## 12 S2 On-off-toggle/Dim/Shu/Display 220F01

## **Devices Employing the Program**

Product family: Push Button Product type: Push Button, 2-fold

Manufacturer: Siemens

Name: DELTA BCU 2-fold (push button type)

Order-no.: 5WG1 116-2AB31

## **Application Description**

The application program "12 S2 On-Off-Toggle/Dim/ Shu/Display 220F01" provides parameters to switching, dimming, blinds control, status display via LEDs with the push button 2-fold, DELTA BCU (push button type). The operating mode to the push button can be selected with the parameter "Function of push buttons". According to the mode selected, the "Push buttons" parameter window displays the appropriate parameters in their default setting. Furthermore, the type of object [1] changes automatically (e.g. from 1 bit to switching to 4 bit to dimming).

## Push button

The various modes can be selected to the push button by setting the parameter "Push button: Function of push buttons " accordingly:

<u>Switching:</u> Upon operating the push button an appropriate telegram is sent (On/Off/Toggle).

<u>Blinds Control:</u> The application program distinguishes between long and short switch operations. On a long operation of the push button a telegram is sent to raising (up) or lowering (down) the blinds. On a short operation a telegram is sent to adjusting the louvres or halting the blinds if moving up or down.

<u>Dim by stop telegrams:</u> The application program distinguishes between long and short switch operations. A short switch operation sends a switching telegram (e.g. left push button: "On", right push button: "Off"). When operating the push button to a longer period of time (threshold can be adjusted in the parameter list), a dimming telegram (left push button: "Brighter", right push button: "Darker") is sent. On releasing the push button, a stop telegram is sent.

<u>Dim by cyclic sending:</u> The application program distinguishes between long and short switch operations. A short switch operation sends a switching telegram (e.g. left push button: "On", right push button: "Off"), a long switch operation sends dimming telegrams (left push button: "Brighter", right push button: "Darker") with the frequency specified in the parameter list until the push button is released.

## LED display

The two LEDs situated below the two push buttons can be set to display actual object status or to use as orientation lights.

## **Communication Objects (Switch)**

Phys.Addr. Program				
no.	Func	tion	Object name	Туре
01.01	.051	12 S2 On-off-toggle/Dim/	Shu/Display 220F01	
<b>■</b> ← 0	Off		Switch left	1 Bit
<b>□</b> ← 1	On		Switch right	1 Bit

#### Note:

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

All objects that correspond with a user operation have to be assigned to a group address.

Obj	Function	Object name	Туре	Flags
0	On Off Toggle	Switch left	1-Bit	CWTU

This parameter governs the operating mode to the left push button. According to the parameter settings (see parameter: "Left push button") "On" or "Off" telegrams are sent. When set to "Toggle", telegrams are sent ("On" or "Off") appropriate to change the actual signal status.

	3	- 9		
1	On Off	Switch right	1-Bit	CWTU
	Toggle			

This parameter governs the operating mode to the right push button. According to the parameter settings (see parameter: "Right push button") "On" or "Off" telegrams are sent. When set to "Toggle", telegrams are sent ("On" or "Off") appropriate to change the actual signal status.

Maximum number of group addresses: 4
Maximum number of assignments: 5

#### **Parameters**

## Mounting position (establish first of all):



Parameters	Settings	
Mounting position of push	normal (LEDs at the top)	
button	inverted (LEDs at the bottom)	
This parameter defines the mounting position to all parameters below		

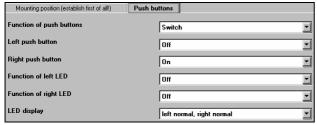
## **Application Programs Description**

March 2006

## 12 S2 On-off-toggle/Dim/Shu/Display 220F01

#### Parameters (Switch)

#### **Push buttons:**



Tanonon or right LED	UH			
LED display	left normal, right normal			
_				
Parameters	Settings			
Function of push buttons	Switch			
	Shutter			
	Dimming with stop telegram Dim. with cyclical sending			
This parameter governs the ope				
buttons. According to the mode				
3	appropriate parameters in their			
default setting. Furthermore, the				
automatically (e.g. from 1 bit to				
as given below:	3,			
Switching (object type: 1 bit)				
Shutter (object type: 1 bit)				
Dimming by stop telegram (obje				
Dimming by cyclic sending (object type: 4 bit)				
Left push button	On Off			
	Off Toggle			
Toggle This parameter governs whether an " On " or "Off" telegram is				
sent via object [0] on operating				
to "Toggle", telegrams are sent				
change the actual signal status				
Right push button	On			
· .	Off			
	Toggle			
This parameter governs whether				
sent via object [0] on operating the right push button. When se				
to "Toggle", telegrams are sent ("On " or "Off") appropriate to				
change the actual signal status.				
Function of left LED	Off On			
	Status of push button obj. [0]			

Function of left LED	Off
	On
	Status of push button obj. [0]
	Status of push button obj. [1]
	LED object- object [2]
TI 1 ( ) ED ( ) 1 ( ) 1 1	

The left LED (below the push button) can be set to display the status of an object (either object [0], object [1], or optionally object [2]) or to use as an orientation light.

Function of right LED	Off
_	On
	Status of push button obj. [0]
	Status of push button obj. [0] Status of push button obj. [1]
	LED object- object [3]

The right LED (below the push button) can be set to display the status of an object (either object [0], object [1], or optionally object [3]) or to use as an orientation light.

Parameters	Settings
	left: normal, right: normal left: inverted, right: inverted left: normal, right: inverted left: inverted, right: normal
This parameter defines how the	two I EDo (dofoult: bolow the

This parameter defines how the two LEDs (default: below the push buttons) will display object status.

#### Note:

When selecting "LED object [2]" in the parameter window "Push buttons: Function of left LED" or "LED object [3]" in the parameter window "Push buttons: Function of right LED", the appropriate objects (here: display object [2] and [3]) are added to the list of objects to assigning appropriate group addresses.

Phys.	Addr.	Program		
no.	Funct	tion	Object name	Туре
<b>₽</b> 01.01.	051	12 S2 On-off-toggle/Dim/	Shu/Display 220F01	
<b>■</b> ← 0	Off		Switch left	1 Bit
<u>■</u> ← 1	On		Switch right	1 Bit
<b>⊒</b> ₽ 2	Displa	ıy	Left LED - object[2]	1 Bit
<b>⊒≓</b> 3	Displa	ıy	Right LED - object[3]	1 Bit

## **Communication Objects (Shutter)**

Phys.	Addr.	Program		
no.	Funct	tion	Object name	Туре
01.01.	051	12 S2 On-off-toggle/Dim/	Shu/Display 220F01	
<u>■</u> ← 0	Open	/ Closed	Louvres	1 Bit
<u>■</u> ← 1	Up/D	own	Shutter	1 Bit

#### Note:

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

All objects that correspond with a user operation have to be assigned to a group address.

Obj	Function	Object name	Type	Flags	
0	Open/Closed	Louvres	1-Bit	CWTU	
This is the switching object to adjusting louvres on a short switch operation: Operating the left push button opens the louvres by one step with an "Off" telegram and operating the right push button closes the louvres by one step with an "On " telegram					
1	Up/Down Shutter 1-Bit CWTU			CWTU	
This is the switching object to raising and lowering (down) the blinds on a long switch operation: Operating the left push button raises (up) the blinds with an "Off" telegram and operating the right push button lowers (down) the blinds with an "					

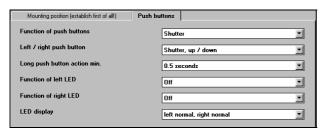
blinds on a long switch operation: Operating the left push button raises (up) the blinds with an "Off" telegram and operating the right push button lowers (down) the blinds with an "On " telegram when using the default parameter setting (see parameter window "Push buttons: Left/right push button"). A short switch operation halts a moving blind.

## 12 S2 On-off-toggle/Dim/Shu/Display 220F01

Maximum number of group addresses: 4
Maximum number of assignments: 5

#### Parameters (Shutter)

#### **Push buttons:**



Parameters	Settings
Function of push buttons	Switch
	Shutter
	Dimming with stop telegram
	Dim. with cyclical sending

This parameter governs the operating mode to the two push buttons. According to the mode selected, the "Push button" parameter window displays the appropriate parameters in their default setting. Furthermore, the type of object [1] changes automatically (e.g. from 1 bit to switching to 4 bit to dimming) as given below:

Switching (object type: 1 bit), Shutter (object type: 1 bit) Dimming by stop telegram (object type: 4 bit) Dimming by cyclic sending (object type: 4 bit)

Left/right push button	Shutter Up/Down
Leivingini pusii bullon	Citation Op/Down
• .	Shutter Down/Up
	Shuller Down/UD

This parameter defines the operating mode to the left push button and the right push button. When using the default setting, a short operation of the left push button opens the louvres by one step with an "Off" telegram and a short operation of the right push button closes the louvres by one step with an "On " telegram. A long operation of the left push button raises (up) the blinds with an "Off" telegram and a long operation the right push button lowers (down) the Sutter with

an on tologram.	
Long push button action min.	0,3; 0,4; <b>0,5</b> ; 0,6; 0,8; 1,0; 1,2; 1,5; 2,0; 2,5; 3,0; 4,0;
IIIIII.	1,2, 1,3, 2,0, 2,3, 3,0, 4,0,
	5 0 · 6 0 · 7 0 seconds

This parameter defines the operating period to generate long and short switch operations. Operating the push button switch longer than the selected period produces a long switch operation.

Function of left LED	Off
	On
	status of push button obj. [0]
	status of push button obj. [1]
	LED object- object [2]

The left LED (below the push button) can be set to display the status of an object (either object [0], object [1], or optionally object [2]) or to use as an orientation light.

Note: When selecting "LED object [2]" in the parameter window "Push buttons: Function of left LED", the appropriate object (display object [2]) is added to the list of objects to assigning the appropriate group address.

Parameters	Settings
Function of right LED	Off On Status of push button obj. [0] Status of push button obj. [1] LED object- object [3]
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The right LED (below the push button) can be set to display the status of an object (either object [0], object [1], or optionally object [3]) or to use as an orientation light.

Note: When selecting "LED object [3]" in the parameter window "Push buttons: Function of right LED ", the appropriate object (display object [3]) is added to the list of objects to assigning the appropriate group address.

are appropriate	- g p
LED display	left: normal, right: normal
	left: inverted, right: inverted
	left: normal, right: inverted
	left: inverted, right: normal

This parameter defines how the two LEDs (default: below the push buttons) will display object status.

#### Note:

When selecting "LED object [2]" in the parameter window "Push buttons: Function of left LED" or "LED object [3]" in the parameter window "Push buttons: Function of right LED", the appropriate objects (here: display object [2] and [3]) are added to the list of objects to assigning appropriate group addresses.

Phys	Phys.Addr. Program		
no.	Function	Object name	Туре
01.01.051 12 S2 On-off-toggle/Dim/Shu/Display 220F01			
<b>■</b> ← 0	On / Off	Dimming On / Off	1 Bit
<u> </u>	Brighter / Darker	Dimming	4 Bit
<b>⊒</b> ₹ 2	Display	Left LED - object[2]	1 Bit
<b>⊒≓</b> 3	Display	Right LED - object[3]	1 Bit

## Communication Objects (Dimming with stop telegram)

Phys.Addr. Program			
no	Function	Object name	Туре
€ 01.01.051 12 S2 On-off-toggle/Dim/Shu/Display 220F01			
<b>■</b> ← 0	On / Off	Dimming On / Off	1 Bit
<u>■</u> ← 1	Brighter / Darker	Dimming	4 Bit

## Note:

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

All objects that correspond with a user operation have to be assigned to a group address.

#### **Application Programs Description**

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Obj Function

## 12 S2 On-off-toggle/Dim/Shu/Display 220F01

0	On /Off	Dimming On/Off	1-Bit	CWTU	
This	This is the switching object to short switch operations: When				
using the default setting (see parameter window "Push but-					
tons: Left/right push button"), operating the left push button			sh button		
send	sends an "On" telegram and operating the right push button				
		m. When set to "To			
grams are sent ("On" or "Off") appropriate to change the actual					
signa	al status.				

Object name Type Flags

4-Bit

CWTU

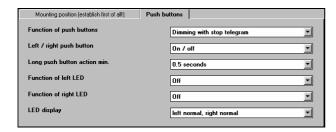
This is the switching object to sending a dimming telegram on a long switch operation: operating the left push button sends a "Brighter" telegram and operating the right push button sends a "Darker" telegram. On releasing the push button switch the "stop" telegram is sent.

Maximum number of group addresses: 4
Maximum number of assignments: 5

1 Brighter/Darker Dimming

## Parameters (Dimming with stop telegram)

#### **Push buttons:**



Parameters	Settings
Function of push buttons	Switch Shutter Dim. with stop telegram Dim. with cyclical sending
This parameter governs the ope buttons. According to the mode parameter window displays the default setting. Furthermore, the automatically (e.g. from 1 bit to as given below: Switching (object type: 1 bit) Shutter (object type: 1 bit)	e selected, the "Push buttons" appropriate parameters in their e type of object [1] changes

Dimming by stop telegram (object type: 4 bit) Dimming by cyclic sending (object type: 4 bit)

Parameters	Settings
Left/right push button	Toggle/Toggle
	On/Off S

This parameter defines the operating mode to the left push button and the right push button of the push button. When using the default setting a short operation of the left push button sends an "On" telegram and a short operation of the right push button sends an "Off" telegram.

A long operation (see parameter "long switch operation min.") of the left push button sends a "Brighter" telegram and a long operation of the right push button sends a "Darker" telegram. On releasing the push button the "stop" telegram is sent. When set to "Toggle/Toggle", a telegram is sent ("On" or "Off") on a short switch operation appropriate to change the actual signal status. Like the "On/Off" mode, this does not affect any dimming operations.

Long push button action	0,3; 0,4; <b>0,5</b> ; 0,6; 0,8; 1,0;
min.	1,2; 1,5; 2,0; 2,5; 3,0; 4,0;
	5,0; 6,0; 7,0 seconds

This parameter defines the operating period to generate long and short switch operations. Operating the push button switch longer than the selected period produces a long switch operation.

Function of left LED	Off
	On
	status of push button obj. [0]
	status of LED object [2]

The left LED (below the push button) can be set to display the status of an object (either object [0] or optionally object [2]) or to use as an orientation light.

Note: When selecting "LED object [2]" in the parameter window "Push buttons: Function of left LED", the appropriate object (display object [2]) is added to the list of objects to assigning the appropriate group address.

Function of right L	ED	Off
		On
		Status of push button obj. [0]
		LED object- object [3]

The right LED (below the push button) can be set to display the status of an object (either object [0] or optionally object [3]) or to use as an orientation light.

Note: When selecting "LED object [3]" in the parameter window "Push buttons: Function of right LED", the appropriate object (display object [3]) is added to the list of objects to assigning the appropriate group address.

This parameter defines how the two LEDs (default: below the push buttons) will display object status.

## Note:

When selecting "LED object [2]" in the parameter window "Push buttons: Function of left LED" or "LED object [3]" in the parameter window "Push buttons: Function of right LED", the appropriate objects (here: display object [2] and [3]) are added to the list of objects to assigning appropriate group addresses.

## 12 S2 On-off-toggle/Dim/Shu/Display 220F01

<u>Product</u>		Program	
<u>no.</u>	Function	Object name	Туре
DELTA BCU UP 116 (swit 12 S2 On-off-toggle/Dim/Shu/Display 220F01			u/Display 220F01
<b>⊒≓</b> 0	On / off	Dimming on/off	1 Bit
<u>■</u> ← 1	Brighter / darker	Dimming	4 Bit
<b>⊒≓</b> 2	Display	Left LED - object[2]	1 Bit
<b>⊒≓</b> 3	Display	Right LED - object[3]	1 Bit

# Communication Objects (Dim. with cyclical sending)

<u>Prod</u>	<u>uct</u>	Program	
<u>no</u>	Function	Object name	Туре
<b>₫</b> ⁄a DELTA	A BCU UP 116 (swit	12 S2 On-off-toggle/Dim/Sh	u/Display 220F01
<b>⊒≓</b> 0	On / off	Dimming on/off	1 Bit
<u>■</u> ← 1	Brighter / darker	Dimming	4 Bit

#### Note:

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

All objects that correspond with a user operation have to be assigned to a group address.

Obj	Function	Object name	Type	Flags
•	On/Off	Dimming On/Off	1-Bit	CWTU

This is the switching object to short switch operations: When using the default setting (see parameter window "Push buttons: Left/right push button"), operating the left push button sends an "On" telegram and operating the right push button sends an "Off" telegram. When set to "Toggle/ Toggle", telegrams are sent ("On" or "Off") appropriate to change the actual signal status.

1 Brighter/Darker Dimming 4-Bit CWTU

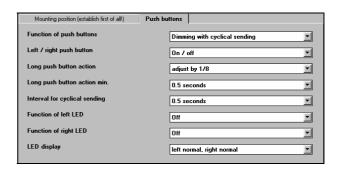
This is the switching object to sending a dimming telegram on a long switch operation: operating the left push button repeatedly sends a "Brighter" telegram and operating the right push button sends a "Darker" telegram with the frequency specified

Maximum number of group addresses: 4
Maximum number of assignments: 5

in the parameter " Interval for cyclical sending

## Parameters (Dim. with cyclical sending)

#### **Push buttons:**



Parameters	Settings
Function of push buttons	Switch Shutter
	Dimming with stop telegram  Dim with cyclical sending

This parameter governs the operating mode of the two push buttons. According to the mode selected, the "Push button" parameter window displays the appropriate parameters in their default setting. Furthermore, the type of object [1] changes automatically (e.g. from 1 bit to switching to 4 bit to dimming) as given below:

Switching (object type: 1 bit) Shutter (object type: 1 bit)

Dimming by stop telegram (object type: 4 bit)
Dimming by cyclic sending (object type: 4 bit)

Left/rightpush button Toggle/Toggle On/Off

This parameter defines the operating mode to the left push button and the right push button. When using the default setting, a short operation of the left push button sends an "On' telegram and a short operation of the right push button sends an "Off" telegram.

A long operation (see parameter "Long switch operation min.") of the left push button repeatedly sends a "Brighter" telegram and a long operation of the right push button repeatedly sends a "Darker" telegram with the frequency specified in the parameter list (see parameter " Interval for cyclical sending ") until the push button is released.

When set to "Toggle/Toggle", a telegram is sent ("On" or "Off") on a short switch operation appropriate to change the actual signal status. Like the "On/Off" mode, this does not affect any dimming operations.

anning sperationer		
Long push button action	adjust by 100%	
	adjust by 1/2	
	adjust by 1/4	
	adjust by 1/8	
	adjust by 1/16	
	adjust by 1/32	
	adjust by 1/64	

This parameter defines the change in light intensity a dimming telegram is to establish on a long switch operation. When set to e.g. "adjust by 1/8", 8 dimming telegrams are required to change the light intensity from 0% to 100%.

## **Application Programs Description**

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## 12 S2 On-off-toggle/Dim/Shu/Display 220F01

Parameters	Settings			
Long push button action	0,3; 0,4; <b>0,5</b> ; 0,6; 0,8; 1,0;			
min.	1,2; 1,5; 2,0; 2,5; 3,0; 4,0; 5,0; 6,0; 7,0 seconds			
This parameter defines the ope				
	and short switch operations. Operating the push button longer than the selected period produces a long switch operation.			
Interval for cyclical sending				
interval for cyclical sending	1,2; 1,5; 2,0; 2,5; 3,0; 4,0; 5,0; 6,0; 7,0 seconds			
This parameter governs the fre				
long switch operation. Conside	r busload when setting the			
cyclic send frequency.				
Function of left LED	Off On			
	Status of push button obj. [0]			
	LED object- object [2]			
The left LED (below the push b				
status of an object (either object	ct [0] or optionally object [2]) or			
to use as an orientation light.	act [2]" in the person stor win			
Note: When selecting "LED obj	ect [2] In the parameter win-			
dow "Push buttons: Function of left LED ", the appropriate object (display object [2]) is added to the list of objects to				
assigning the appropriate group				
Function of right LED Off				
	On status of push button obj. [0]			
	status of LED object [3]			
The right LED (below the push	button) can be set to display			
	bject [0] or optionally object [3])			
or to use as an orientation light.				
Note: When selecting "LED object [3]" in the parameter win-				
dow "Push buttons: Function of right LED", the appropriate				
object (display object [3]) is added to the list of objects to assigning the appropriate group address.				
LED display	left: normal, center: normal			
225 diopidy	left: inverted, center: inverted			
	left: normal, center: inverted			
This parameter defines be suite	left: inverted, center: normal			
This parameter defines how the two LEDs (default: below the push buttons) will display object status.				
pusit buttoris) will display object status.				

## Note:

When selecting "LED object [2]" in the parameter window "Push buttons: Function of left LED" or "LED object [3]" in the parameter window "Push buttons: Function of right LED ", the appropriate objects (here: display object [2] and [3]) are added to the list of objects to assigning appropriate group addresses.

<u>Product</u>		Program	
no.	Function	Object name	Туре
DELTA	BCU UP 116 (swit	12 S2 On-off-toggle/Dim/Sh	u/Display 220F01
<b>⊒≓</b> 0	On / off	Dimming on/off	1 Bit
<u>■</u> ← 1	Brighter / darker	Dimming	4 Bit
<b>⊒≓</b> 2	Display	Left LED - object[2]	1 Bit
<b>⊒≓</b> 3	Display	Right LED - object[3]	1 Bit