ABB i-bus® EIB

Control Unit for LUXCONTROL, MDRC SL/S 50.1, GH Q605 0051 R0001

The control unit is a DIN rail mounted device for insertion in the distribution board. It is used to control digitally dimmable electronic ballast devices or transformers via the EIB.

In a lighting circuit, up to 50 lux control electronic ballast devices or electronic transformers can be connected to a device.

The following functions can be implemented as required: switching, dimming, fixed value, fault indication.

The device requires an external auxiliary supply. Bus connection is carried out via a bus connecting terminal at the front of the device.

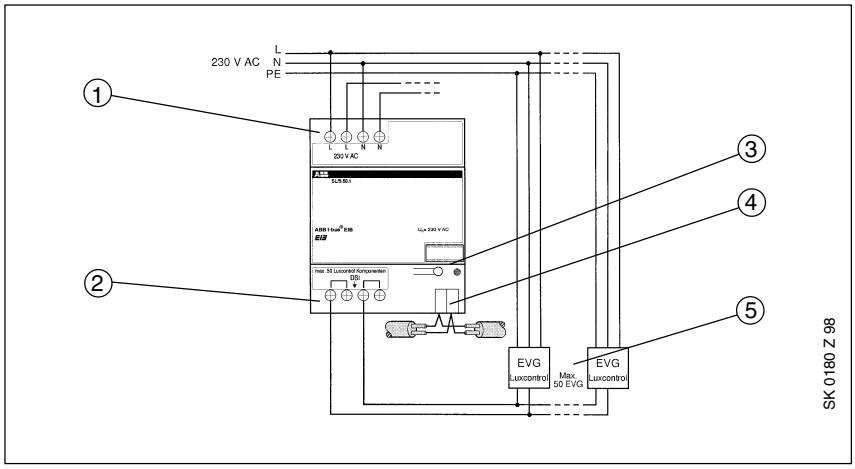
7

Technical Data

Power supply	– EIB	24 VDC, via the bus line
	– Auxiliary supply	230 V AC, 50 Hz
	– Power consumption	2.6 W
Operating and display elements	– red LED and push button	for assigning the physical address
Output	– DSI signals (digital/serial)	
	– Nominal voltage	12 V
	– Max. number of electronic ballast devices or electronic transformers	50
	– Permitted cable length	max 250 m
	– Safety	short-circuit proof, overload protection, reverse voltage protection
Connections	– EIB	Bus connecting terminal (included)
	– Output for DSI signal	2 screw terminals
	– Auxiliary supply	2 screw terminals each for L and N Wire range: finely stranded 0.5-2.5mm², single-core 0.5-4mm²
Type of protection	– IP 20, EN 60 529	
Protection class	– II	
Ambient temperature range	– Operation	- 5 °C … 45 °C
	– Storage	-25 °C … 55 °C
	– Transport	-25 °C … 70 °C
Design	– modular installation device, pro*M*	
Housing, colour	– Plastic housing, grey	
Mounting	– on 35 mm mounting rail, DIN EN 50022	
Dimensions	– 90 x 72 x 64 mm (H x W x D)	
Mounting depth/width	– 68 mm / 4 modules at 18 mm	
Weight	– 0.23 kg	
Certification	– EIB-certified	
CE norm	– in accordance with the EMC guideline and the low voltage guideline	

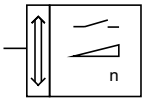
Application programs	Number of communication objects	Max. number of group addresses	Max. number of associations
Switch Dim Value Fault /1	5	10	10
Switch Dim Value Fault /2	5	10	10
Switch Dim Value Fault /3	4	13	13

Circuit diagram



1 Power supply
2 DSI output
3 Programming LED, push button
4 Bus connection
5 Electronic ballast device with DSI connection

Switch Dim Value Fault /1



Selection in ETS2

– ABB
  └Illumination
    └Dimmer

Switch

The actuator can be switched on and off via the 1 bit communication object “Output Switch”. The brightness value that the actuator uses when it is switched on is defined in the parameters.

In the same way, the actuator can also be switched on via object 4 “Master On/Off”. However this object has the additional function that the communication objects “Relative dimming” and “Brightness value” cannot switch the actuator on if the master object has the value “0”.

In the standard setting, the actuator operates with a softstart and a softstop function. This means that it does not use the new status immediately but only dims to the required value at a specified speed. The periods for the softstart and softstop can be set individually.

Provided that the transmission flag of the switching object is set, the communication object sends a status telegram after each change in the status. If several actuators are controlled via the same group address, only one of them should have the transmission flag set or they should each use a unique group address as a sending group address so that they do not permanently send new telegrams.

Dimming

The connected luminaires can be dimmed with the 4 bit communication object according to EIS 2. If the actuator is switched off, it can be dimmed on via the 4 bit object.

In the standard setting, the actuator can only be dimmed down to the minimum brightness. If the parameter “Dim off“ is set to “yes”, it is also possible to dim the luminaire off beyond the minimum brightness value.

It is possible to specify in the parameters the period for passing the dimming range from minimum to maximum brightness.

The setting range can be limited using the two parameters “Lower dimming threshold” and “Upper dimming threshold”.

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Value

Using the 1 byte communication object, the luminaire can be given one of 256 brightness values ranging from 0 = off to 255 = total brightness. If the brightness value is changed via this communication object, the actuator can either use the new value immediately or it can dim up from the current to the new brightness value within a set period.

Provided that the transmission flag is set, the communication object sends a telegram after each change in the status. If several actuators are controlled via the same group address, only one of them should have the transmission flag set or they should each use a unique group address as a sending group address so that they do not permanently send new telegrams.

Fault

If there is a defective lamp, the auxiliary supply fails or there is an error on the DSI bus, the object “Fault indication” sends a telegram with the value “1”. If the fault is rectified, it sends a telegram with the value “0”.

Communication objects

No.	Type	Object name	Function
0	1 bit	Output	Switch
1	4 bit	Dimmer	Relative dimming
2	1 byte	Dimmer	Brightness value
3	1 bit	Fault indication	Telegr. fault status
4	1 bit	Master object	Master On/Off

Parameters
The default setting for the values is **printed in bold type.**

DSI flags	
– Softstart	**yes** / no
– Softstop	**yes** / on
– Brightness value	**dim to setpoint** / jump to setpoint
– Dim off	yes / **no**
DSI parameters	
– Switch ON brightness	**last value**
	1%
	5%
	10%
	20%
	30%
	50%
	70%
	100%
– Lower dimming threshold	**1%**
	5%
	10%
	20%
	30%
	50%
– Upper dimming threshold	50%
	70%
	80%
	90%
	95%
	100%
– Duration: softstart	0.4 s / **0.8 s /** 1.2 s / ... / 30 s / 50 s
– Duration: softstop	0.4 s / **0.8 s** / 1.2 s / ... / 30 s / 50 s
– Duration: dim to setpoint	0.4 s / **0.8 s** / 1.2 s / ... / 30 s / 50 s
– Duration: dimming 0 ... 100%	2 s / 3 s / **4 s** / 5 s / ... / 40 s / 50 s

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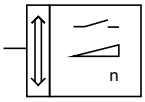
Switch Dim Value Fault /2



Selection in ETS2

– ABB
  └Illumination
    └Dimmer

Switch

The actuator can be switched on and off via the 1 bit communication object “Output Switch”. The brightness value that the actuator uses when it is switched on is defined in the parameters.

In the same way, the actuator can also be switched on via object 4 “Master On/Off”. However this object has the additional function that the communication objects “Relative dimming” and “Brightness value” cannot switch the actuator on if the master object has the value “0”.

If the actuator is switched on and receives a further “On” telegram, it can either use the set starting brightness value or the maximum brightness value. This is determined via the parameter “Reaction on twice “ON””.

The actuator operates if required with a softstart and a softstop function. This means that it does not use the new status immediately but only dims to the required value at a specified speed. The periods for the softstart and softstop can be set individually.

Provided that the transmission flag of the switching object is set, the communication object sends a status telegram after each change in the status. If several actuators are controlled via the same group address, only one of them should have the transmission flag set or they should each use a unique group address as a sending group address so that they do not permanently send new telegrams.

Dim

The connected luminaires can be dimmed with the 4 bit communication object according to EIS 2. If the actuator is switched off, it can be dimmed on via the 4 bit object.

In the standard setting, the actuator can only be dimmed down to the minimum brightness. If the parameter “Dim off“ is set to “yes”, it is also possible to dim the luminaire off beyond the minimum brightness value.

It is possible to specify in the parameters the period for passing the dimming range from minimum to maximum brightness.

The setting range can be limited using the two parameters “Lower dimming threshold” and “Upper dimming threshold”.

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Value

Using the 1 byte communication object, the luminaire can be given one of 256 brightness values ranging from 0 = off to 255 = total brightness. If the brightness value is changed via this communication object, the actuator can either use the new value immediately or it can dim up from the current to the new brightness value within a set period.

Provided that the transmission flag is set, the communication object sends a telegram after each change in the status. If several actuators are controlled via the same group address, only one of them should have the transmission flag set or they should each use a unique group address as a sending group address so that they do not permanently send new telegrams.

Fault

If there is a defective lamp, the auxiliary supply fails or there is an error on the DSI bus, the object “Fault indication” sends a telegram with the value “1”. If the fault is rectified, it sends a telegram with the value “0”.

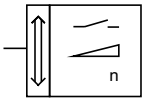
Communication objects

No.	Type	Object name	Function
0	1 bit	Output	Switch
1	4 bit	Dimmer	Relative dimming
2	1 byte	Dimmer	Brightness value
3	1 bit	Fault indication	Telegr. fault status
4	1 bit	Master object	Master On/Off

Parameters
The default setting for the values is **printed in bold type.**

General	
– Switch ON brightness	**last value** 1% 5% 10% 20% 30% 50% 70% 100%
– Reaction on twice “ON”	**maximum value** selected switch ON brightness
– Lower dimming threshold	**1%** 5% 10% 20% 30% 50%
– Upper dimming threshold	**100%** 50% 70% 80% 90% 95%
– Duration: dim 0 ... 100%	2 s / 3 s / **4 s** / 5 s / ... / 40 s / 50 s
Dim On/Off	
– Softstart	yes / **no**
If “yes” is selected:	
– Duration: Softstart	0.4 s / **0.8 s** / 1.2 s / ... / 30 s / 50 s
– Softstop	yes / **no**
If “yes” is selected:	
– Duration: Softstop	0.4 s / **0.8 s** / 1.2 s / ... / 30 s / 50 s
– Brightness value	**jump to ...** / dim to ...
If “dim to” is selected:	
– Duration: Dim to	0.4 s / **0.8 s** / 1.2 s / ... / 30 s / 50 s
– Dim off	yes / **no**

Switch Dim Value Fault /3



Selection in ETS2

– ABB
  └Illumination
    └Dimmer

Switch

The actuator can be switched on and off via the 1 bit communication object “Output Switch”. The brightness value that the actuator uses when it is switched on is defined in the parameters.

If the actuator is switched on and receives a further “On” telegram, it can either use the set starting brightness value or the maximum brightness value. This is determined via the parameter “Reaction on twice “ON””.

The actuator operates if required with a softstart and a softstop function. This means that it does not use the new status immediately but only dims to the required value at a specified speed. The periods for the softstart and softstop can be set individually.

If the parameter “Object 0 sends on brightness value “0”” is set to “telegram with the value “0””, the actuator cannot be switched on via the objects “Relative dimming” and “Brightness value”.

Dim

The connected luminaires can be dimmed with the 4 bit communication object according to EIS 2. If the actuator is switched off, it can be dimmed on via the 4 bit object.

In the standard setting, the actuator can only be dimmed down to the minimum brightness. If the parameter “Dim off“ is set to “yes”, it is also possible to dim the luminaire off beyond the minimum brightness value.

It is possible to specify in the parameters the period for passing the dimming range from minimum to maximum brightness.

The setting range can be limited using the two parameters “Lower dimming threshold” and “Upper dimming threshold”.

Value

Using the 1 byte communication object, the luminaire can be given one of 256 brightness values ranging from 0 = off to 255 = total brightness. If the brightness value is changed via this communication object, the actuator can either use the new value immediately or it can dim up from the current to the new brightness value within a set period.

Fault

If there is a defective lamp, the auxiliary supply fails or there is an error on the DSI bus, the object “Fault indication” sends a telegram with the value “1”. If the fault is rectified, it sends a telegram with the value “0”.

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Communication objects

No.	Type	Object name	Function
0	1 bit	Output	Switch/Telegr. status
1	4 bit	Dimmer	Relative dimming
2	1 byte	Dimmer	Brightness value
3	1 bit	Fault indication	Telegr. fault status

Parameters
The default setting for the values is **printed in bold type.**

General	
– Switch on with	**last value** 1% brightness 5% brightness 10% brightness 20% brightness 30% brightness 50% brightness 70% brightness 100% brightness
Ignition always with10% brightness, thereafter dim/jump to turn-on brightness	♦ Note
– Reaction on twice “ON“	**maximum value** selected turn-on brightness
– Object 0 sends on brightness value “0”	**no telegram** telegram with value “0”
If object 0 sends a telegram:	
– The dimming actuator is switched off as a result	♦ Note
– A reset is only possible via object 0	♦ Note
– Lower dimming threshold	**1%** 5% 10% 20% 30% 50%
– Lower dimming threshold	**100%** 50% 70% 80% 90% 95%
Dimming parameters	
– Softstart when switching on (Ignition brightness –> turn-on brightness)	**yes** / no
If “yes” is selected:	
– Duration: softstart	0.4 s / **0.8 s** / 1.2 s / ... / 30 s / 50 s
– Softstart when switching off (Act. brightness –> lower dimming threshold)	**yes** / no
If “yes” is selected:	
– Duration: softstop	0.4 s / **0.8 s** / 1.2 s / ... / 30 s / 50 s
– If value of object 2 changes	**dim up to new value** jump to new value
If “dim up” is selected:	
– Duration: dim to value	0.4 s / **0.8 s** / 1.2 s / ... / 30 s / 50 s
– Dim off	**to the lower dimming range** to the value “0”
The same gradient is used for dimming and dimming off	♦ Note
– Duration for passing the dimming range	2 s / 3 s / **4 s** / 5 s / ... / 40 s / 50 s