Byte

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	Switch	1-Bit	CTU
	Via the group address of this object switching telegrams are sent to the lighting actuators. The group address must not be assigned to object [1] or object [3]. Otherwise the brightness controller would lock itself with the first switching telegram.			
1	Time interlock-ing	Switch	1-Bit	CWU
	On receiving switching telegrams via this object the brightness controller is locked to the time period specified in the "time lock" parameters. The telegram's information ("on" or "off") is ignored. Usually, this object holds the group address to manual operation of the lighting group. Thus, the manual setting is maintained to the specified locking period. After that, the brightness controller resumes control.			

Siemens AG
Automation and Drives Group
Electrical Installation Technology
P.O. Box 10 09 53, D-93009 Regensburg

210201, 4 pages

© Siemens AG 2001
Subject to change without prior notice

Technical Manual

Update: http://www.siemens.de/installationstechnik

3.12.2.1.3/1

12 S1 TwoPnt 210201

Obj	Function	Object name	Type	Flag
2	Enabling / interlocking	Manual operation	1-Bit	CWU
Via this object's group address the brightness controller is locked and released. The two point 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.			
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 two step 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.			
4	Threshold value	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. When using the brightness controller in the "switch on" or "two point light control" mode, the 1 byte information received is allocated to the "switch on threshold" parameter. The threshold to 2 step controller's "switch off" mode are generated from the difference of the thresholds as specified in the parameter list. When used in the "switch off" mode, thresholds received are allocated to the "switch on threshold" parameter. On releasing a locked brightness controller and on bus voltage recovery the thresholds are re set to the original parameter settings.			

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

Parameters

Function:

Parameters	Settings
Threshold value for switching On	**approx. 300 Lux** no On function about 150 Lux : : about 1950 Lux
This parameter defines the threshold to switching on the lighting when dropping below the specified value. The threshold can be set in steps of 50 Lux.   "about 300 Lux": The brightness controller produces an "On" telegram on dropping below a light intensity level of about 300 Lux.   "no on function": The brightness controller cannot switch the lighting on. This setting should be chosen if the brightness controller is to switch off if there is sufficient light but not switch on when it gets dark.   "about 150 Lux": The brightness controller produces an "On" telegram on dropping below a light intensity level of about 150 Lux.   "about 1950 Lux": The brightness controller produces an "On" telegram on dropping below a light intensity level of about 1950 Lux.
Threshold value for switching Off	**about 800 Lux** about 150 Lux : : about 1950 Lux no Off function
This parameter defines the threshold to switching on the lighting and can be set in steps of 50 Lux.   "about 800 Lux": The brightness controller produces an "Off" telegram on exceeding a light intensity level of about 800 Lux.   "about 150 Lux": The brightness controller produces an "Off" telegram on exceeding a light intensity level of about 150 Lux.   "about 1950 Lux": The brightness controller produces an "Off" telegram on exceeding a light intensity level of about 1950 Lux.   "no Off function": The brightness controller cannot switch the lighting off. This setting should be chosen if the brightness controller is to switch on when it's dark only but not switch off when there is sufficient light.

Technical Manual

Update: http://www.siemens.de/installationstechnik

210201, 4 pages

© Siemens AG 2001
Subject to change without prior notice

Siemens AG
Automation and Drives Group
Electrical Installation Technology
P.O. Box 10 09 53, D-93009 Regensburg

3.12.2.1.3/2

12 S1 TwoPnt 210201

Parameters	Settings
Base for cyclical sending	**Time base 17 sec** Time base 130 ms Time base 260 ms Time base 520 ms Time base 1,0 sec Time base 2,1 sec Time base 4,2 sec Time base 8,4 sec Time base 34 sec Time base 1,1 min Time base 2,2 min Time base 4,5 min Time base 9,0 min Time base 18 min Time base 35 min Time base 1,2 hr
Factor for cyclical sending On (5-127)	**106**
This parameter governs the frequency to the cyclic sending of "On" telegrams on the bus while the switch on threshold is exceeded. The cyclic send frequency is generated by multiplying the "Base for cyclical sending" with the "Factor for cyclical sending". Therefore the default cyclic send period is approx. 15 minutes. Note: As the specified base equals the maximum timing error, the smallest possible base should be used to establish the desired frequency.	
Factor for cyclical sending Off (5-127)	**53**
This parameter governs the frequency to the cyclic sending of "Off" telegrams on the bus while the switch off threshold is exceeded. The cyclic send frequency is generated by multiplying the " Base for cyclical sending " with the "Factor for cyclical sending". Therefore the default cyclic send period is approx. 15 minutes. Note: As the specified base equals the maximum timing error, the smallest possible base should be used to establish the desired frequency.	

Enabling/Interlocking:

Parameters	Settings
Behaviour after commissioning	**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.	

Time interlocking:

Parameters	Settings
Base for interlocking time	Time base 17 sec Time base 130 ms Time base 260 ms Time base 520 ms Time base 1,0 sec Time base 2,1 sec Time base 4,2 sec Time base 8,4 sec **Time base 34 sec** Time base 1,1 min Time base 2,2 min Time base 4,5 min Time base 9,0 min Time base 18 min Time base 35 min Time base 1,2 hr
Factor for interlocking time (5-127)	**106**
This parameter defines the period of time the brightness controller is locked on receiving a telegram at object [1]. Once this period has passed, the brightness controller is released. The locking period is generated by multiplying the base with the factor. Therefore the default period is approx. 60 minutes. Note: As the specified base equals the maximum timing error, the smallest possible base should be used to establish the desired frequency.	

Calibration:

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.	

Siemens AG
Automation and Drives Group
Electrical Installation Technology
P.O. Box 10 09 53, D-93009 Regensburg

210201, 4 pages

© Siemens AG 2001
Subject to change without prior notice

Technical Manual

Update: http://www.siemens.de/installationstechnik

3.12.2.1.3/3

12 S1 TwoPnt 210201

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) x (new Lux value) = 8 bit information

Technical Manual

210201, 4 pages

Siemens AG
Automation and Drives Group
Update: http://www.siemens.de/installationstechnik   © Siemens AG 2001   Electrical Installation Technology
Subject to change without prior notice   P.O. Box 10 09 53, D-93009 Regensburg

3.12.2.1.3/4