SIEMENS

Application program description

November 2010

25 CO IR-DECODER 909201

Use of the application program

Product family:	Infrared
Product type:	IR Receiver-Decoder
Manufacturer:	Siemens

Name:IR Receiver Decoder S450Order no.:5WG1 450-7AB03

Functional description

The IR Receiver Decoder S 450 translates the IR signals it receives for wireless control from IR hand-held remotes S 425 or from IR wall switches AP 420, AP 421 and AP 422 into bus telegrams. IR control signals of a pair of buttons or switches on an IR hand-held or an IR wall switch transmitter can be evaluated for the individual buttons or for the pair of buttons.

The device offers a 32 channel IR receiver decoder.

Each of the 32 IR channels may be configured either for the single buttons of an IR channel or for the IR button pair. Likewise, additional functions can be selected dependent on the selected main function.

Additionally, the IR receiver-decoder can receive up to 32 brightness values and temperature values, motion detection messages and IR identification numbers from corresponding IR transmitters and send these messages onto the bus.

When configured for evaluation as individual buttons the IR control signals for the corresponding individual button or switch can be translated into bus telegrams for

- Switching (on, off, toggle)
- door bell function
- single button dimming
- single button control of solar protection (blinds, roller shades)
- 1-bit scene control (scene 1 or 2: recall / save)
- 8-bit scene / effect control (recall, recall / save)
- Send value (8-bit value, percent)
- Send value (16-bit value, temperature value, brightness value)
- Forced control

Depending on the selected main function another function may be executed either additionally after a time delay (time delay configurable from 100ms to 6550s) or alternatively when the button is pressed for a longer period. When configured for evaluation as a pair of buttons the IR control signals for the corresponding pair of buttons or switches can be translated into bus telegrams for

- Dual-button dimming with stop telegram
- Dual-button control of solar protection (blinds, roller shades)
- Send variable percent value
- Send variable 8-bit value
- 1-bit scene control (scene 1 and 2: recall / save)
- 8-bit scene / effect control (recall / save)
- Forced control

Depending on the selected main function another function may be executed additionally after a time delay (time delay configurable from 100ms to 6550s).

These options are available as additional or alternative functions for single buttons or button pairs:

- Switching (on)
- Switching (off)
- Send percent value
- Send 8-bit value (0...255)
- Send temperature value
- Send brightness value
- Send 16-bit value (0...65535)
- 1-bit scene control (scene 1: recall / save)
- 1-bit scene control (scene 2: recall / save)
- 8-bit scene / effect control: recall
- Forced on
- Forced off
- Deactivate forced control

Locking of buttons

Operation of each push button respectively pair of buttons can be locked or unlocked via a communication object. A parameter determines whether the operation of the button respectively pair of buttons is always unlocked or is locked via the blocking object with a configurable blocking object value of 1 or 0.

There are no special actions associated with this function on bus voltage failure or recovery

November 2010

25 CO IR-DECODER 909201

Functions for single buttons

Switching

When the button is pressed the corresponding command telegram (ON / OFF/ Toggle) is sent immediately.

When the parameter "send additional telegram after delay (second telegram)" is selected then with one button operation two different switching commands can be sent with a time delay (100ms to 6550s) via two communication objects (e.g. "ON" via object 1, "OFF" via object 2). The second telegram can also contain a different function, e.g. 8-bit scene recall. If the button is pressed again before the configured delay time expires the time delay starts over.

When the parameter "send additional telegram on long key press (alternatively)" is selected then by the differentiation between short / long button operation two different communication objects can be sent (e.g. short button operation "ON" viaobject 1, long button operation "OFF" via object 2). The time determining the difference between short and long button operation is configurable.

The operation function can be disabled via a blocking object.

No special actions are assigned to this function for bus voltage failure or bus voltage recovery.

Door bell function

When the button is pressed an "On" or "Off" message is sent. When the button is released the inverse message is sent.

An additional telegram for this function is not available. The operation function can be disabled via a blocking object.

No special actions are assigned to this function for bus voltage failure or bus voltage recovery.

1-button dimming

Using a single button, a short button operation can switch on respectively off (toggle) and with a long button operation dim brighter respectively darker. The dimming direction brighter / darker changes with each new long button operation. After switching on with a short button operation the dimming direction is preset to "darker" and after switching off it is preset to "brighter". The time that determines the difference between a short and a long button operation is configurable in general for the functions dimming / solar protection (parameter window "General – Timers").

An additional telegram for this function is not available. The operation function can be disabled via a blocking object.

No special actions are assigned to this function for bus voltage failure or bus voltage recovery.

1-button solar protection control

Using a single button, a long button operation moves the solar protection down or up (the movement direction changes with each new long button operation). Via a short button operation the movement can be stopped respectively the slats can be opened or closed by a step. With a short button operation a solar protection moving downward is stopped and with each further short operation the slats are opened step-by-step. With a short button operation a solar protection moving upward is stopped and with each further short operation the slats are closed step-by-step.

The time that determines the difference between a short and a long button operation is configurable in general for the functions dimming *I* solar protection (parameter window "General – Timers").

An additional telegram for this function is not available.

The operation function can be disabled via a blocking object.

No special actions are assigned to this function for bus voltage failure or bus voltage recovery.

1-bit scene 1 recall / save

1-bit scene 2 recall / save

The "1-bit scenen recall / save" function allows the user to change the char-acteristics of a preset scene, i.e. brightness levels and switching states of the groups within a scene, without using the ETS.

Using a single button (configurable for scene 1 or scene 2), a short button operation recalls the scene and a long button operation saves the scene. There is a communication object for saving a scene and a second object for recalling the saved scene.

Recalling a scene happens with a 1-bit switching telegram, where a "0"-telegram recalls scene 1 and a "1"telegram recalls scene 2. A parameter determines which scene number is assigned to the button.

A scene is saved via a 1-bit switching telegram, where a "0"-telegram saves scene 1 and a "1"-telegram saves scene 2. The scene controller must have a functionally corresponding application program.

Before saving a scene the actuators belonging to that scene must be set to the desired light levels and switching states. When receiving a save telegram a scene controller is commanded to interrogate the current light levels and switching states of the actuators and save these as scene settings.

If a button has an associated LED, that LED, if configured accordingly, signals the long button operation.

The time that determines the difference between a short and a long button operation is configurable in general for the function save scene (parameter window "General – Timers").

An additional telegram for this function is not available.

Technical manual

25 CO IR-DECODER 909201

The operation function can be disabled via a blocking object.

No special actions are assigned to this function for bus voltage failure or bus voltage recovery.

8-bit scene recall / save

The "8-bit scene recall / save" function allows for changing the characteristics of a preset scene, i.e. brightness levels and switching states of the groups within a scene, without using the ETS.

Using a single button configured for a scene number (1...64), a short button operation recalls the scene and a long button operation saves the scene. It is possible to configure only recalling the 8-bit scene. There is only one communication object for saving the 8-bit scene and recalling the saved scene using the target scene number.

Recalling a scene happens with an 8-bit telegram, where the lower 6 bits (bit 0-5) contain the scene number, bit 6 is reserved, and bit 7 is set to "0" (recall).

A scene is saved via an 8-bit telegram, where the lower 6 bits (bit 0-5) contain the scene number, bit 6 is reserved, and bit 7 is set to "1" (save). The scene controller or actuators with an 8-bit scene function must have a functionally corresponding application program.

Before saving a scene the actuators belonging to that scene must be set to the desired light levels and switching states. When receiving a save telegram scene controllers or actuators with 8-bit scene function are commanded to interrogate the current light levels and switching states of the actuators and save these as scene settings.

If a button has an associated LED, that LED, if configured accordingly, signals the long button operation.

The time that determines the difference between a short and a long button operation is configurable in general for the function save scene (parameter window "General – Timers").

An additional telegram for this function is not available. The operation function can be disabled via a blocking object.

No special actions are assigned to this function for bus voltage failure or bus voltage recovery.

Send value (8 bit)

This function is used to send 8-bit values in the range 0...255 or 0...100%.

An 8-bit value is assigned to the button so that with a short operation of this button e.g. the associated lights are dimmed to the configured value or the speed of a fan is controlled.

When the parameter "send additional telegram after delay (second telegram)" is selected then with one button operation two different values can be sent with a time delay (100ms to 6550s) via two communication objects (e.g. "100%" via object 1, "0%" via object 2). The second telegram can also contain a different function, e.g. 8-bit scene recall. If the button is pressed again before the configured delay time expires the time delay starts over. When the parameter "send additional telegram on long key press (alternatively)" is selected then by the differentiation between short / long button operation two different communication objects can be sent (e.g. short button operation "100%" via object 1, long button operation "127" via object 2). The time determining the difference between short and long button operation is configurable. The operation function can be disabled via a blocking object.

No special actions are assigned to this function for bus voltage failure or bus voltage recovery.

Send value (16-Bit)

This function is used to send 2 byte floating point values for temperature (0...40°C), brightness level (0...2000 Lux) or any value in the range 0...65535.

An 16-bit value is assigned to the button so that with a short operation of this button e.g. the setpoint temperature is set to the configured value.

When the parameter "send additional telegram after delay (second telegram)" is selected then with one button operation two different values can be sent with a time delay (100ms to 6550s) via two communication objects (e.g. "21°C" via object 1, "18°C" via object 2). The second telegram can also contain a different function, e.g. 8-bit scene recall. If the button is pressed again before the configured delay time expires the time delay starts over.

When the parameter "send additional telegram on long key press (alternatively)" is selected then by the differentiation between short / long button operation two different communication objects can be sent (e.g. short button operation "21°C" via object 1, long button operation "500 Lux" via object 2). The time determining the difference between short and long button operation is configurable. The operation function can be disabled via a blocking object.

No special actions are assigned to this function for bus voltage failure or bus voltage recovery.

Forced control

A short operation of the button immediately sends the configured telegram ("forced on" respectively "forced off") onto the bus. A long operation of the button sends a telegram that deactivates the forced control and at the same time may send an on or off signal.

The time that determines the difference between a short and a long button operation is configurable in general for the function forced control (parameter window "General – Timers").

Actuators with a forced control input allow for overriding specific actuator outputs by central control commands.

November 2010

25 CO IR-DECODER 909201

This may prohibit e.g. turning selected lights on during energy savings or night mode. In night mode a forced control off telegram may be sent at 20:00 and at 06:00 a forced control telegram may deactivate the forced control. Using the forced control function allows manually activating forced control or deactivating an automatically activated forced control.

Via an additional communication object, for actuators without 2-bit forced control, a short button operation sends a switching command "ON" (or alternatively "OFF") and a long button operation sends a switching command "OFF" (or alternatively "ON").

The operation function can be disabled via a blocking object.

No special actions are assigned to this function for bus voltage failure or bus voltage recovery.

Functions for button pairs

2-button dimming

With a button pair, short operation of the buttons provides defined on and off switching whereas long operation of the buttons provides defined brighter and darker dimming. Which button of the pair switches off and dimsdarker respectively switches on and dims brighter can be configured.

The function "Dimming with stop telegram" sends a dimming "brighter" respectively "darker" as soon as a long button operation is detected on one of the two buttons and a stop telegram when that button is released.

The time that determines the difference between a short and a long button operation is configurable in general for the functions dimming / solar protection (parameter window "General – Timers").

When the parameter "Send second telegram" is selected then with one button operation two different switching commands can be sent with a time delay (100ms to 6550s) via two communication objects (e.g. "ON" via object 1, "OFF" via object 2). The second telegram can also contain a different function, e.g. 8-bit scene recall. If the button of a button pair is pressed again before the configured delay time expires the time delay starts over. The operation function can be disabled via a blocking object.

No special actions are assigned to this function for bus voltage failure or bus voltage recovery.

Solar protection control (venetian blind) for button pair

With a button pair, long operation of the buttons provides defined up and down movement of the solar protection whereas short operation of the buttons provides stopping the movement respectively opens or closes the slats step-by-step. Which button of the pair moves the solar protection up or down respectively opens or closes the slats step-by-step can be configured. The time that determines the difference between a short and a long button operation is configurable in general for the functions dimming *I* solar protection (parameter window "General – Timers").

When the parameter "Send second telegram" is selected then with one button operation two different switching commands can be sent with a time delay (100ms to 6550s) via two communication objects (e.g. "ON" via object 1, "OFF" via object 2). The second telegram can also contain a different function, e.g. 8-bit scene recall. If the button of a button pair is pressed again before the configured delay time expires the time delay starts over.

The operation function can be disabled via a blocking object.

No special actions are assigned to this function for bus voltage failure or bus voltage recovery.

1-bit scene recall / save

The "1-bit scenen recall / save" function allows the user to change the char-acteristics of a preset scene, i.e. brightness levels and switching states of the groups within a scene, without using the ETS.

Using a button pair (scene 1 on button 1, scene 2 on button 2), a short button operation recalls the associated scene and a long button operation saves the associated scene. There is a communication object each for saving a scene and a second object for recalling the saved scene.

Recalling a scene happens with a 1-bit switching telegram, where a "0"-telegram recalls scene 1 and a "1"telegram recalls scene 2.

A scene is saved via a 1-bit switching telegram, where a "0"-telegram saves scene 1 and a "1"-telegram saves scene 2. The scene controller must have a functionally corresponding application program.

Before saving a scene the actuators belonging to that scene must be set to the desired light levels and switching states. When receiving a save telegram a scene controller is commanded to interrogate the current light levels and switching states of the actuators and save these as scene settings.

If a button has an associated LED, that LED, if configured accordingly, signals the long button operation.

The time that determines the difference between a short and a long button operation is configurable in general for the function save scene (parameter window "General – Timers").

When the parameter "Send second telegram" is selected then with one button operation two different scene control commands can be sent with a time delay (100ms to 6550s) via two communication objects (e.g. "scene 1 recall" via object 1, "scene 2 recall" via object 2). The second telegram can also contain a different function,

Technical manual

25 CO IR-DECODER 909201

e.g. 8-bit scene recall. If the button of a button pair is pressed again before the configured delay time expires the time delay starts over.

The operation function can be disabled via a blocking object.

No special actions are assigned to this function for bus voltage failure or bus voltage recovery.

8-bit scene recall / save

The "8-bit scene recall / save" function allows for changing the characteristics of a preset scene, i.e. brightness levels and switching states of the groups within a scene, without using the ETS.

Each button of a button pair can be configured for a scene number (1...64), a short button operation recalls the scene and a long button operation saves the scene.

There is only one communication object for saving the 8bit scene and recalling the saved scene using the target scene number.

Recalling a scene happens with an 8-bit telegram, where the lower 6 bits (bit 0-5) contain the scene number, bit 6 is reserved, and bit 7 is set to "0" (recall).

A scene is saved via an 8-bit telegram, where the lower 6 bits (bit 0-5) contain the scene number, bit 6 is reserved, and bit 7 is set to "1" (save). The scene controller or actuators with an 8-bit scene function must have a functionally corresponding application program.

Before saving a scene the actuators belonging to that scene must be set to the desired light levels and switching states. When receiving a save telegram scene controllers or actuators with 8-bit scene function are commanded to interrogate the current light levels and switching states of the actuators and save these as scene settings.

If a button has an associated LED, that LED, if configured accordingly, signals the long button operation.

The time that determines the difference between a short and a long button operation is configurable in general for the function save scene (parameter window "General – Timers").

When the parameter "Send second telegram" is selected then with one button operation two different scene control commands can be sent with a time delay (100ms to 6550s) via two communication objects (e.g. "scene 11 recall" via object 1, "scene 22 recall" via object 2). The second telegram can also contain a different function, e.g. switching "ON". If the button of a button pair is pressed again before the configured delay time expires the time delay starts over.

The operation function can be disabled via a blocking object.

No special actions are assigned to this function for bus voltage failure or bus voltage recovery.

Send variable value (8 bit)

This function offers sending variable 8-bit values in the range from 0...255 or 0...100%. With a short operation of one button (button 1 or 2) of a button pair the current value of the communication object is incremented respectively decrmented and sent onto the bus. With a long operation of button 1 or 2 the value is incremented respectively decremented step-by-step and sent cyclically as long as the button is pressed. When the variable value reaches or falls below the lower limit or reaches or rises above the upper limit then the lower respectively upper limit value is sent.

The time that determines the difference between a short and a long button operation as well as the iteration period are configurable in general for the function send variable value (parameter window "General – Timers").

The upper limit value (button 1) and the lower limit value (button 2) as well as the step are configurable.

When the parameter "Send second telegram" is selected then an additional command can be sent with a time delay (100ms to 6550s) via a second communication object (e.g. "scene 22 recall" via object 2). If the additional command shall be sent after releasing the button the delay time for sending the additional command must be selected such that it is greater than the time differentiating between a short and a long button operation and greater than the time between sending variable value telegrams while pressing the button.

If the button of a button pair is pressed again or a variable value telegram is sent before the configured delay time expires the time delay starts over.

The operation function can be disabled via a blocking object.

No special actions are assigned to this function for bus voltage failure or bus voltage recovery.

Forced control

A short operation of a button of the button pair immediately sends the configured telegram (e.g. button 1: "forced on"; button 2: "forced off") onto the bus. A long operation of a button sends a telegram that deactivates the forced control and at the same time may send an on or off signal.

The time that determines the difference between a short and a long button operation is configurable in general for the function forced control (parameter window "General – Timers").

Actuators with a forced control input allow for overriding specific actuator outputs by central control commands. This may prohibit e.g. turning selected lights on during energy savings or night mode. In night mode a forced control off telegram may be sent at 20:00 and at 06:00 a forced control telegram may deactivate the forced control. Using the forced control function allows manually

November 2010

25 CO IR-DECODER 909201

activating forced control or deactivating an automatically activated forced control.

When the parameter "Send second telegram" is selected then with one button operation two different scene control commands can be sent with a time delay (100ms to 6550s) via two communication objects (e.g. "forced ON" via object 1, "ON" via object 2). The second telegram can also contain a different function, e.g. 8-bit scene recall. If the button of a button pair is pressed again before the configured delay time expires the time delay starts over.

The operation function can be disabled via a blocking object.

No special actions are assigned to this function for bus voltage failure or bus voltage recovery.

Building site function

The building site function enables switching the building site lighting on and off via bus wall switches and actuators, even if these devices have not yet been commissioned with ETS.

All button pairs are preconfigured with the building site function for switching (top On, bottom Off).

Behavior on bus voltage failure / recovery

The behavior on bus voltage failure and recovery is covered in the functional descriptions of the single button and button pair functions.

Communication objects

Maximum number of group addresses:	250
Maximum number of assignments:	250

Note

The number and names of communication objects visible can vary depending on the parameter settings.

With the ETS (Engineering Tool Software) the specific parameters and addresses are assigned appropriately, and downloaded into the device.

A magnet is used for contactless toggling between normal operating mode and addressing mode for transferring the physical address. A programming LED behind the black IR receiver lens displays the normal/addressing mode.

The application program already has been loaded in the factory.

Downloading the application programm requires Engineering Tool Software (ETS) version ETS3.0e or higher.

No.	Object name	Function	Number Bit	Flags
0	K00/32 >>1, Switching	On	1 bit	CT
1	K00/32 >>1, 2nd telegram, percentage	value	1 Byte	CT
2	K00/32 <<0, Switching	Off	1 bit	CT
3	K00/32 <<0, 2nd telegram, percentage	value	1 Byte	CT
4	K00/32, temperature	value	2 Byte	CRT
5	K00/32, brightness	value	2 Byte	CRT
6	K00/32, presence	1=presence	1 bit	CRT
7	K01/33 >>1, Switching	On	1 bit	CT
8	K01/33 >>1, 2nd telegram, Switching	On	1 bit	CWT
9	K01/33 <<0, Switching	Off	1 bit	CT
10	K01/33 <<0, 2nd telegram, Switching	On	1 bit	CT
11	K01/33, temperature	value	2 Byte	CRT
12	K01/33, brightness	value	2 Byte	CRT
13	K01/33, presence	1=presence	1 bit	CRT
210	K30/62 >>1, Switching	On	1 bit	CT
211	K30/62 >>1, 2nd telegram, Switching	On	1 bit	CWT
212	K30/62 <<0, Switching	Off	1 bit	CT
213	K15/47 <<0, 2nd telegram, Switching	On	1 bit	CT
214	K30/62, temperature	value	2 Byte	CRT
215	K30/62, brightness	value	2 Byte	CRT
216	K30/62, presence	1=presence	1 bit	CRT
217	K31/63 >>1, Switching	On	1 bit	CT
218	K31/63 >>1, 2nd telegram, Switching	On	1 bit	CWT
219	K31/63 <<0, Switching	Off	1 bit	CT
220	K31/63 <<0, 2nd telegram, Switching	On	1 bit	CT
221	K31/63, temperature	value	2 Byte	CRT
222	K31/63, brightness	value	2 Byte	CRT
223	K31/63, presence	1=presence	1 bit	CRT
224	IR-ID	Number	2 Byte	CRWT
225	blocking object (IR buttons)	disable / enable	1 bit	CRWTU
226	blocking object (IR presence)	disable / enable	1 bit	CRWTU

Technical manual

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

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909201, 32 pages

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25 CO IR-DECODER 909201

General objects

Security / blocking object

Obj	Name	Function	Length	Flag	
225	blocking object (IR buttons)	disable / enable	1 Bit	CRWTU	
Via tł enab	Via this object the operation functions of the IR buttons are enabled or disabled according to the parameter settings.				
226	blocking object (IR presence)	disable / enable	1 Bit	CRWTU	
Via this object the operation functions of the IR presence signals are enabled or disabled according to the parameter settings.					

Objects IR receiver decoder

For each of the 32 IR channels functions can be assigned to the individual buttons of an IR channel or to the IR button pair. Likewise, additional functions can be selected dependent on the selected main functions.

Additionally, the IR receiver-decoder can receive each up to 32 brightness values, temperature values, motion detections and IR ID numbers from corresponding IR transmitters and send these onto the bus.

The following documents these functions only for the first and the 32nd IR channel.

Depending on the selected IR channel block the number of the first IR channel is 0 or 32. Accordingly this first channel is named as C00/32.

The naming ">>1" corresponds with the IR hand-held remote button labeled with "1" or with an arrow pointing up.

The naming "<<0" corresponds with the IR hand-held remote button labeled with "0" or with an arrow pointing down.

For all IR decoder functions for "button pair" an additonal time-delayed function may be configured for each button. The time delay starts with release of the button. For more information about the additional objects see description under "Functions second telegram".

Technical manual

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November 2010

25 CO IR-DECODER 909201

IR decoder functions, single buttons -Switching: On

Obj	Name	Function	Length	Flag
0	C00/32 >>1, swit- ching	On	1 Bit	СТ
2	C00/32 <<0, swit- ching	On	1 Bit	СТ
	•••			
217	C31/63 >>1, swit- ching	On	1 Bit	СТ
219	C31/63 <<0, swit- ching	On	1 Bit	СТ
Wher gram	When one of the buttons is pressed an "On" switching tele- gram is sent via the corresponding object.			

For each button with this function an additonal function may be configured. For more information about the additional objects see description under "Functions second telegram".

IR decoder functions, single buttons -Switching: Off

Obj	Name	Function	Length	Flag	
0	C00/32 >>1, swit- ching	Off	1 Bit	СТ	
2	C00/32 <<0, swit- ching	Off	1 Bit	СТ	
	•••				
217	C31/63 >>1, swit- ching	Off	1 Bit	СТ	
219	C31/63 <<0, swit- ching	Off	1 Bit	CT	
Wher gram	When one of the buttons is pressed an "Off" switching tele- gram is sent via the corresponding object.				

For each button with this function an additonal function may be configured. For more information about the additional objects see description under "Functions second telegram".

IR decoder functions, single buttons -Switching: Toggle

Obj	Name	Function	Length	Flag
0	C00/32 >>1, swit- ching	Toggle	1 Bit	CWT
2	C00/32 <<0, swit- ching	Toggle	1 Bit	CWT
217	C31/63 >>1, swit- ching	Toggle	1 Bit	CWT
219	C31/63 <<0, swit- ching	Toggle	1 Bit	CWT
On the first operation of a button an "On" telegram is sent via the corresponding object and on the next operation of the same button an "Off" telegram is sent. On each following operation the value is inverted and then sent (toggle func- tion).				

IR decoder functions, single buttons -Switching, dimming: Toggle, brighter / darker (1-button dimming)

Obj	Name	Function	Length	Flag
0	C00/32 >>1, swit- ching	Toggle	1 Bit	CWT
1	C00/32 >>1, dimming	brighter / darker	4 Bit	CT
2	C00/32 <<0, swit- ching	Toggle	1 Bit	CWT
3	C00/32 <<0, dimming	brighter / darker	4 Bit	CT
217	C31/63 >>1, swit- ching	Toggle	1 Bit	CWT
218	C31/63 >>1, dimming	brighter / darker	4 Bit	СТ
219	C31/63 <<0, swit- ching	Toggle	1 Bit	CWT
220	C31/63 <<0, dimming	brighter /	4 Bit	СТ

On the first operation of a button an "On" telegram is sent via the corresponding object and on the next operation of the same button an "Off" telegram is sent. On each following operation the value is inverted and then sent (toggle function).

On a long operation of a button a "brighter" dimming telegram is sent via the corrseponding object and on the next operation of the same button a "darker" dimming telegram is sent. On each following long operation the dimming direction (brighter / darker) is changed. After a switching on command the dimming direction is preset to "darker" and after a switching off command the dimming direction is preset to "brighter". A short press of a button generates a switching command.

Technical manual

909201, 32 pages

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Application program description

November 2010

25 CO IR-DECODER 909201

Obj	Name	Function	Length	Flag	
0	C00/32 >>1, bell function	On / Off	1 Bit	CT	
2	C00/32 <<0, bell function	On / Off	1 Bit	СТ	
	•••				
217	C31/63 >>1, bell function	On / Off	1 Bit	СТ	
219	C31/63 <<0, bell function	On / Off	1 Bit	CT	
On p corre "Off"	On pressing a button a switching "On" telegram is sent via the corresonding object and on releasing the button a telegram "Off" is sent.				

IR decoder functions, single buttons -Door bell function: drücken = On, loslassen = Off

IR decoder functions, single buttons -Door bell function: press = Off, release = On

Obj	Name	Function	Length	Flag
0	C00/32 >>1, bell function	Off /On	1 Bit	СТ
2	C00/32 <<0, bell function	Off /On	1 Bit	СТ
	•••			
217	C31/63 >>1, bell function	Off /On	1 Bit	СТ
219	C31/63 <<0, bell function	Off /On	1 Bit	СТ
On pressing a button a switching "Off" telegram is sent via the corresonding object and on releasing the button a telegram "On" is sent.				

IR decoder functions, single buttons -Solar protection, Slats: up / down / stop (1-button solar protection control)

Obj	Name	Function	Length	Flag
0	C00/32 >>1, slats	stop / open / close	1 Bit	СТ
1	C00/32 >>1, venetian blind	up/ down	1 Bit	CWT
2	C00/32 <<0, slats	stop / open / close	1 Bit	СТ
3	C00/32 <<0, venetian blind	up/ down	1 Bit	CWT
217	C31/63 >>1, slats	stop / open / close	1 Bit	СТ
218	C31/63 >>1, venetian blind	up/ down	1 Bit	CWT

Obj	Name	Function	Length	Flag
219	C31/63 <<0, slats	stop / open / close	1 Bit	СТ
220	C31/63 <<0, solar protection	up/ down	1 Bit	CWT
On th "Dow the m protecoperator open solar protecoperator a corr the solar comr solar comr adjus	ne first long operation of vn" telegram is sent via the lext long operation of the action "Up" telegram is se ation the motion direction ach short operation of a " is sent via the correspon- protection was moved up, on mmand "stop / slat close" lat command (open / clo tion of the last motion (or g press of a button gene protection and a short p- mand stopping the motion ting the slats by a step.	a button a mo ne correspondi e same button ent. On each fo n (Up/Down) i button a comr nding object ir lown. If previo each short op is sent. The m se) is always o down / up) con- reates a comm- ress of a butto on of the solar	ove solar p ing object a move so ollowing lo s changed mand "stop f previousl usly the so reration of otion direc pposite to nmand. and to mov on generat protection	rotection and on blar .ng .) / slats y the blar a button ction of the ve the es a n or

IR decoder functions, single buttons -Roller shutter control: up / down / stop (1 –button roller shutter control)

Obj	Name	Function	Length	Flag
0	C00/32 >>1, roller shutter	stop	1 Bit	CT
1	C00/32 >>1, roller shutter	up/ down	/ down 1 Bit C	
2	C00/32 <<0, roller shutter	stop	1 Bit	СТ
3	C00/32 <<0, roller shutter	up/ down	1 Bit	СТ
217	C31/63 >>1, roller shutter	stop	1 Bit CT	CT
218	C31/63 >>1, roller shutter	up/ down 1 Bit CT	CT	
219	C31/63 <<0, roller shutter	stop	1 Bit CT	СТ
220	C31/63 <<0, roller shutter	up/ down	n 1 Bit	CT
On the first long operation of a button a move roller shutter "Down" telegram is sent via the corresponding object and on the next long operation of the same button a move roller shutter "Up" telegram is sent. On each following long opera- tion the motion direction (Up/Down) is changed. On each short operation of a button a command "stop" is sent via the corresponding object. A long press of a button generates a command to move the roller shutter and a short press of a button generates a command stopping the motion of the roller shutter.				

Technical manual

November 2010

25 CO IR-DECODER 909201

IR decoder functions, single buttons -1-bit scene 1: recall / save

Obj	Name	Function	Length	Flag
0	C00/32 >>1, scene 1	recall	1 Bit	CT
1	C00/32 >>1, scene 1	save	1 Bit	CT
2	C00/32 <<0, scene 1	recall	1 Bit	CT
3	C00/32 <<0, scene 1	save	1 Bit	CT
217	C31/63 >>1, scene 1	recall	1 Bit	СТ
218	C31/63 >>1, scene 1	save	1 Bit	СТ
219	C31/63 <<0, scene 1	recall	1 Bit	CT
220	C31/63 <<0, scene 1	save	1 Bit	CT

On short operation of a button a telegram "scene 1 recall" is sent via the corresponding object and on long operation of the button a telegram "scene 1 save" (object value = 0) is sent. A short operation of a button generates a command recalling a preset scene and a long operation of a button generates a command saving the current settings of a scene.

IR decoder functions, single buttons -1-bit scene 2: recall / save

Obj	Name	Function	Length	Flag
0	C00/32 >>1, scene 2	recall	1 Bit	CT
1	C00/32 >>1, scene 2	save	1 Bit	CT
2	C00/32 <<0, scene 2	recall	1 Bit	CT
3	C00/32 <<0, scene 2	save	1 Bit	CT
217	C31/63 >>1, scene 2	recall	1 Bit	СТ
218	C31/63 >>1, scene 2	save	1 Bit	СТ
219	C31/63 <<0, scene 2	recall	1 Bit	CT
220	C31/63 <<0, scene 2	save	1 Bit	CT

On short operation of a button a telegram "scene 2 recall" is sent via the corresponding object and on long operation of the button a telegram "scene 2 save" (object value = 1) is sent. A short operation of a button generates a command recalling a preset scene and a long operation of a button generates a command saving the current settings of a scene.

IR decoder functions, single buttons -8-bit scene: recall respectively recall or save

Obj	Name	Function	Length	Flag
0	C00/32 >>1, 8-bit scene	recall / save	1 Byte	СТ
2	C00/32 <<0, 8-bit scene	recall / save	1 Byte	СТ
217	C31/63 >>1, 8-bit scene	recall / save	1 Byte	СТ
219	C31/63 <<0, 8-bit scene	recall / save	1 Byte	СТ
On operation of a button the scene with the configured scene number (scene 1 scene 64) is recalled or saved via the corresponding object. Bits 0 through 5 of the 8-bit scene object contain the scene number (164). The most significant bit 7 determines if a scene is recalled (bit value = 0) or saved (bit value = 1). Bit 6 is not used.				

IR decoder functions, single buttons -Send 8-bit value: percentage value

Obj	Name	Function	Length	Flag
0	C00/32 >>1, 8-bit value	value	1 Byte	СТ
2	C00/32 <<0, 8-bit value	value	1 Byte	СТ
217	C31/63 >>1, 8-bit value	value	1 Byte	СТ
219	C31/63 <<0, 8-bit value	value	1 Byte	СТ
On operation of a button the percentage value (0 100%) configured for this button is sent via the corresponding object.				

For each button with this function an additonal function may be configured. For more information about the additional objects see description under "Functions second telegram".

IR decoder functions, single buttons -Send 8-bit value: decimal value

Obj	Name	Function	Length	Flag
0	C00/32 >>1, 8-bit value	value	1 Byte	CT
2	C00/32 <<0, 8-bit value	value	1 Byte	CT

Technical manual

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25 CO IR-DECODER 909201

Obj	Name	Function	Length	Flag
217	C31/63 >>1, 8-bit value	value	1 Byte	СТ
219	C31/63 <<0, 8-bit value	value	1 Byte	СТ
On operation of a button the 8-bit value (0 255) configured for this button is sent via the corresponding object.				

For each button with this function an additonal function may be configured. For more information about the additional objects see description under "Functions second telegram".

IR decoder functions, single buttons -Send 16-bit value: temperature value

Obj	Name	Function	Length	Flag
0	C00/32 >>1, temperature	value	2 Byte	CT
2	C00/32 <<0, temperature	value	2 Byte	CT
217	C31/63 >>1, temperature	value	2 Byte	СТ
219	C31/63 <<0, temperature	value	2 Byte	CT
On operation of a button the temperature value (0 40°C) configured for this button is sent via the corresponding object.				

For each button with this function an additonal function may be configured. For more information about the additional objects see description under "Functions second telegram".

IR decoder functions, single buttons -Send 16-bit value: brightness value

Obj	Name	Function	Length	Flag		
0	C00/32 >>1, Brightness	value	2 Byte	CT		
2	C00/32 <<0, Brightness	value	2 Byte	CT		
217	C31/63 >>1, Brightness	value	2 Byte	CT		
219	C31/63 <<0, Brightness	value	2 Byte	CT		
On operation of a button the brightness value (0 2000 lux)						
confi	gured for this button is sent	via the corre	esponding	configured for this button is sent via the corresponding object.		

For each button with this function an additonal function may be configured. For more information about the additional objects see description under "Functions second telegram". IR decoder functions, single buttons -Send 16-bit value: decimal value

Obj	Name	Function	Length	Flag
0	C00/32 >>1, 16-bit value	value	2 Byte	СТ
2	C00/32 <<0, 16-bit value	value	2 Byte	СТ
217	C31/63 >>1, 16-bit value	value	2 Byte	СТ
219	C31/63 <<0, 16-bit value	value	2 Byte	СТ
On o confi	On operation of a button the percentage value (0 + 65535) configured for this button is sent via the corresponding object.			

For each button with this function an additonal function may be configured. For more information about the additional objects see description under "Functions second telegram".

IR decoder functions, single buttons -Forced on, inactive / off, inactive

For each button with this function an additonal function may be configured. These are described in this section as the possible objects only appear in this context and are different from those described under "Functions second telegram".

Obj	Name	Function	Length	Flag
0	C00/32 >>1, forced control	On / Off / inactive	2 Bit	СТ
1	C00/32 >>1, 2nd telegram, Switching	On / Off	1 Bit	СТ
2	C00/32 <<0, forced control	On / Off / inactive	2 Bit	СТ
3	C00/32 <<0, 2nd telegram, Switching	On / Off	1 Bit	СТ
217	C31/63 >>1, forced control	On / Off / inactive	2 Bit	СТ
218	C31/63 >>1, 2nd telegram, Switching	On / Off	1 Bit	ст
219	C31/63 <<0, forced control	On / Off / inactive	2 Bit	СТ
220	C31/63 <<0, 2nd telegram, Switching	On / Off	1 Bit	СТ
On short operation of the IR channel button ">>1" a "forced on" (binary value = 11) telegram and on short operation of the IR channel button "<<0" a "forced off" (binary value = 10) is sent via the corresponding object. Additionally, depending on the configuration an "On" or "Off"				

November 2010

25 CO IR-DECODER 909201

Obi Name Function Length Flag		
witching compand is contain the company of the first of the company of the compan		
the second telegram of each button		
On long operation of the ID sharped button as 1" a "depativete		
forced control" (biper using 01) telegrom and on long		
forced control (binary value = 01) telegram and on long		
operation of the IR channel button "<<0 a deactivate forced		
control (binary value = 00) is sent via the corresponding		
Object. Additionally, depending on the configuration on "On" or "Off"		
switching command is continue to corresponding object for		
the second tologram of each button		
The second telegram can be activated with the following		
softings:		
short button operation = $\Omega n_{\rm c}$ long button operation = $\Omega n_{\rm c}$		
short button operation = On long button operation = Off		
short button operation = Off long button operation = On		
short button operation = Off long button operation = Off		
E.g. when forced control is activated (short operation of		
button) then switching "On" and when forced control is		
deactivated (long operation of button) then switching "Off"		
can be sent via the corresponding object for the second		
telegram.		
These switching commands can be used to control actuators		
without 2-bit forced control object.		
A short button operation generates a command activating		
and a long button operation generates a command deactivat-		
ing forced control.		

IR decoder functions, single buttons -Forced off, inactive / on, inactive

For each button with this function an additonal function may be configured. These are described in this section as the possible objects only appear in this context and are different from those described under "Functions second telegram".

Obj	Name	Function	Length	Flag
0	C00/32 >>1, forced control	On / Off / inactive	2 Bit	CT
1	C00/32 >>1, 2nd telegram, Switching	On / Off	1 Bit	СТ
2	C00/32 <<0, forced control	On / Off / inactive	2 Bit	СТ
3	C00/32 <<0, 2nd telegram, Switching	On / Off	1 Bit	СТ

Obj	Name	Function	Length	Flag	
217	C31/63 >>1,	On / Off /	2 pi+	CT	
217	forced control	inactive	Z DIL	CI	
	C31/63 >>1,				
218	2nd telegram,	On / Off	1 Bit	CT	
	Switching				
219	C31/63 <<0,	On / Off /	2 Bit	СТ	
	forced control	inactive	2 010		
	C31/63 <<0,				
220	2nd telegram,	On / Off	1 Bit	CT	
	Switching				
On sh	nort operation of the IR chan	nel button "	>>1" a "for	ced	
ott" (binary value = 10) telegram	and on short	t operatior	n of the	
IK cha	annei putton "<<0" a "forced	on" (binary	value = 11) IS	
sent v	ionally depending on the se	Infiguration	an "On" a	"Off"	
swite	hing command is sent via th	e correspond	an Un Or ding objec	t for	
the c	econd telegram of each butt	on	ung objec		
On lo	ng operation of the IR chan	nel button >	->1" a "dea	ctivate	
force	d control" (binary value = 00) telegram a	nd on lone	a	
opera	tion of the IR channel butto	n "<<0" a "de	eactivate f	orced	
contr	ol" (binary value = 01) is sen	t via the cor	respondin	g	
objec	t.		•	-	
Addit	ionally, depending on the co	onfiguration	an "On" oi	"Off"	
switc	hing command is sent via th	e correspon	ding objec	t for	
the se	econd telegram of each butt	on.			
The	second telegram can be a	ictivated wi	th the fo	llowing	
settir	igs:				
short	putton operation = On lor	ig button op	eration = (Jn	
snort	putton operation = On for	ig button op	eration = (UTT On	
short	short button operation = Off long button operation = On				
Fa	when forced control is a	ry buildin Op		tion of	
L.y. hutto	n) then switching "On" a	nd when f	orced con	ntrol is	
deact	deactivated (long operation of button) then switching "Off"				
can	can be sent via the corresponding object for the second				
teleg	telegram.				
These	These switching commands can be used to control actuators				
witho	without 2-bit forced control object.				
A sho	A short button operation generates a command activating				
and a	and a long button operation generates a command deactivat-				
ing fo	orced control.				

25 CO IR-DECODER 909201

IR decoder functions, button pairs -Switching, dimming: On, brighter / Off, darker

Obj	Name	Function	Length	Flag
0	C00/32, switching	On / Off	1 Bit	CT
2	C00/32, dimming	brighter / darker	4 Bit	СТ
217	C31/63, switching	On / Off	1 Bit	CT
219	C31/63, dimming	brighter / darker	4 Bit	СТ

On a short operation of the buttons >>1, B1, C1 or D1 an "On" switching telegram is sent via the corresponding object and on long operation a dimming "brighter" telegram is sent via the corresponding object.

On a short operation of the buttons <<0, B2, C2 or D2 an "Off" switching telegram is sent via the corresponding object and on long operation a dimming "darker" telegram is sent via the corresponding object.

A short button operation generates a command for switching and a long button operation one for dimming the lighting.

IR decoder functions, button pairs -Switching, dimming: Off, darker / On, brighter

Obj	Name	Function	Length	Flag
0	C00/32, switching	Off /On	1 Bit	CT
2	C00/32, dimming	darker / brighter	4 Bit	СТ
217	C31/63, switching	Off /On	1 Bit	CT
219	C31/63, dimming	darker / brighter	4 Bit	СТ

On a short operation of the buttons >>1, B1, C1 or D1 an "Off" switching telegram is sent via the corresponding object and on long operation a dimming "darker" telegram is sent via the corresponding object.

On a short operation of the buttons <<0, B2, C2 or D2 an "On" switching telegram is sent via the corresponding object and on long operation a dimming "brighter" telegram is sent via the corresponding object.

A short button operation generates a command for switching and a long button operation one for dimming the lighting.

IR decoder functions, button pairs -Switching, dimming: Toggle, brighter / Toggle, darker

Obj	Name	Function	Length	Flag		
0	C00/32, switching	Toggle	1 Bit	CWT		
2	C00/32, dimming	brighter / darker	4 Bit	СТ		
217	C31/63, switching	Toggle	1 Bit	CWT		
219	C31/63, dimming	brighter / darker	4 Bit	СТ		
opera each sent On a dimm likew "dark A sho	On the first short operation of a button an "On" telegram is sent via the corresponding object and on the next short operation of the same button an "Off" telegram is sent. On each following short operation the value is inverted and then sent (toggle function). On a long operation of a button >>1, B1, C1 or D1 a "brighter" dimming telegram is sent via the corrseponding object and likewise on long operation of a button <<0, B2, C2 or D2 a "darker" dimming telegram is sent.					

IR decoder functions, button pairs -Switching, dimming: Toggle, darker / Toggle, brighter

Obj	Name	Function	Length	Flag
0	C00/32, switching	Toggle	1 Bit	CWT
2	C00/32, dimming	darker / brighter	4 Bit	СТ
217	C31/63, switching	Toggle	1 Bit	CWT
219	C31/63, dimming	darker / brighter	4 Bit	СТ
On the first short operation of a button an "On" telegram is sent via the corresponding object and on the next short operation of the same button an "Off" telegram is sent. On each following short operation the value is inverted and then sent (toggle function). On a long operation of a button >>1, B1, C1 or D1 a "darker" dimming telegram is sent via the corresponding object and				

likewise on long operation of a button <<0, B2, C2 or D2 a "brighter" dimming telegram is sent.

A short press of a button generates a command switching and a long press of a button a command dimming the lighting.

Technical manual

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November 2010

25 CO IR-DECODER 909201

IR decoder functions, button pairs -Solar protection, slats: up / down

Obj	Name	Function	Length	Flag	
0	C00/32, slats	stop / open / close	1 Bit	СТ	
2	C00/32, venetian blind	up/ down	1 Bit	СТ	
•••					
217	C31/63, slats	stop / open / close	1 Bit	СТ	
219	C31/63, venetian blind	up/ down	1 Bit	СТ	
On lo	On long operation of buttons >>1, B1, C1 or D1 a move solar				

on long operation of buttons >>1, B1, C1 of D1 a move solar protection "Up" telegram is sent via the corresponding object and on short operation a command "stop / slats open". On long operation of buttons <<0, B2, C2 or D2 a move solar protection "Down" telegram is sent via the corresponding object and on short operation a command "stop / slats close". A long press of a button generates a command to move the solar protection and a short press of a button generates a command stopping the motion of the solar protection or adjusting the slats by a step.

IR decoder functions, button pairs -Solar protection, slats: down / up

Obj	Name	Function	Length	Flag
0	C00/32, slats	stop / close / open	1 Bit	СТ
2	C00/32, venetian blind	down / up	1 Bit	CT
•••				
217	C31/63, slats	stop / close / open	1 Bit	СТ
219	C31/63, venetian blind	down / up	1 Bit	СТ

On long operation of buttons >>1, B1, C1 or D1 a move solar protection "Down" telegram is sent via the corresponding object and on short operation a command "stop / slats close". On long operation of buttons <<0, B2, C2 or D2 a move solar protection "Up" telegram is sent via the corresponding object and on short operation a command "stop / slats open". A long press of a button generates a command to move the solar protection and a short press of a button generates a command stopping the motion of the solar protection or adjusting the slats by a step.

IR decoder functions, button pairs roller shutter: up, stop / down, stop

Obj	Name	Function	Length	Flag
0	C00/32, roller shutter	stop	1 Bit	CT
2	C00/32, roller shutter	up/ down	1 Bit	CT

Technical manual

909201, 3

217	C31/63, roller shutter	stop	1 Bit	CT
219	C31/63, roller shutter	up/ down	1 Bit	CT
On long operation of buttons >>1, B1, C1 or D1 a move roller shutter "Down" telegram is sent via the corresponding object and on short operation a command "stop". On long operation of buttons <<0, B2, C2 or D2 a move roller shutter "Up" telegram is sent via the corresponding object and on short operation a command "stop". A long press of a button generates a command to move the roller shutter and a short press of a button generates a command stopping the motion of the roller shutter.				

Function

Length

Flag

IR decoder functions, button pairs - roller shutter: down, stop / up, stop

Obj Name

Obj	Name	Function	Length	Flag
0	C00/32, roller shutter	stop	1 Bit	CT
2	C00/32, roller shutter	down / up	1 Bit	CT
217	C31/63, roller shutter	stop	1 Bit	CT
219	C31/63, roller shutter	down / up	1 Bit	CT
On long operation of buttons >>1, B1, C1 or D1 a move roller shutter "Up" telegram is sent via the corresponding object and on short operation of buttons <<0, B2, C2 or D2 a move roller shutter "Down" telegram is sent via the corresponding object and on short operation a command "stop". A long press of a button generates a command to move the roller shutter and a short press of a button generates a				

IR decoder functions, button pairs -Send percent value variable (increment / decrement)

Obj	Name	Function	Length	Flag	
0	C00/32, percentage (variable)	value	1 Byte	CWTU	
217	C31/63, percentage (variable)	value	1 Byte	CWTU	
217percentage (variable)value1 ByteCWTUOn short operation of buttons >>1, B1, C1 or D1 a telegram is sent via the corresponding object with a percentage value (0100%) incremented by the configured percentage step. On short operation of buttons <<0, B2, C2 or D2 a telegram is sent via the corresponding object with a percentage value (0100%) decremented by the configured percentage step. On long operation of buttons >>1, B1, C1 or D1 the percentage value 					

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25 CO IR-DECODER 909201

IR decoder functions, button pairs -Send percent value variable (decrement / increment)

Obj	Name	Function	Length	Flag	
0	C00/32, percentage (variable)	value	1 Byte	CWTU	
217	C31/63, percentage (variable)	value	1 Byte	CWTU	
On sl sent (01 On sl sent (01 On lo age v the c On lo age v	217percentage (variable)value1 ByteCWIUOn short operation of buttons >>1, B1, C1 or D1 a telegram is sent via the corresponding object with a percentage value (0100%) decremented by the configured percentage step. On short operation of buttons <<0, B2, C2 or D2 a telegram is sent via the corresponding object with a percentage value (0100%) incremented by the configured percentage step. On long operation of buttons >>1, B1, C1 or D1 the percent- age value is decremented step by step and sent cyclically via the corresponding object as long as the button is pressed. On long operation of buttons <<0, B2, C2 or D2 the percent- one operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operation of buttons <<0, B2, C2 or D2 the percent- operatio				

IR decoder functions, button pairs -Send 8-bit value variable (increment / decrement)

Obj	Name	Function	Length	Flag	
0	C00/32, 8-bit value (variable)	value	1 Byte	CWTU	
217	C31/63, 8-bit value (variable)	value	1 Byte	CWTU	
On short operation of buttons >>1, B1, C1 or D1 a telegram is sent via the corresponding object with an 8-bit value (0255) incremented by the configured step.					

On short operation of buttons <<0, B2, C2 or D2 a telegram is sent via the corresponding object with an 8-bit value (0...255) decremented by the configured step.

On long operation of buttons >>1, B1, C1 or D1 the 8-bit value is incremented step by step and sent cyclically via the corresponding object as long as the button is pressed.

On long operation of buttons <<0, B2, C2 or D2 the 8-bit value is decremented step by step and sent cyclically via the corresponding object as long as the button is pressed.

IR decoder functions, button pairs -Send 8-bit value variable (decrement / increment)

Obj	Name	Function	Length	Flag
0	C00/32, 8-bit value (variable)	value	1 Byte	CWTU
217	C31/63, 8-bit value (variable)	value	1 Byte	CWTU
On sh sent On sh sent incre On lc is dec spon On lc is inc spon	nort operation of buttons > via the corresponding obje- emented by the configured nort operation of buttons < via the corresponding obje- mented by the configured ong operation of buttons >: cremented step by step and ding object as long as the l ong operation of buttons <- remented step by step and ding object as long as the l	>1, B1, C1 c ct with an 8 step. <0, B2, C2 c ct with an 8 step. >1, B1, C1 o d sent cyclica outton is pre <0, B2, C2 o sent cyclica putton is pre	or D1 a tele -bit value (-bit value (-bit value (r D1 the 8- ally via the ssed. r D2 the 8- Illy via the ssed.	egram is (0255) egram is (0255) bit value e corre- bit value corre-

IR decoder functions, button pairs -1-bit scene 1/2 recall/save

Obj	Name	Function	Length	Flag
0	C00/32, scene 1 / 2	recall	1 Bit	СТ
2	C00/32, scene 1 / 2	save	1 Bit	СТ
217	C31/63, scene 1 / 2	recall	1 Bit	СТ
219	C31/63, scene 1 / 2	save	1 Bit	СТ
On short operation of buttons >>1, B1, C1 or D1 a telegram "scene 1 recall" is sent via the corresponding object and on long operation of the button a telegram "scene 1 save" (object value = 0) is sent. On short operation of buttons <<0, B2, C2 or D2 a telegram "scene 2 recall" is sent via the corresponding object and on				

value = 1) is sent. A short operation of a button generates a command recalling a preset scene and a long operation of a button generates a

a preset scene and a long operation of a button generates a command saving the current settings of a scene.

Technical manual

November 2010

25 CO IR-DECODER 909201

IR decoder functions, button pairs -1-bit scene 2 / 1 recall / save

Obj	Name	Function	Length	Flag
0	C00/32, scene 2 / 1	recall	1 Bit	СТ
2	C00/32, scene 2 / 1	save	1 Bit	СТ
217	C31/63, scene 2 / 1	recall	1 Bit	СТ
219	C31/63, scene 2 / 1	save	1 Bit	СТ

On short operation of buttons >>1, B1, C1 or D1 a telegram "scene 2 recall" is sent via the corresponding object and on long operation of the button a telegram "scene 2 save" (object value = 1) is sent.

On short operation of buttons <<0, B2, C2 or D2 a telegram "scene 1 recall" is sent via the corresponding object and on long operation of the button a telegram "scene 1 save" (object value = 0) is sent.

A short operation of a button generates a command recalling a preset scene and a long operation of a button generates a command saving the current settings of a scene.

IR decoder functions, button pairs -8-bit scene recall and save

Obj	Name	Function	Length	Flag
0	C00/32 >>1, 8-bit scene	recall / save	1 Byte	СТ
2	C00/32 <<0, 8-bit scene	recall / save	1 Byte	СТ
•••				
217	C31/63 >>1, 8-bit scene	recall / save	1 Byte	СТ
219	C31/63 <<0, 8-bit scene	recall / save	1 Byte	СТ
On short operation of a button the scene with the configured scene number (scene 1 scene 64) is recalled and on long operation of the button the scene is saved via the corresponding object.				

number (1...64). The most significant bit 7 determines if a scene is recalled (bit value = 0) or saved (bit value = 1). Bit 6 is not used.

A short operation of a button generates a command recalling a preset scene and a long operation of a button generates a command saving the current settings of a scene.

IR decoder functions, button pairs -Forced on, inactive / off, inactive

Obj	Name	Function	Length	Flag
0	C00/32 >>1, forced control	forced On / inactive	2 Bit	СТ
2	C00/32 <<0, forced control	forced Off / inactive	2 Bit	СТ
217	C31/63 >>1, forced control	forced On / inactive	2 Bit	СТ
219	C31/63 <<0, forced control	forced Off / inactive	2 Bit	СТ

On short operation of the IR channel button ">>1" a "forced on" (binary value = 11) telegram and on short operation of the IR channel button "<<0" a "forced off" (binary value = 10) is sent via the corresponding object.

On long operation of the IR channel button $_{>>1}$ " a "deactivate forced control" (binary value = 01) telegram and on long operation of the IR channel button $_{<<0}$ " a "deactivate forced control" (binary value = 00) is sent via the corresponding object.

A short button operation generates a command activating and a long button operation generates a command deactivating forced control.

IR decoder functions, button pairs -Forced off, inactive / on, inactive

Obj	Name	Function	Length	Flag
0	C00/32 >>1,	forced Off /	2 Bit	СТ
	forced control	inactive	ZDIL	CI
2	C00/32 <<0, forced	forced On /	2 Di+	CT
2	control	inactive	ZDIL	CI
217	C31/63 >>1,	forced Off /	2 D:+	СТ
217	forced control	inactive	ZBIL	
210	C31/63 <<0, forced	forced On /	2 Di+	CT
219	control	inactive	ZBIL	CI
On sł	nort operation of the IR o	hannel buttor	ı ">>1" a "f	orced
off" (binary value = 10) telegr	am and on she	ort operati	on of the

off" (binary value = 10) telegram and on short operation of the IR channel button "<<0" a "forced on" (binary value = 11) is sent via the corresponding object.

On long operation of the IR channel button ">>1" a "deactivate forced control" (binary value = 00) telegram and on long operation of the IR channel button "<<0" a "deactivate forced control" (binary value = 01) is sent via the corresponding object.

A short button operation generates a command activating and a long button operation generates a command deactivating forced control.

Technical manual

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

November 2010

25 CO IR-DECODER 909201

Functions/Objects for an additional button function (send additional or second telegram) for IR channels

If an additional function per button can be selected when configuring single buttons or button pairs, then one of these additional functions may be sent after a time delay or on long operation of a button via a second communication object per button:

- Switching On
- Switching Off
- Send percentage
- Send 8-bit value
- Send temperature value
- Send brightness value
- Send 16-bit value
- 1-bit scene: recall / save scene 1
- 1-bit scene: recall / save scene 2
- 8-bit scene: recall
- Forced on
- Forced off
- Forced control off

IR decoder functions, additional button functions – Switching: On

Obj	Name	Function	Length	Flag		
1	C00/32 >>1, 2nd telegram, switching	On	1 Bit	СТ		
3	C00/32 <<0, 2nd telegram, switching	On	1 Bit	СТ		
218	C31/63 >>1, 2nd telegram, switching	On	1 Bit	СТ		
220	C31/63 <<0, 2nd telegram, switching	On	1 Bit	СТ		
On o mane imme objec	On operation of one of the buttons the switching "on" com- mand configured as second telegram for this button is sent immediately or time delayed via the corresponding second object					

IR decoder functions, additional button functions – Switching: Off

Obj	Name	Function	Length	Flag
1	C00/32 >>1, 2nd telegram, switching	Off	1 Bit	СТ
3	C00/32 <<0, 2nd telegram, switching	Off	1 Bit	СТ

218	C31/63 >>1,	Off	1 Bit	СТ
	2nd telegram, switching			
220	C31/63 <<0,	Off	1 D:+	CT
	2nd telegram, switching	UII	IDIL	CI
On operation of one of the buttons the switching "off" com-				

mand configured as second telegram for this button is sent immediately or time delayed via the corresponding second object.

IR decoder functions, additional button functions – Send percentage

Obj	Name	Function	Length	Flag
1	C00/32 >>1, 2nd telegram, Percentage value	value	1 Byte	СТ
3	C00/32 <<0, 2nd telegram, Percentage value	value	1 Byte	СТ
218	C31/63 >>1, 2nd telegram, Percentage value	value	1 Byte	СТ
220	C31/63 <<0, 2nd telegram, Percentage value	value	1 Byte	СТ
On operation of one of the buttons the percent value (0100%) configured as second telegram for this button is sent immediately or time delayed via the corresponding second object.				

IR decoder functions, additional button functions – Send 8-bit value

Obj	Name	Function	Length	Flag
1	C00/32 >>1, 2nd telegram, 8-bit value	value	1 Byte	СТ
3	C00/32 <<0, 2nd telegram, 8-bit value	value	1 Byte	СТ
218	C31/63 >>1, 2nd telegram, 8-bit value	value	1 Byte	СТ
220	C31/63 <<0, 2nd telegram, 8-bit value	value	1 Byte	СТ
On o confi ately	On operation of one of the buttons the 8-bit value (0255) configured as second telegram for this button is sent immedi- ately or time delayed via the corresponding second object.			

Technical manual

November 2010

25 CO IR-DECODER 909201

IR decoder functions, additional button functions – Send temperature value

Obj	Name	Function	Length	Flag
1	C00/32 >>1, 2nd telegram, temperature	value	2 Byte	СТ
3	C00/32 <<0, 2nd telegram, temperature	value	2 Byte	СТ
218	C31/63 >>1, 2nd telegram, temperature	value	2 Byte	СТ
220	C31/63 <<0, 2nd telegram, temperature	value	2 Byte	СТ
On operation of one of the buttons the temperature value (040°C) configured as second telegram for this button is sent immediately or time delayed via the corresponding second object.				

IR decoder functions, additional button functions – Send brightness value

Obj	Name	Function	Length	Flag
1	C00/32 >>1, 2nd telegram, Brightness	value	2 Byte	СТ
3	C00/32 <<0, 2nd telegram, Brightness	value	2 Byte	СТ
218	C31/63 >>1, 2nd telegram, Brightness	value	2 Byte	СТ
220	C31/63 <<0, 2nd telegram, Brightness	value	2 Byte	СТ
On operation of one of the buttons the brightness value (02000 Lux) configured as second telegram for this button is sent immediately or time delayed via the corresponding second object.				

IR decoder functions, additional button functions – Send 16-bit value

Obj	Name	Function	Length	Flag
1	C00/32 >>1, 2nd telegram, 16-bit value	value	2 Byte	СТ
а	C00/32 <<0, 2nd telegram, 16-bit value	value	2 Byte	СТ
218	C31/63 >>1, 2nd telegram, 16-bit value	value	2 Byte	СТ
220	C31/63 <<0, 2nd telegram, 16-bit value	value	2 Byte	СТ
On operation of one of the buttons the 16-bit value (065535) configured as second telegram for this button is sent immediately or time delayed via the corresponding second object.				

IR decoder functions, additional button functions – 1-bit scene: recall / save scene 1

Obj	Name	Function	Length	Flag
1	C00/32 >>1, 2nd telegram, scene 1	recall / save	1 Bit	СТ
3	C00/32 <<0, 2nd telegram, scene 1	recall / save	1 Bit	СТ
218	C31/63 >>1, 2nd telegram, scene 1	recall / save	1 Bit	СТ
220	C31/63 <<0, 2nd telegram, scene 1	recall / save	1 Bit	СТ
On operation of one of the buttons the scene 1 (object value = 0) configured as second telegram for this button is sent immediately or time delayed via the corresponding second object. Scene 1 is recalled if this object is connected to a 1-bit scene object for recalling a scene 3 core 1 is caudif this				

object is connected to a 1-bit scene object for saving a scene.

Technical manual

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

3.8.1.2.1/18

25 CO IR-DECODER 909201

IR decoder functions, additional button functions – 1-bit scene: recall / save scene 2

Obj	Name	Function	Length	Flag
1	C00/32 >>1, 2nd telegram, scene 2	recall / save	1 Bit	СТ
3	C00/32 <<0, 2nd telegram, scene 2	recall / save	1 Bit	СТ
218	C31/63 >>1, 2nd telegram, scene 2	recall / save	1 Bit	СТ
220	C31/63 <<0, 2nd telegram, scene 2	recall / save	1 Bit	СТ
On operation of one of the buttons the scene 2 (object value = 1) configured as second telegram for this button is sent immediately or time delayed via the corresponding second object. Scene 2 is recalled if this object is connected to a 1-bit scene object for recalling a scene. Scene 2 is saved if this object is connected to a 1-bit scene object is connected to a 1-bit scene object for saving a scene.				

IR decoder functions, additional button functions – 8-bit scene recall

Obj	Name	Function	Length	Flag
1	C00/32 >>1, 2nd telegram, 8-bit scene	recall / save	1 Byte	СТ
3	C00/32 <<0, 2nd telegram, 8-bit scene	recall / save	1 Byte	СТ
218	C31/63 >>1, 2nd telegram, 8-bit scene	recall / save	1 Byte	СТ
220	C31/63 <<0, 2nd telegram, 8-bit scene	recall / save	1 Byte	СТ
On o	peration of one of the buttor	ns the scene	with the p	oreset

number (scene 1 ... scene 64) configured as second telegram for this button is recalled or saved immediately or time delayed via the corresponding second object. Bits 0 through 5 of the 8-bit scene object contain the scene number (1...64). The most significant bit 7 determines if a scene is recalled (bit value = 0) or saved (bit value = 1). Bit 6 is not used.

IR decoder functions, additional button functions – forced on

Obj	Name	Function	Length	Flag
1	C00/32 >>1, 2nd telegram, forced control	forced On	2 Bit	СТ
3	C00/32 <<0, 2nd telegram, forced control	forced On	2 Bit	СТ
218	C31/63 >>1, 2nd telegram, forced control	forced On	2 Bit	СТ
220	C31/63 <<0, 2nd telegram, forced control	forced On	2 Bit	СТ
On operation of one of the buttons the "forced on" command (binary value = 11) configured as second telegram for this button is sent immediately or time delayed via the correspond- ing second object.				

IR decoder functions, additional button functions – forced off

Obj	Name	Function	Length	Flag
1	C00/32 >>1, 2nd telegram, forced control	forced Off	2 Bit	СТ
3	C00/32 <<0, 2nd telegram, forced control	forced Off	2 Bit	СТ
218	C31/63 >>1, 2nd telegram, forced control	forced Off	2 Bit	СТ
220	C31/63 <<0, 2nd telegram, forced control	forced Off	2 Bit	СТ
On operation of one of the buttons the "forced on" command (binary value = 10) configured as second telegram for this button is sent immediately or time delayed via the correspond- ing second object.				

Technical manual

November 2010

25 CO IR-DECODER 909201

IR decoder functions, additional button functions – forced control off

Obj	Name	Function	Length	Flag
1	C00/32 >>1, 2nd telegram, forced control	forced control off	2 Bit	СТ
3	C00/32 <<0, 2nd telegram, forced control	forced control off	2 Bit	СТ
218	C31/63 >>1, 2nd telegram, forced control	forced control off	2 Bit	СТ
220	C31/63 <<0, 2nd telegram, forced control	forced control off	2 Bit	СТ
On operation of one of the buttons the "forced control off" command (binary value = 00) configured as second telegram for this button is sent immediately or time delayed via the corresponding second object.				

IR decoder functions – IR temperature

Obj	Name	Function	Length	Flag
4	C00/32, temperature	value	2 Byte	CRT
11	C01/33, temperature	value	2 Byte	CRT
18	C02/34, temperature	value	2 Byte	CRT
207	C13/45, temperature	value	2 Byte	CRT
214	C14/46, temperature	value	2 Byte	CRT
221	C31/63, temperature	value	2 Byte	CRT
On reception of the respective IR signals a telegram with the temperature value received is sent onto the bus.				

IR decoder functions – IR brightness

Obj	Name	Function	Length	Flag
5	COO/32, Brightness	value	2 Byte	CRT
12	C01/33, Brightness	value	2 Byte	CRT
17	C02/34, Brightness	value	2 Byte	CRT
208	C13/45, Brightness	value	2 Byte	CRT
215	C14/46, Brightness	value	2 Byte	CRT
222	C31/63, Brightness	value	2 Byte	CRT
On reception of the respective IR signals a telegram with the brightness value received is sent onto the bus.				

IR decoder functions - IR presence

Obj	Name	Function	Length	Flag
6	C00/32, presence	1 = presence	1 Bit	CRT
13	C01/33, presence	1 = presence	1 Bit	CRT
20	C02/34, presence	1 = presence	1 Bit	CRT
209	C13/45, presence	1 = presence	1 Bit	CRT
216	C14/46, presence	1 = presence	1 Bit	CRT
223	C31/63, presence	1 = presence	1 Bit	CRT
On reception of the respective IR signals a telegram with the presence value received is sent onto the bus.				

Technical manual

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

3.8.1.2.1/20

25 CO IR-DECODER 909201

IR decoder functions – IR ID

Obj	Name	Function	Length	Flag
224	IR-ID	Nummer	2 Byte	CRWT
On reception of the respective IR signals a telegram with the ID number received is sent onto the bus.				

Parameter

Note

The number of parameter tabs presented in the ETS menu and their names may vary as they are controlled by the parameter settings.

General

General		
Timing settings		
Detect long keypress for dimming / solar protection after	0.5 seconds	
Detect long keypress for saving scenes after	5.0 seconds	
Detect long keypress for disabling forced control after	1.0 seconds	
Detect long keypress for sending variable value after	0.5 seconds	
Period for sending variable value	0.5 seconds	
IR function		
IR channel evaluation	IR-Channel 031	
Forward IR temperature telegrams	disabled	
Forward IR brightness telegrams	disabled	
Forward IR presence telegrams	disabled	
Forward IR-ID telegrams	disabled 💌	

Timing Settings

Parameter	Settings	
Detect long key press for dimming / solar protection after	0.5 ; 0.6; 0.8; 1.0; 1.2; 1.5; 2.0; 2.5; 3.0; 4.0; 5.0; 6.0; 7.0; 10.0 seconds	
This parameter determines the time for distinguishing bet- ween short / long button operation for switching / dimming respectively solar protection control. If a button is pressed shorter than the configured time then a switching respectively slat control command is executed. If pressed longer a dimming respectively venetian blind or roller shutter control command is executed. Note:		
The long key press is 0.5 seconds longer for the IR hand-held remote 5WG1 425-7AB21 and the IR wall switches 5WG1 420- 3AB11, 5WG1 420-3AB12, 5WG1 421-3AB11, 5WG1 421- 3AB12, 5WG1 422-3AB11 and 5WG1 422-3AB12		

November 2010

25 CO IR-DECODER 909201

Parameter	Settings	
Detect long key press for	0.5; 0.6; 0.8; 1.0; 1.2; 1.5;	
saving scenes after	2.0; 2.5; 3.0; 4.0; 5.0 ; 6.0;	
	7.0; 10.0 seconds	
This parameter determines the time for distinguishing be- tween short / long button operation for recalling / saving a		
If a button is pressed shorter	than the configured time then	
the corresponding scene is r	ecalled. If pressed longer the	
scene is saved. When the co	mmand for saving a scene is	
executed the status LED of the	button flashes for the duration	
of about 2 seconds.		
The long key press is 0.5 seco	nds longer for the IR hand-held	
remote 5WG1 425-7AB21 and	the IR wall switches 5WG1 420-	
3AB11, 5WG1 420-3AB12, 5	5WG1 421-3AB11, 5WG1 421-	
3AB12, 5WG1 422-3AB11 and	5WG1 422-3AB12.	
Detect long key press for	0.5; 0.6; 0.8; 1.0 ; 1.2; 1.5;	
disabling forced control	2.0; 2.5; 3.0; 4.0; 5.0; 6.0;	
This parameter determine of	7.0; 10.0 seconds	
tween short / long button oper	ration for activating / deactivat-	
ing forced control.	ation for activating / deactivat	
If a button is pressed shorter	than the configured time then	
the corresponding forced c	ontrol command (forced on	
respectively forced off) is ser	nt. If pressed longer a forced	
control off command is sent.		
Note: The long key pross is 0.5 second	ade langer for the IP hand held	
remote 5WG1 425-7AB21 and	the IR wall switches 5WG1 420-	
3AB11, 5WG1 420-3AB12, 5	5WG1 421-3AB11, 5WG1 421-	
3AB12, 5WG1 422-3AB11 and	5WG1 422-3AB12.	
Detect long key press for	0.5 ; 0.6; 0.8; 1.0; 1.2; 1.5;	
sending variable value after	2.0; 2.5; 3.0; 4.0; 5.0; 6.0;	
	7.0; 10.0 seconds	
this parameter determines the tween short I long button of	ne time for distinguishing be-	
values.	peration for sending variable	
If a button is pressed shorter than the configured time then		
the current value of the communication object is sent. If		
pressed longer the current value is sent first and subsequently,		
for as long as the button is pressed, the current value incre-		
cyclically.		
Note:		
The long key press is 0.5 seconds longer for the IR hand-held		
remote 5WG1 425-/AB21 and the IR wall switches 5WG1 420-		
3AD11, 3WG1420-3AB12, 3WG1421-3AB11, 3WG1421- 3AR12 5WG1422-3AR11 and 5WG1422-3AR12		
Period for sending variable	0 5 · 0 6 · 0 8 · 1 0 · 1 2 · 1 5 ·	
value	2.0: 2.5: 3.0: 4.0: 5.0: 6.0:	
-	7.0; 10.0 seconds	
This parameter determines th	ne cycle time for sending the	
variable value incremented re	spectively decremented by the	
configured step value.		

IR function

Parameter	Settings	
IR channel evaluation	IR channel 0031	
	IR channel 3263	
This parameter determines th	e IR channels, which shall be	
decoded in the wall switch with	IR receiver decoder.	
Select from 2channel blocks, e	each with up to 32 IR channels	
Forward IK temperature	disabled	
telegranis	enabled	
This parameter determines who	ether IR temperature telegrams	
are decoded and sent onto the	bus.	
Forward IR brightness	disabled	
telegrams	enabled	
This parameter determines when	nether IR brightness telegrams	
are decoded and sent onto the	bus.	
Forward IR presence tele-	disabled	
grams	enabled	
This parameter determines whether IR presence telegrams are decoded and sent onto the bus.		
Lock IR presence telegrams	No	
via object	Yes, if blocking object = 0	
	Yes, if blocking object = 1	
This parameter determines if	and under which conditions	
sending of IR presence telegrams is disabled via the blocking		
object.		
Forward IR ID telegrams	disabled	
_	enabled	
This parameter determines whether IR ID telegrams are		
decoded and sent onto the bus.		

Technical manual

25 CO IR-DECODER 909201

Setting IR channels

Note

Button ">>1"corresponds with the upper IR button of the IR wall switch and with the button of the IR hand-held remote with an upward-pointing arrow respectively a "1". Button "<<0" corresponds with the lower IR button of the IR wall switch and with the button of the IR hand-held remote with a downward-pointing arrow respectively a "0".

IR-Channel 00 / 32		
Function of IR channel	single buttons	
Function button >>1	switching: on / off	
Switching value	0n 💌	
Send additional telegram	No	
Lock operation via object	No	
Function button <<0	switching: on / off	
Switching value	Off	
Send additional telegram	No	
Lock operation via object	No	

Note

The parameter tabs for setting the functions of single buttons respectively of the button pairs of the IR channels are identical. Hence, only the settings for button ">>1" respectively an IR button pair are described here.

Parameter	Settings
Function of IR channel	disabled button pair single buttons
single buttons This parameter determines whether both buttons of an IR channel are either disabled, configured as a button pair , or configured as single buttons each with a separate function. Depending on the selected function the parameter window changes and the corresponding default parameters are displayed. When disabled is selected no parameters can be set for the	

When "single buttons" and "Send additional telegram" (= "Yes") is selected this parameter window appears for IR channel 00 or 32.

Π	R-Channel 00 / 32	
Function of IR channel	single buttons	•
Function button >>1	switching: on / off	•
Switching value	On	•
Send additional telegram	Yes	•
Send	on long key press (alternatively)	•
Long push button action min.	0.5 seconds	•
Function of the second telegram	switching: on	•
Lock operation via object	No	•
Function button <<0	switching: on / off	•
Switching value	Off	•
Send additional telegram	Yes	•
Send	on long key press (alternatively)	•
Long push button action min.	0.5 seconds	•
Function of the second telegram	switching: on	•
Lock operation via object	No	•

For further settings see settings for single buttons.

When "button pair" and "Send second telegram" (= "Yes") is selected this parameter window appears for IR channel 00 or 32.

IR-Channel 00 / 32		
Function of IR channel	button pair	
Function button pair	switching, dimming: on, brighter / off, darker 💌	
Button >>1		
Send second telegram	Yes	
Transmission delay for the second telegramm (Factor 100 ms)	1	
Function of the second telegram	switching: on	
Lock operation via object	No	
Button <<0		
Send second telegram	Yes	
Transmission delay for the second telegramm (Factor 100 ms)	1	
Function of the second telegram	switching: off	
Lock operation via object	No	

For further settings see settings for button pairs.

November 2010

25 CO IR-DECODER 909201

Button ">>1" (Settings for single buttons)

Note

In the following the parameter settings for single buttons are described.

The settings for buttons ">>1" and "<<0" are identical.

Function of IR channel	single buttons
Function button >>1	switching: on / off
Switching value	On 💌
Send additional telegram	No
Lock operation via object	No
Function button <<0	switching: on / off
Switching value	Off
Send additional telegram	No
Lock operation via object	No

Parameter	Settings
Function Button >>1	no function Switching: On / Off Switching: Toggle 1-button dimming Bell function: press = On, release = Off Bell function: press = Off, release = On 1- button solar protection control 1- button roller shutter control 1-bit scene 1: recall / save 1-bit scene: recall 8-bit scene: recall 8-bit scene: recall, save send 8-bit value send 16-bit value
	forced control
This parameter determines the function assigned to the button. Depending on the selected function the parameter window changes and the associated parameters are presented with their default settings.	
Lock operation via object	No
	Yes, if blocking object = 0
	Yes, if blocking object = 1
This parameter determines if a operation of a button is locked	nd under which conditions the via the blocking object.

Note

There are no further parameters for the following singlebutton settings: "Switching: Toggle" "Door bell function: press = On, release = Off" "Door bell function: press = Off, release = On" "1- button solar protection control" "1- button roller shutter control" "1- button roller shutter control" "1-bit scene 1: recall / save" "1-bit scene 2: recall / save"

Single button, setting "Switching On / Off"

Parameter	Settings	
Switching value	Off	
On The configured value is sent on short button operation. Note: The default value for button <<0 is Off".		
Send additional telegram	No Yes	
When "Yes" is selected the follo	wing parameters appear.	
Send	after delay (second telegram) on long key press (alterna- tively)	
When "after delay (second telegram)" is selected the parame- ter "Transmission delay for the second telegram (factor 100ms)" is visible. Otherwise, parameter "Long push button action min." is visible.		
Transmission delay for the second telegram (factor 100ms)	1 165500	
Releasing the button starts the time delay (100ms 6550s). After the time delay expires a second telegram is sent. When the button is pressed again before the time delay expires the time delay is started over again. The second telegram is configured using the parameter "Function of the second telegram" and maybe further parame- ters.		
Long push button action min.	0,5 ; 0,6; 0,8; 1,0; 1,2; 1,5; 2,0; 2,5; 3,0; 4,0; 5,0; 6,0; 7,0; 10,0 seconds	
This parameter determines how long at least the button has to be pressed before the alternative telegram is sent. The alternative telegram is configured using the parameter "Function of the second telegram" and maybe further parame- ters. Note: The long key press is 0.5 seconds longer for the IR hand-held remote 5WG1 425-7AB21 and the IR wall switches 5WG1 420- 3AB11, 5WG1 420-3AB12, 5WG1 421-3AB11, 5WG1 421- 3AB12, 5WG1 422-3AB11 and 5WG1 422-3AB12.		

Technical manual

25 CO IR-DECODER 909201

Parameter	Settings	
Function of the second	Switching: On	
telegram	Switching: Off	
	Send percentage	
	send 8-bit value	
	send temperature value	
	send brightness value	
	send 16-bit value	
	1-bit scene: scene 1 recall /	
	save	
	1-bit scene: scene 2 recall /	
	save	
	8-bit scene: recall	
	forced on	
	forced off	
	forced control off	
This parameter determines the function of the second tele- gram.		
Percentage value (0100%)	0	
[Additional parameter for seco	ond telegramm "Send percent-	
age"]	5 " 1	
8-bit value (0255)	0	
[Additional parameter for se value"]	econd telegramm "send 8-bit	
temperature value	0.0 °C / 32F	
[Additional parameter for second telegramm "send tempera- ture value"]		
hrightness value	01ux	
Additional parameter for seco	o telegramm send brightness	
value"]	na telegramm "sena brightness	
A brightness value can be selected from this list:		
	lea from this list:	
0 : 1: 2: 3, 4: 5: 7: 10: 20: 50:	100: 150: 200: 250: 300: 350:	
0 ; 1; 2; 3, 4; 5; 7; 10; 20; 50; 400; 450; 500; 550; 600; 650;	100; 150; 200; 250; 300; 350; 700; 750; 800; 850; 900; 950;	
0 ; 1; 2; 3, 4; 5; 7; 10; 20; 50; 400; 450; 500; 550; 600; 650; 1000; 2000 (Lux)	100; 150; 200; 250; 300; 350; 700; 750; 800; 850; 900; 950;	
0; 1; 2; 3, 4; 5; 7; 10; 20; 50; 400; 450; 500; 550; 600; 650; 1000; 2000 (Lux) 16-bit value (065535)	0 00; 150; 200; 250; 300; 350; 700; 750; 800; 850; 900; 950; 0	
0; 1; 2; 3, 4; 5; 7; 10; 20; 50; 400; 450; 500; 550; 600; 650; 1000; 2000 (Lux) 16-bit value (065535) [Additional parameter for sevalue"]	100; 150; 200; 250; 300; 350; 700; 750; 800; 850; 900; 950; 0 cond telegramm "send 16-bit	
0; 1; 2; 3, 4; 5; 7; 10; 20; 50; 400; 450; 500; 550; 600; 650; 1000; 2000 (Lux) 16-bit value (065535) [Additional parameter for sevalue"] Scene number	100; 150; 200; 250; 300; 350; 700; 750; 800; 850; 900; 950; 0 cond telegramm "send 16-bit scene 1 recall	
0; 1; 2; 3, 4; 5; 7; 10; 20; 50; 400; 450; 500; 550; 600; 650; 1000; 2000 (Lux) 16-bit value (065535) [Additional parameter for sevalue"] Scene number [Additional parameter for sevalue"]	100; 150; 200; 250; 300; 350; 700; 750; 800; 850; 900; 950; 0 cond telegramm "send 16-bit scene 1 recall cond telegramm "8-bit scene	

Single button, setting "8-bit scene: recall"

Parameter	Settings
Scene number	recall scene 1
With this parameter a scene number is selected out of 64. The	
8-bit scene is recalled with a short operation of the button.	

Single button, setting "8-bit scene: recall / save"

Parameter	Settings
Scene number (save on long key press)	scene 1
With this parameter a scene number is selected out of 64. With a short operation of the button the 8-bit scene is recalled. With a long operation of the button the 8-bit scene is saved in the actuators belonging to this 8-bit scene.	

Single button, setting "send 8-bit value"

Parameter	Settings	
Input	Percentage value	
	Decimal value	
Percentage value (0100%)	0	
8-bit value (0255)	0	
The 8-bit value to be sent on	short button operation can be	
entered as percentage value ((0255).	0100%) or as decimal value	
send additional telegram	No Yes	
When Yes" is selected the follo	wing parameters appear.	
Send	after delay (second telegram)	
Sena	on long key press (alterna-	
	tively)	
When "after delay (second telegram)" is selected the parame- ter "Transmission delay for the second telegram (factor 100ms)" is visible. Otherwise, parameter "Long push button		
action min." is visible.		
Transmission delay for the	1	
second telegram (factor	165500	
Releasing the button starts the time delay (100ms 6550s). After the time delay expires a second telegram is sent. When the button is pressed again before the time delay expires the time delay is started over again. The second telegram is configured using the parameter "Function of the second telegram" and maybe further parame- ters.		
Long push button action min.	0.5 ; 0.6; 0.8; 1.0; 1.2; 1.5; 2.0; 2.5; 3.0; 4.0; 5.0; 6.0; 7.0; 10.0 seconds	
This parameter determines how long at least the button has to be pressed before the alternative telegram is sent. The alternative telegram is configured using the parameter "Function of the second telegram" and maybe further parame- ters. Note: The long key press is 0.5 seconds longer for the IR hand-held remote 5WG1 425-7AB21 and the IR wall switches 5WG1 420- 3AB11, 5WG1 420-3AB12, 5WG1 421-3AB11, 5WG1 421- 3AB12, 5WG1 420-3AB12, 5WG1 421-3AB11, 5WG1 421-		

909201, 32 pages

GAMMA <u>instabus</u>

Application program description

November 2010

25 CO IR-DECODER 909201

Parameter	Settings	Parameter	Settings
Function of the second	Switching: On	The 16-bit value to be sent of	n short button operation can be
telegram	Switching: Off	entered as temperature value	e (040°C), as brightness value
	Send percentage	(02000 Lux) or as decimal va	alue (065535).
	send 8-bit value	Send additional telegram	No
	send temperature value		Yes
	send brightness value	When "Yes" is selected the follo	owing parameters appear.
	send 16-bit value	Send	after delay (second telegram)
	1-bit scene: scene 1 recall / save		on long key press (alterna- tively)
	1-bit scene: scene 2 recall /	When after delay (second tel	egram)" is selected the parame-
	save	ter Transmission delay for	the second telegram (factor
	8-bit scene: recall	100ms)" is visible. Otherwise	, parameter "Long push button
	forced on	action min." is visible.	
	forced off	Transmission delay for the	1
	forced control off	second telegram (factor	165500
This parameter determines th	e function of the second tele-	100ms)	
gram.		Releasing the button starts th	e time delay (100ms 6550s).
Percentage value (0100%)	0	After the time delay expires a	second telegram is sent. When
[Additional parameter for sec	ond telegramm "Send percent-	the button is pressed again b time delay is started over again	efore the time delay expires the n.
8-bit value (0255)	0	The second telegram is co	nfigured using the parameter
[Additional parameter for se	econd telegrammsend 8-bit	ters.	and maybe further parame-
value"]		Long push button action	05 .06.08.10.12.15.
Temperature value	0.0 °C / 32F	min.	2.0: 2.5: 3.0: 4.0: 5.0: 6.0:
Additional parameter for second	and telegramm, send tempera-		7.0; 10.0 seconds
ture value"]	sha telegianni "sena tempera	This parameter determines ho	w long at least the button has to
The value can be set as 0°C 4	40°C in 0.5K steps.	be pressed before the alternat	ive telegram is sent.
Brightness value	0 Lux	The alternative telegram is o	configured using the parameter
[Additional parameter for seco	and telegramm "send brightness	"Function of the second telegr	am and maybe further parame-
value"]		Note	
A brightness value can be selec	ted from this list:	The long key press is 0.5 seco	onds longer for the IR hand-held
0 ; 1; 2; 3, 4; 5; 7; 10; 20; 50;	100; 150; 200; 250; 300; 350;	remote 5WG1 425-7AB21 and	the IR wall switches 5WG1 420-
400; 450; 500; 550; 600; 650;	; 700; 750; 800; 850; 900; 950;	3AB11, 5WG1 420-3AB12,	5WG1 421-3AB11, 5WG1 421-
	0	3AB12, 5WG1 422-3AB11 and	5WG1 422-3AB12.
16-bit value (065535)		Function of the second	Switching: On
[Additional parameter for se	cond telegramm "send 16-bit	telegram	Switching: Off
	rocall scope 1		Send percentage
Scene number			send 8-bit value
[Additional parameter for se	econd telegramm "8-bit scene		send temperature value
recall J A scene number out of 1 to 64	can be selected		send brightness value
A scelle lidliber out of 1 to 64	call be selected.		16-bit value senden
			1-bit scene: scene i recali /
Single button sotting 16 h	sit value condon"		1-hit scene: scene 2 recall /
Single button, setting "To-t	on value senden		save
_			8-bit scene: recall
Parameter	Settings		forced on
Input	temperature value		forced off
	brightness value		forced control off
	Decimal value	This parameter determines the	pe function of the second tele-

This parameter determines the function of the second telegram.

Technical manual

Temperature value

16-bit value (0...65535)

brightness value

909201, 32 pages

0.0 °C / 32F

0 Lux

0

25 CO IR-DECODER 909201

Parameter	Settings	
Percentage value (0100%)	0	
[Additional parameter for second telegramm "Send percent-age"]		
8-bit value (0255)	0	
[Additional parameter for second telegramm "send 8-bit value"]		
Temperature value	0.0 °C / 32F	
[Additional parameter for second telegramm "send tempera- ture value"] The value can be set as 0°C 40°C in 0.5K steps.		
Brightness value 0 Lux		
[Additional parameter for second telegramm "send brightness value"] A brightness value can be selected from this list: 0 ; 1; 2; 3, 4; 5; 7; 10; 20; 50; 100; 150; 200; 250; 300; 350; 400; 450; 500; 550; 600; 650; 700; 750; 800; 850; 900; 950; 1000; 2000 (Lux)		
16-bit value (065535)	0	
[Additional parameter for second telegramm "send 16-bit value"]		
Scene number	recall scene 1	
[Additional parameter for second telegramm "8-bit scene recall"] A scene number out of 1 to 64 can be selected.		

Single button, setting "forced control"

Parameter	Settings	
Type of forced control	forced Off / inactive;	
	forced On / inactive	
This parameter determines the	forced controlcommand to be	
sent on short button operation	on. On long button operation	
forced control is deactivated.		
Send additional telegrams	No	
_	Yes	
When "Yes" is selected the following parameter appears.		
Behaviour of sending	short: Off / long: Off	
	short: Off / long: On	
	short: On / long: Off	
	short: On / long: On	
The additional telegrams are sent with the respective forced		
control telegram without time delay. This allows for a 1-bit		
blocking object to be controlled parallel to the forced control.		
The default setting "short: Off / long:On" set the blocking		
object to "0" on activated force	ed control and sets it to "1" on	
deactivated forced control.		

Button pair (Settings for button pairs)

Note

This section describes the parameter settings for an IR button pair.

Function of IR channel	button pair
Function button pair	switching, dimming: on, brighter / off, darker
Button >>1	
Send second telegram	No
Lock operation via object	No
Button <<0	
Send second telegram	No
Lock operation via object	No

Parameter	Settings
Function button pair	Switching, dimming: On, brighter / Off, darker
	Switching, dimming: Off,
	darker / On, brighter
	Switching, dimming: Toggle,
	brighter / Toggle, darker
	Switching, dimming: Toggle,
	darker / Toggle, brighter
	Solar protection, Slats: up/
	Solar protection Slats: down /
	Roller shutters: up/ down
	Roller shutters: down / up
	Send percentage [variable]
	(top increment)
	Send percentage [variable]
	(bottom increment)
	Send 8-bit value [variable]
	(top increment)
	Send 8-bit value [variable]
	(bottom increment)
	1-bit scene 1 / 2: recall / save
	1-bit scene 2 / 1: recall / save
	8-bit scene: recall, save
	Forced on, inactive / off,
	inactive
	Forced off, inactive / forced on,
	inactive
This parameter determines the function of the button pair. Depending on the selected function the parameter window	

changes a displayed. and the corresponding default parameters are

Those parameter settings that are identical for all functions are

November 2010

25 CO IR-DECODER 909201

Parameter	Settings	
following immediately below. T button >>1 [upper (left)] and that these are displayed only or	The parameters are identical for button <<0 [lower (right)] so nce.	
If these exist, function specific settings are listed individually after the general settings.		

Independent settings for button >>1

(this also applies to the parameters with the same name for button $<\!\!<\!\!0$)

Parameter	Settings	
Send second telegram No		
	Yes	
When "Yes" is selected the follo	wing parameters appear.	
Transmission delay for the second telegram (factor 100ms)	1 [165500]	
Releasing the button starts the time delay (100ms 6550s). After the time delay expires a second telegram is sent. When the button is pressed again before the time delay expires the time delay is started over again. The second telegram is configured using the parameter "Function of the second telegram" and maybe further parame- ters.		
telegram	Switching: Off Send percentage Send 8-bit value Send temperature value Send brightness value Send 16-bit value 1-bit scene: scene 1 recall / save 1-bit scene: scene 2 recall /	
	save 8-bit scene: recall Forced on Forced off Forced control off	
This parameter determines the function of the second tele-		
Percentage value (0100%)	0	
[Additional parameter for second telegramm "Send percent- age"]		
8-bit value (0255)	0	
[Additional parameter for se value"]	econd telegramm "send 8-bit	
temperature value	0.0 °C / 32F	
[Additional parameter for second telegramm "send tempera- ture value"] The value can be set as 0°C 40°C in 0.5K steps.		

Settings Parameter brightness value 0 Lux [Additional parameter for second telegramm "send brightness value"] A brightness value can be selected from this list: **0**; 1; 2; 3, 4; 5; 7; 10; 20; 50; 100; 150; 200; 250; 300; 350; 400; 450; 500; 550; 600; 650; 700; 750; 800; 850; 900; 950; 1000; 2000 (Lux) 0 16-bit value (0...65535) [Additional parameter for second telegramm "send 16-bit value"] recall scene 1 Scene number [Additional parameter for second telegramm "8-bit scene recall"] A scene number out of 1 to 64 can be selected. Lock operation via object No Yes, if blocking object = 0Yes, if blocking object = 1 This parameter determines if and under which conditions the operation of a button is locked via the blocking object.

Note

There are no further parameters for the following button pair settings: "Switching, dimming: On, brighter / Off, darker" "Switching, dimming: Off, darker / On, brighter " "Switching, dimming: Toggle, brighter / Toggle, darker" "Switching, dimming: Toggle, darker / Toggle, brighter" "Solar protection, Slats: up/ down" "Solar protection, Slats: down / up" "Roller shutters: up/ down" "Roller shutters: up/ down" "I-bit scene 1 / 2: recall / save" "Forced on, inactive / off, inactive" "Forced off, inactive / forced on, inactive"

Technical manual

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25 CO IR-DECODER 909201

Button pair, setting

"Send percentage [variable] (top increment)"

Settings Button >>1

Parameter	Settings
Upper threshold (0100%)	100
Step (0100%)	1

On long operation of button >>1 a percentage value, starting with the last status value and incremented by the step value until reaching the upper threshold, is sent cyclically onto the bus.

If the last status value is already higher than the upper threshold then nothing is sent.

Settings Button <<0

Parameter	Settings
Lower threshold (0100%)	0
Step (0100%)	1
On long operation of button <<0 a percentage value, starting	

with the last status value and decremented by the step value until reaching the lower threshold, is sent cyclically onto the bus.

If the last status value is already lower than the upper threshold then nothing is sent.

Button pair, setting "Send percentage [variable] (bottom increment)"

Settings Button >>1

Parameter	Settings
Lower threshold (0100%)	0
Step (0100%)	1
On long operation of button >>1 a percentage value, starting with the last status value and decremented by the step value	

until reaching the lower threshold, is sent cyclically onto the bus.

If the last status value is already lower than the upper threshold then nothing is sent.

Settings Button <<0

Parameter	Settings
Upper threshold (0100%)	100
Step (0100%)	1
On long operation of button collop percentage value, starting	

On long operation of button <<0 a percentage value, starting with the last status value and incremented by the step value until reaching the upper threshold, is sent cyclically onto the bus.

If the last status value is already higher than the upper threshold then nothing is sent.

Button pair, setting "Send 8-bit value [variable] (top increment)"

Settings Button >>1

Parameter	Settings
Upper threshold (0255)	255
Step (0255)	1
On long operation of button > the last status value and incre reaching the upper threshold, is If the last status value is al threshold then nothing is sent.	>1 an 8-bit value, starting with mented by the step value until s sent cyclically onto the bus. ready higher than the upper

Settings Button <<0

Parameter	Settings
Lower threshold (0255)	0
Step (0255)	1
On long operation of button <<0 an 8-bit value, starting with the last status value and decremented by the step value until reaching the lower threshold, is sent cyclically onto the bus. If the last status value is already lower than the upper thresh-	

Button pair, setting "Send 8-bit value [variable] (bottom increment)"

Settings Button >>1

old then nothing is sent.

Parameter	Settings
Lower threshold (0255)	0
Step (0255)	1
On long operation of button >>1 an 8-bit value, starting with the last status value and decremented by the step value until reaching the lower threshold, is sent cyclically onto the bus. If the last status value is already lower than the upper thresh- old then nothing is sent.	

Settings Button <<0

Parameter	Settings
Upper threshold (0255)	255
Step (0255)	1
On long operation of button <<0 an 8-bit value, starting with the last status value and incremented by the step value until reaching the upper threshold, is sent cyclically onto the bus.	

If the last status value is already higher than the upper threshold then nothing is sent.

November 2010

25 CO IR-DECODER 909201

Button pair, setting

"8-bit scene: recall / save"

Settings Button >>1

Parameter	Settings
Scene number	scene 1
With this parameter a scene number is selected out of 64. With a short operation of the button the 8-bit scene is recalled. With a long operation of the button the 8-bit scene is saved in the actuators belonging to this 8-bit scene.	

5	
Parameter	Settings
Scene number	scene 1
With this parameter a scene number is selected out of 64	
With a short operation of the button the 8-bit scene is red	

With a short operation of the button the 8-bit scene is recalled. With a long operation of the button the 8-bit scene is saved in the actuators belonging to this 8-bit scene.

Setting IR channels

Note

The parameter windows for configuration of the functions of the IR channels are identical with those for the single buttons >>1, <<0, B1, B2, C1, C2, D1 and D2 respectively the button pairs A, B, C and D. Button >>1 corresponds with the upper IR button of the IR wall switch and with the button of the IR hand-held remote with an upward-pointing arrow respectively a "1"

Button <<0 corresponds with the lower IR button of the IR wall switch and with the button of the IR hand-held remote with a downward-pointing arrow respectively a "0".

Parameter	Settings
Function of IR channel	disabled button pair single buttons
This parameter determines w channel are either disabled, co configured as single buttons ea Depending on the selected fu changes and the correspon displayed. When disabled is selected no buttons.	hether both buttons of an IR onfigured as a button pair, or ch with a separate function. Inction the parameter window ding default parameters are parameters can be set for the

When "single buttons" is selected this parameter window appears for IR channel 00, 16, 32 or 48.

IR-Channel 00/16/32/48			
Function of IR channel	single buttons	•	
Function button >>1	switching: on / off	•	
Switching value	On	•	
Send additional telegram	Yes	•	
Send	on long key press (alternatively)	•	
Long push button action min.	0.5 seconds	•	
Function of the second telegram	switching:on	•	
Lock operation via object	No	•	
Function button <<0	switching: on / off	•	
Switching value	Off	•	
Send additional telegram	Yes	•	
Send	on long key press (alternatively)	•	
Long push button action min.	0.5 seconds	•	
Function of the second telegram	switching:on	•	
Lock operation via object	No	•	

Technical manual

909201, 32 pages

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November 2010

25 CO IR-DECODER 909201

Further settings are identical to those for single buttons and arenot repeated here.

When "button pair" is selected this parameter window appears for IR channel 00, 16, 32 or 48.

IR-Channel 00/16/32/48			
Function of IR channel	button pair	•	
Function button pair	switching, dimming: on, brighter / off, darker	•	
Button >>1			
Send second telegram	Yes	•	
Transmission delay for the second telegram (factor 100 ms)	1	•	
Function of the second telegram	switchington	•	
Lock operation via object	No	•	
Button <<0			
Send second telegram	Yes	•	
Transmission delay for the second telegram (factor 100 ms)	1	÷	
Function of the second telegram	switching: off	•	
Lock operation via object	No	•	

Further settings are identical to those for button pairs and are not repeated here.

Technical manual

November 2010

25 CO IR-DECODER 909201

Space for notes

Technical manual