

March 2006

12 S2 On-off-toggle/Dim/Shu/Display 221001

Devices Employing the Program

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

Manufacturer: Siemens

Name: DELTA BCU 2-fold

(two status switch type)

Order-no.: 5WG1 116-2AB11

Application Description

The application program "12 S2 On-Off-Toggle/Dim/Shu/Display 221001" provides parameters to realizing switching, dimming, blinds control, and status display via LEDs with the push button 2-fold, DELTA BCU (two status switch type).

The operating modes to the rockers can be selected with the parameter "Left rocker mode" and "Right rocker mode". According to the mode selected, the "Left rocker" and "Right rocker" parameter windows display appropriate parameters in their default setting. Furthermore, the type of the objects corresponding to the rockers changes automatically (left rocker: object [1], right rocker: object [3]) when switching e.g. from switching mode (1 bit) to dimming mode (4 bit).

Rocker

The various modes can be selected individually to each rocker by setting the parameters "Left rocker: Rocker mode" and "Right rocker: Rocker mode" accordingly:

<u>Switching:</u> Upon operating the rocker 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 rocker 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. rocker top: "On", rocker bottom: "Off"). When operating the rocker to a longer period of time (threshold can be adjusted in the parameter list), a dimming telegram (rocker top: "Brighter", rocker bottom: "Darker") is sent. On releasing the rocker, 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. rocker top: "On", rocker bottom: "Off"), a long switch operation sends dimming telegrams (rocker top: "Brighter",

rocker bottom: "Darker") with the frequency specified in the parameter list until the rocker is released.

LED display

The two LEDs situated above the two rockers can be set to display actual object status or to use as orientation lights

Communication Objects (Switch)

Phys	.Addr	Program		
<u>no</u>	. Fund	tion	Object name	Туре
01.01	.050	12 S2 On-off-toggle/Dim/	Shu/Display 221001	
<u>■</u> ← 0	On		Switch upper left rocker	1 Bit
<u> </u>	Off		Switch lower left rocker	1 Bit
<u>■</u> ← 2	On		Switch upper right rocker	1 Bit
■ ← 3	Off		Switch lower right rocker	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	On Off Toggle	Switch upper left rocker	1-Bit	CUWT

This is the switching object of the rocker top of the left rocker. According to the parameter settings (see parameter: "Rocker top") "On" or "Off" telegrams are sent. When set to "Toggle", telegrams are sent ("On" or "Off") appropriate to change the actual signal status.

1	On	Switch lower left	1-Bit	CUWT	
	Off	rocker			
	Togale				

This is the switching object the rocker bottom of the left rocker. According to the parameter settings (see parameter: "Rocker bottom") "On" or "Off" telegrams are sent. When set to "Toggle", telegrams are sent ("On" or "Off") appropriate to change the actual signal status.

2	On	Switch upper	1-Bit	CUWT
	Off	right rocker		
	Toggle	•		

This is the switching object of the rocker top of the right rocker. According to the parameter settings (see parameter: "Rocker top") "On" or "Off" telegrams are sent. When set to "Toggle", telegrams are sent ("On" or "Off") appropriate to change the actual signal status.

3	On Off Toggle	Switch lower right rocker	1-Bit	CUWT
	- 00	l .		

This is the switching object of the rocker bottom of the right rocker. According to the parameter settings (see parameter: "Rocker bottom") "On" or "Off" telegrams are sent. When set to "Toggle", telegrams are sent ("On" or "Off") appropriate to change the actual signal status.

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Maximum number of group addresses: 8
Maximum number of assignments: 8

Parameters

Mounting position (establish first of all):



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

General:



Parameters	Settings
Long switch operation min.	0,3; 0,4; 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 seconds
This parameter defines the operand short switch operations. Op	perating the rocker longer than
the selected period produces a	long switch operation.
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. Consider	r bus load when setting the
cyclic send frequency.	
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 (left and right
below the rockers) will display of	object status.

Parameters (Switch)

Left rocker:



	Off	
Parameters	Settings	
Function of left rocker	Switch Shutter Dimming with stop telegram Dim. with cyclical sending	
This parameter governs the operating mode to the left rocker. According to the mode selected, the "Left rocker" 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)		
Upper contact	On Off Toggle	
This parameter governs whether sent via object [0] on operating rocker. When set to "Toggle", to "Off") appropriate to change the	er an "On" or "Off" telegram is the rocker top of the left elegrams are sent ("On" or	
Lower contact	On Off Toggle	
This parameter governs whether an "On" or "Off" telegram is sent via object [0] on operating the rocker bottom of the left rocker. When set to "Toggle", telegrams are sent ("On" or "Off") appropriate to change the actual signal status.		
Function of left LED	Off On status of left rocker object [0] status of left rocker object [1] status of right rocker obj. [2]	

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

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Right rocker:

Mounting position (establish first of all!)	General Left rocker Right rocker	
Function of right rocker	Switch	_
Upper contact	On	
Lower contact	Off	
Function of right LED	Off	_

Function of right LED	Off	
L.		
Parameters	Settings	
Function of right rocker	Switch Shutter Dimming with stop telegram Dim. with cyclical sending	
This parameter governs the operating mode to the right rocker. According to the mode selected, the "Right rocker" parameter window displays the appropriate parameters in their default setting. Furthermore, the type of object [3] changes automatically (e.g. from 1 bit to switching to 4 bit to dimming) as given below: Switching (object type: 1 bit) blinds control (object type: 1 bit) dim by stop telegram (object type: 4 bit) dim by cyclic sending (object type: 4 bit)		
Upper contact	On Off Toggle ()	
This parameter governs whether an "On" or "Off" telegram is sent via object [0] on operating the rocker top of the right rocker. When set to "Toggle", telegrams are sent ("On" or "Off") appropriate to change the actual signal status.		
Lower contact	On Off Toggle ()	
This parameter governs whether an "On" or "Off" telegram is sent via object [0] on operating the rocker bottom of the right rocker. When set to "Toggle", telegrams are sent ("On" or "Off") appropriate to change the actual signal status.		
Function of right LED	Off	

Function of right LED

Off
On
status of right rocker obj. [2]
status of right rocker object [0]

The LED below the right rocker can be set to display the status of an object (either object [2], object [3], or object [0]) or to use as an orientation light.

Communication Objects (Shutter)

Phys.	Phys.Addr. Program			
no.	Function	Object name	Туре	
01.01.	050 12 S2 On-off-toggle/Dim/	Shu/Display 221001		
■ ← 0	Open / Closed	Louvres left rocker	1 Bit	
<u>■</u> ← 1	Up / Down	Shutter left rocker	1 Bit	
<u>□</u> ← 2	Open / Closed	Louvres right rocker	1 Bit	
⊒ ← 3	Up / Down	Shutter right rocker	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	Open/Closed	Louvres left rocker	1-Bit	CUWT
į				

This is the switching object to adjusting louvres on a short switch operation: When using the default setting (see parameter window "Left rocker: Upper/Lower contact"), a operation of the rocker top opens the louvres by one step with an "Off" telegram and a operation of the rocker bottom closes the louvres by one step with an "On" telegram

1	Up/Down	Shutter left	1-Bit	CUWT
	•	rocker		

This is the switching object to raising (up) and lowering (down) the blinds on a long switch operation: When using the default setting (see parameter window "Left rocker: Upper/Lower contact"), a operation of the rocker top raises (up) the blinds with an "Off" telegram and a operation of the rocker bottom lowers (down) the blinds with an "On" telegram. A short switch operation halts a moving blind.

2	Open/closed	Louvres right	1-Bit	CUWT
	· .	rocker		

This is the switching object to adjusting louvres on a short switch operation: When using the default setting (see parameter window "Right rocker: Upper/Lower contact"), a operation of the rocker top opens the louvres by one step with an "Off" telegram and a operation of the rocker bottom closes the louvres by one step with an "On" telegram

3	Up/down	Shutter right	1-Bit	CUWT
	-	rocker		

This is the switching object to raising (up) and lowering (down) the blinds on a long switch operation: When using the default setting (see parameter window "Upper/Lower contact"), a operation of the rocker top raises (up) the blinds with an "Off" telegram and a operation of the rocker bottom lowers (down) the blinds with an "on" telegram. A short switch operation halts a moving blind.

Maximum number of group addresses: 8
Maximum number of assignments: 8

Subject to change without prior notice

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Parameters (Shutter)

Left rocker:



Parameters	Settings
Function of left rocker	Switch
	Shutter
	Dimming with stop telegram
	Dim. with cyclical sending

This parameter governs the operating mode to the left rocker. According to the mode selected, the "Left rocker" 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 with stop telegram (object type: 4 bit)
Dimming with cyclical sending (object type: 4 bit)

Upper / Lower contact Shutter Up/Down Shutter Down/Up

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

Function of left LED	permanent Off
	permanent On
	Status of left rocker object [0]
	Status of left rocker object [1]
	Status of right rocker object [2]

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

Right rocker:



Parameters	Settings
Function of right rocker	Switch
_	Shutter
	Dimming with stop telegram
	Dim. with cyclical sending
This parameter governs the op-	erating mode to the right
rocker. According to the mode	selected, the "Right rocker"

parameter window displays the appropriate parameters in

their default setting. Furthermore, the type of object [3] changes automatically (e.g. from 1 bit to switching to 4 bit to dimming) as given below:
Switching (object type: 1 bit)

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

Dimming with stop telegram (object type: 4 bit)
Dimming with cyclical sending (object type: 4 bit)

Upper / lower contact	Shutter Up/Down
	Shutter Down/Up

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

Function of right LED	Off
	On
	Status of right rocker obj. [2]
	Status of right rocker obj. [3]
	Status of left rocker object [0]

The LED below the right rocker can be set to display the status of an object (either object [2], object [3], or object [0]) or to use as an orientation light.

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Communication Objects (Dimming with stop telegram)

Phys	.Addr. Program		
no.	Function	Object name	Туре
01.01	.050 12 S2 On-off-toggle/Dim.	/Shu/Display 221001	
■← 0	On / Off	Dimming On / Off left rocker	1 Bit
<u>■</u> ← 1	Brighter / Darker	Dimming left rocker	4 Bit
<u>■</u> ← 2	On / Off	Dimming On / Off right rocker	1 Bit
■ ← 3	Brighter / Darker	Dimming right rocker	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	Туре	Flags	
0	On/Off	Dimming On/Off	1-Bit	CUWT	
		left rocker			

This is the switching object of the left rocker to short switch operations: When using the default setting (see parameter window "Left rocker switch: Rocker top / rocker bottom"), a operation of the rocker top sends an "On" telegram and a operation of the rocker bottom 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 left	4-Bit	CWTU	_
		rocker			

This is the switching object of the left rocker switch to sending a dimming telegram on a long switch operation: a operation of the rocker top sends a "Brighter" telegram and a operation of the rocker bottom sends a "Darker" telegram. On releasing the rocker the "Stop" telegram is sent.

2	On/Off	Dimming On/Off	1-Bit	CUWT
		right rocker		

This is the switching object of the right rocker to short switch operations: When using the default setting (see parameter window "Left rocker switch: Rocker top / rocker bottom"), a operation of the rocker top sends an "On" telegram and a operation of the rocker bottom sends an "Off" telegram. When set to "Toggle/ Toggle", telegrams are sent ("On" or "Off") appropriate to change the actual signal status.

3	Brighter/Darker	Dimming right	4-Bit	CWTU
		rocker		

This is the switching object of the right rocker switch to sending a dimming telegram on a long switch operation: a operation of the rocker top sends a "Brighter" telegram and a operation of the rocker bottom sends a "Darker" telegram. On releasing the rocker the "Stop" telegram is sent.

Maximum number of group addresses: 8 Maximum number of assignments: 8

Parameters (Dimming with stop telegram)

Left rocker:



Parameters	Settings
Function of left rocker	Switch
	Shutter
	Dim. with stop telegram
	Dim. with cyclical sending

This parameter governs the operating mode of the left rocker. According to the mode selected, the "Left rocker" 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 with stop telegram (object type: 4 bit)
Dimming with cyclical sending (object type: 4 bit)

Upper / lower rocker	Toggle/Toggle
	On/Off

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

A long operation (see parameter "Long switch operation min.") of the rocker top sends a "Brighter" telegram and a long operation of the rocker bottom sends a "Darker" telegram. On releasing the rocker 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.

affect any diffiffing operations.			
Function of LED	Off		
	On		
	Status of left rocker object [0]		
	Status of right rocker obj. [2]		

The two LEDs (left and right below the rocker) can be set to display the status of an object (object [0] or object [2]) or to use as orientation lights.

Subject to change without prior notice

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Right rocker:



Parameters	Settings
Function of right rocker	Switch
	Shutter
	Dim. with stop telegram
	Dim. with cyclical sending

This parameter governs the operating mode of the right rocker. According to the mode selected, the "Right rocker" parameter window displays the appropriate parameters in their default setting. Furthermore, the type of object [3] 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 with stop telegram (object type: 4 bit) Dimming with cyclical sending (object type: 4 bit)

Upper / lower contact	Toggle/Toggle
	On/Off

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

A long operation (see parameter "Long switch operation min.") of the rocker top sends a "Brighter" telegram and a long operation of the rocker bottom sends a "Darker" telegram. On releasing the rocker 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

affect any diffining operations.	
Function of LED	Off
	On
	Status of right rocker obj. [2]
	Status of left rocker object [0]

The two LEDs (left and right below the rocker) can be set to display the status of an object (object [0] or object [2]) or to use as orientation lights.

Communication Objects (Dim with cyclical sending)

Phys.Ac	ddr. Program		
no. F	unction	Object name	Туре
01.01.05	i0 12 S2 On-off-toggle/Dim/	Shu/Display 221001	
<u>□</u> + 0 0	n / Off	Dimming On / Off left rocker	1 Bit
<u>⊒</u> ⊷ 1 В	righter / Darker	Dimming left rocker	4 Bit
<u>⊒</u> ⊢ 2 0	n / Off	Dimming On / Off right rocker	1 Bit
⊒ ⊷ з в	righter / Darker	Dimming right rocker	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	Туре	Flags
0	On/Off	Dimming On/Off	1-Bit	CUWT
		left rocker		

This is the switching object of the left rocker to short switch operations: When using the default setting (see parameter window "Left rocker: Upper/Lower contact"), a operation of the rocker top sends an "On" telegram and a operation of the rocker bottom 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 left	4-Bit	CWTU
		rocker		

This is the switching object of the left rocker to sending a dimming telegram on a long switch operation: a operation of the rocker top repeatedly sends a "Brighter" telegram and a operation of the rocker bottom sends a "Darker" telegram with the frequency specified in the parameter "Interval for cyclical sending".

2	On/Off	Dimming On/Off	1-Bit	CUWT
		right rocker		

This is the switching object of the right rocker to short switch operations: When using the default setting (see parameter window "Right rocker: Upper/Lower contact"), a operation of the rocker top sends an "On" telegram and a operation of the rocker bottom sends an "Off" telegram. When set to "Toggle/Toggle", telegrams are sent ("On" or "Off") appropriate to change the actual signal status.

3	Brighter/darker	Dimming right	4-Bit	CWTU
		rocker		

This is the switching object of the right rocker to sending a dimming telegram on a long switch operation: a operation of the rocker top repeatedly sends a "Brighter" telegram and a operation of the rocker bottom sends a "Darker" telegram with the frequency specified in the parameter "Interval for cyclical sending".

Maximum number of group addresses: 8
Maximum number of assignments: 8

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Parameters (Dim by cyclic sending)

Left rocker:



Parameters	Settings
Function of left rocker	Switch Shutter Dim. with stop telegram Dim. with cyclical sending

This parameter governs the operating mode of the left rocker. According to the mode selected, the "Left rocker" 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 with stop telegram (object type: 4 bit)
Dimming with cyclical sending (object type: 4 bit)

Upper / lower contact	Toggle/Toggle (/) On/Off
	I On/On

This parameter defines the operating mode to the rocker top and the rocker bottom of the left rocker. When using the default setting, a short operation of rocker top sends an "On" telegram and a short operation of the rocker bottom sends an "Off" telegram.

A long operation (see parameter "Long switch operation") of the rocker top repeatedly sends a "Brighter" telegram and a long operation of the rocker bottom repeatedly sends a "Darker" telegram with the frequency specified in the parameter list (see parameter "Interval for cyclical sending") until the rocker 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.

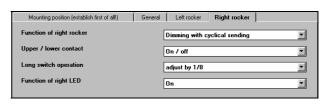
Long switch operation	adjust by 100% adjust by 1/2 adjust by 1/4 adjust by 1/8 adjust by 1/16 adjust by 1/32 adjust by 1/64
	, , ,
	adjust by 1701

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%.

Function of LED	Off
	On
	Status of left rocker object [0] Status of right rocker obj. [2]

The two LEDs (left and right below the rocker) can be set to display the status of an object (object [0] or object [2]) or to use as orientation lights.

Right rocker:



Parameters	Settings	
Function of right rocker	Switch	
	Shutter	
	Dim. with stop telegram	
	Dim. with cyclical sending	
This parameter governs the operating mode of the right		
rocker. According to the mode selected, the "Right rocker"		
parameter window displays the appropriate parameters in		
their default setting. Furthermo	re, 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 with stop telegram (object type: 4 bit)
Dimming with cyclical sending (object type: 4 bit)

			7 1
Upper / Lower contact	et	Toggle	/Toggle
		On/Off	:

This parameter defines the operating mode to the rocker top and the rocker bottom of the right rocker switch. When using the default setting, a short operation of the rocker top sends an "On" telegram and a short operation of the rocker bottom sends an "Off" telegram.

A long operation (see parameter "Long switch operation min.") of the rocker top repeatedly sends a "Brighter" telegram and a long operation of the rocker bottom repeatedly sends a "Darker" telegram with the frequency specified in the parameter list (see parameter "Interval for cyclical sending") until the rocker 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.

Long switch operation	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%.

Function of LED	Off	
	On	
	Status of right rocker obj. [2]	
	Status of left rocker object [0]	

The two LEDs (left and right below the rocker) can be set to display the status of an object (object [0] or object [2]) or to use as orientation lights.

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Application Programs Description

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