

ABB i-bus® EIB / KNX Data Logging Unit BDB/S 1.1

Intelligent Installation Systems



This manual describes the function of the Data Logging Unit BDB/S 1.1.
Subject to changes and errors excepted.

Exclusion of liability:

Despite checking that the contents of this document match the hardware and software,
deviations cannot be completely excluded.

We therefore cannot accept any liability for this. Any necessary corrections will be inserted in
new versions of the manual.

Please inform us of any suggested improvements.

E-mail: eib.hotline@de.abb.com

Contents	Page
1 General	4
1.1 Product and functional overview.....	5
2 Device technology	6
2.1 Technical data.....	6
2.2 Circuit diagram.....	7
2.3 Dimension drawing	8
2.4 Assembly and installation	9
3 Commissioning	11
3.1 Overview	11
3.2 Parameters	12
3.2.1 "General" parameter window.....	12
3.2.2 Parameter window "Channel designator".....	16
3.2.3 Channel parameter settings "Individual for each channel"	17
3.2.3.1 Parameter window "Channel parameters page 1 of 2".....	17
3.2.3.2 Parameter window "Channel parameters page 2 of 2".....	24
3.2.4 Channel parameter settings "Same for all channels"	27
3.2.4.1 Parameter window "Channel parameters page 1 of 2".....	27
3.2.4.2 Parameter window "Channel parameters page 2 of 2".....	28
3.3 Communication object	29
3.3.1 Channel 1	29
3.3.2 Channel 2...35	31
3.3.3 General.....	32
4 Planning and application	34
4.1 Application fields.....	34
4.1.1 Application 1	34
4.1.2 Application 2.....	34
4.1.3 Application 3.....	34
4.1.4 Application 4.....	34
4.2 Reaction on bus voltage failure	35
4.3 Reaction on bus voltage recovery	35
Appendix	VII
A.1 Scope of delivery	VII
A.2 Directory of drawings	VIII
A.3 Directory of tables.....	IX
A.4 Index	X
A.5 Ordering information	X
A.6 Notes.....	XII

1 General

The Data Logging Unit BDB/S 1.1 is an EIB / KNX device for logging operational data (in hours) and counting operations on up to 35 channels.

Limit values are defined for the individual counter values which automatically initiate an alarm message on the ABB i-bus® if they are exceeded.

Data logging can be used for example, to co-ordinate the maintenance expenditure and to determine the operational life of different devices. Possible applications for use of the BDB/S 1.1 can be found for example in the fields of lighting, ventilation, pumps as well as transport systems.

This manual provides you with detailed technical information relating to the Data Logging Unit BDB/S 1.1 installation and programming, and explains the use of the device using examples.

This manual is divided into the following sections:

- Chapter 1 General
- Chapter 2 Device technology
- Chapter 3 Commissioning
- Chapter 4 Planning and application
- Appendix

1.1 Product and functional overview

The Data Logging Unit BDB/S 1.1 is a modular installation device for fast installation in the distribution board with a module width of 2 space units.

The Data Logging Unit enables you to count the switching operations of switch actuator channels in an ABB i-bus® system. Furthermore, the operating hours of the connected loads can be recorded with a resolution of up to one second. 35 independent channels are available each with seven communication objects provided. The switching operations as well as the operating hours can be recorded on a channel basis, where the counting method from zero upwards or from a set value downwards can be selected. The operating data of every channel is derived from the state of the communication object *Channel X switch position – received*.

Via a communication object or parameter it is possible to define the corresponding start or limit value for each individual switch operation counter value. With a total value mode of counting, i.e. counting from zero up to a set limit value, an alarm message is generated if the limit value is exceeded. With a remaining value mode of counting, i.e. counting from an adjustable start value down to zero, an alarm message is generated if zero is reached.

Via a communication object or parameter it is possible to define the corresponding start or limit value for each individual operating hours counter value. With a total run time mode of counting, i.e. counting from zero up to set limit value, an alarm message is generated if the limit value is exceeded. With a remaining run time mode of counting, i.e. counting from adjustable start value down to zero, an alarm message is generated if the zero is reached.

The counter values and start or limit values can be changed via the bus. The values can only be modified after enabling via a communication object. Via the communications object "Delete all operating data - System" all operating data can be deleted in the Data Logging Unit.

Every state change adjustable via parameters increments the current counter value of the operations counter by one.

The level to count the operating hours can be defined via a parameter. The Data Logging Unit can even be set to count permanently via the level setting. Counting is undertaken every second.

During a new start the switching states of the monitored switch actuator channels are read after a settable time. A pause can be programmed between the two corresponding telegrams. If a switch actuator does not respond, the telegram will be repeated twice.

On bus voltage failure all counter values and start or limit values are saved in BDB/S 1.1 and restored when the bus voltage recovers. If the limit values are exceeded the Data Logging Unit sends the respective alarm messages on the ABB i-bus®.

2 Device technology



Fig. 1: BDB/S 1.1

For installation in the distribution board. The device is used for recording of switching operations and operating hours on 35 channels. The BDB/S 1.1 is operational after of the bus voltage. The module is programmed directly via the application program ETS. The connection to the ABB i-bus® is established via the bus connection terminal at the front of the device.

2.1 Technical data

Power supply	- Bus voltage	21 ... 32V DC
	- Current consumption, bus	< 12 mA
	- Leakage loss, bus	Max. 250 mW
Connections	- EIB / KNX	via bus connection terminals
Operating and display elements	- Programming LED	for assignment of the physical address
	- Programming button	for assignment of the physical address
Enclosure	- IP 20	to DIN EN 60 529
Safety class	- II	to DIN EN 61 140
Isolation category	Overvoltage category	III to DIN EN 60 664-1
	Pollution degree	2 to DIN EN 60 664-1
EIB / KNX safety extra low voltage	SELV 24 V DC	
Temperature range	- Operation	-5° C...+ 45° C
	- Storage	-25°C...+ 55°C
	- Transport	-25°C...+ 70°C
Ambient conditions	- Maximum air humidity	93%, no condensation allowed
Design	- Modular installation device (MDRC)	Modular installation device, ProM
	- Dimensions	90 x 36 x 64.5 mm (H x W x D)
	- Mounting width in space units	2 (2 modules at 18 mm)
	- Mounting depth	64.5 mm
Installation	- On 35 mm mounting rail	to DIN EN 60 715
Mounting position	- as required	
Weight	- 0.1 kg	
Housing/colour	- Plastic housing, grey	
Approvals	- EIB / KNX to EN 50 090-1, -2	Certification
CE mark	- in accordance with the EMC guideline and low voltage guideline	

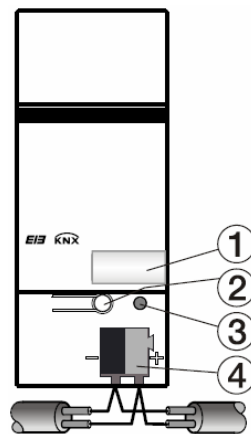
Table 1: Technical data

Application program	Max. number of communication objects	Max. number of group addresses	Max. number of associations
Operating data recording/1	250	254	255

Table 2: Application program

Note: ETS is required for programming. If ETS3 is used a ".VD3" type file must be imported. The application program is available in the ETS under ABB/Safety and Monitoring/Controller.

2.2 Circuit diagram

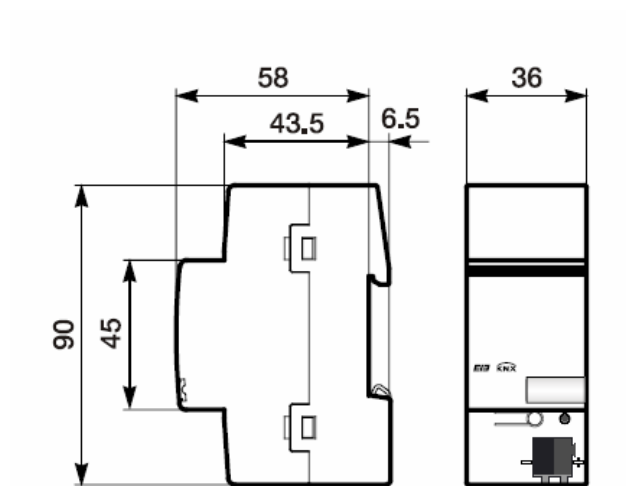


2CDC 072 053 F0006

Fig. 2: Circuit diagram

- 1 Label carrier
- 2 Programming button
- 3 Programming LED
- 4 Bus connection terminal

2.3 Dimension drawing



2CDC 072 051 F0006

Fig. 3: Dimension drawing

2.4 Assembly and installation

The Data Logging Unit is a modular installation device for fast installation in the distribution board on 35 mm mounting rails to DIN EN 60 715.

The connection to the bus is implemented using the supplied bus connection terminal.

The device is ready for operation after connection to the bus voltage.

Accessibility of the devices for the purpose of operation, testing, visual inspection, maintenance and repair must be provided (conform to DIN VDE 0100-520).

Commissioning requirements

In order to commission the Data Logging Unit, a PC with ETS and a connection to the ABB i-bus®, e.g. via a RS232 interface or a USB interface is necessary.

The device is ready for operation after connection to the bus voltage.

The installation and commissioning may only be carried out by electrical specialists. The appropriate norms, guidelines, regulations and specifications should be observed when planning and setting up electrical installations.

- The device should be protected from damp, dirt and damage during transport, storage and operation.
- The device should not be operated outside the specified technical data!
- The device should only be operated in a closed housing (distribution board)!

Supplied state

The Data Logging Unit is supplied with the physical address 15.15.255. The application program is pre-installed. Hence, only group addresses and parameters must be loaded during commissioning. The entire application can be reloaded as required. A longer downtime may result if the application program is changed or after a discharge.

Assignment of the physical address

The assignment and programming of the physical address is carried out in the ETS.

Cleaning

If devices become dirty, they can be cleaned using a dry cloth. Should a dry cloth not remove the dirt, they can be cleaned using a slightly damp cloth and soap solution. Corrosive materials or solutions should never be used.

Maintenance

The device is maintenance-free. No repairs should be carried out by unauthorised personnel if damage occurs (e.g. during transport or storage). The warranty expires if the device is opened.

3 Commissioning

3.1 Overview

For the Data Logging Unit BDB/S 1.1 a high-performance application program **Data Logging/1** is available.
Programming requires the EIB Tool Software (ETS). When ETS3 is used the product files with the file extension .VD3 must be imported.

Max. number of communication objects	250
Max. number of group addresses	254
Max. number of associations	255

3.2 Parameters

Note: The standard settings for the options are underlined, e.g. yes/no.

3.2.1 “General” parameter window

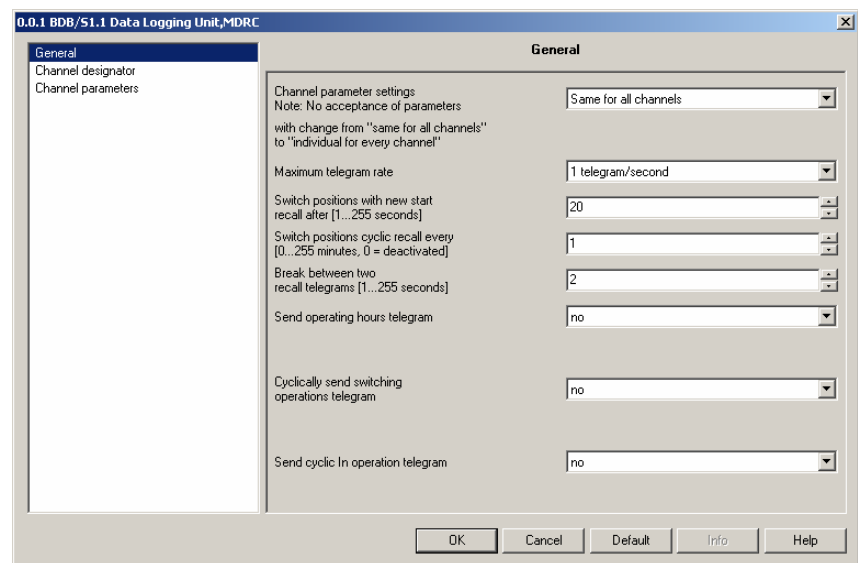


Fig. 4: “General” parameter window

Channel parameter settings

Note: No acceptance of parameters with change from “Same for all channels” to “Individual for each channel”

Options: Individual for each channel/
Same for all channels

With this parameter you set if the channels are set individually for the 35 channels or set the same for all channels.

Option *Individual for each channel* = the option enables the individual setting of each channel separately.

Option *Same for all channels* = if the option is selected the settings under the parameter window “Channel parameters” apply for all channels.

Note: Please note that the values which are set to the same values for all channels, when converted individually for each channel they are not transferred to each individual channel. The individual setting must be repeated for each channel.

Maximum telegram rate

Options: 1/2/3/5/10/20 telegrams/second

To control the bus load, it is possible to limit the *Maximum telegram rate* per second with this parameter.

Example: With the setting *5 telegrams/second* a maximum of 5 telegrams will be sent in a second.

Switch positions with new start recall after [1...255 seconds]

Options: 1...20...255 seconds

With this parameter the time interval is set at which the switch positions can be recalled on the monitored channels after a new start.

Example: If the Data Logging Unit is restarted and the setting is set to *2 seconds*, after 2 seconds it will commence to recall all the switch positions of the parameterised channels.

Switch positions cyclic recall every [0...255 minutes, 0 = deactivated]

Options: 0...1...255 minutes
 0 = function deactivated

With this parameter the time interval is set after which the switch positions are recalled on a cyclic basis.

Note: The set cycle time applies for all channels. The function can be enabled or inhibited for each channel.

If the switch positions are recalled cyclically, ensure that on the recalling device, e.g. a switch actuator channel, the R flag is set in the communication object to be recalled. Otherwise the Data Logging Unit can not recall the switch position.

Break between two recall telegrams [1...255 seconds]

Options: 1...2...255 seconds

In order to allow co-ordinated recall of the individual switch positions a pause is set between two recall telegrams.

Note: If a switch actuator does not respond, the telegram will be repeated twice.

Send operating hours telegram

Options: no/
 cyclically/
 after a change

Option *no* = operating hour's telegram is not sent

Option *cyclically* = operating hours telegrams are sent *cyclically*

Option *after a change* = operating hours telegrams are sent after each change.

If the option *cyclically* is selected the following parameters are displayed.

Cycle time [1...255 hours]

Options: 1...255 hours

The cycle time is thus set here. After this time the operating hour's telegrams are sent.

Cyclically send switching operations telegram

Options: no/yes

Option *no* = switching operations telegram is not sent

Option *yes* = switching operations telegram sent cyclically

If the option *yes* is selected, the following parameters are displayed.

Cycle time [1...255 hours]

Options: 1...255 hours

The cycle time is thus set here. After this time the switching operations telegrams are sent.

Send cyclic “In operation” telegram

Options: no/yes

Option *no* = cyclic “In operation” telegram is not sent

Option *yes* = cyclic “In operation” telegram is sent, additionally the communication object “In operation – System” appears.

If the option *yes* is selected, the following parameters are displayed.

Send interval for “In operation” telegram

Options: 10min/30min/1h/3h/6h/12h/24h

The communication object “In operation – System” is sent cyclically on the bus after the set interval. The telegram value is always “1”.

This can be used to monitor the Data Logging Unit.

3.2.2 Parameter window “Channel designator”

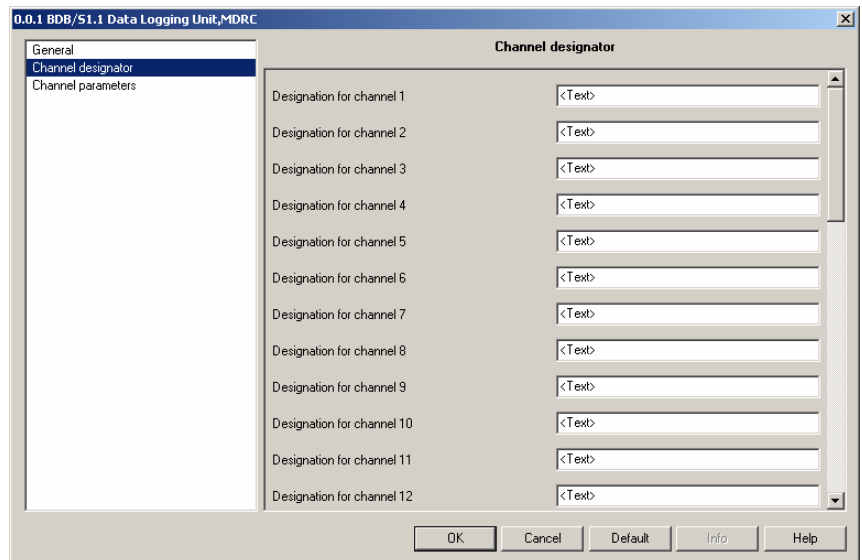


Fig. 5: Parameter window “Channel designator”

Designation for channel X

Options: <Text>

With this parameter it is possible to enter a text of up to 40 characters in length for identification in the ETS.

Note: The text which is entered is used to provide help, in order to obtain an overview of the channels when they are fully assigned and to indicate the function assigned to the channel. The text is purely for informative purposes and has no further function.

3.2.3 Channel parameter settings “Individual for each channel”

If the option *Individual for each channel* is selected in the parameter *Channel parameter settings* in the parameter window *General*, the following parameter window appears

3.2.3.1 Parameter window “Channel parameters page 1 of 2”

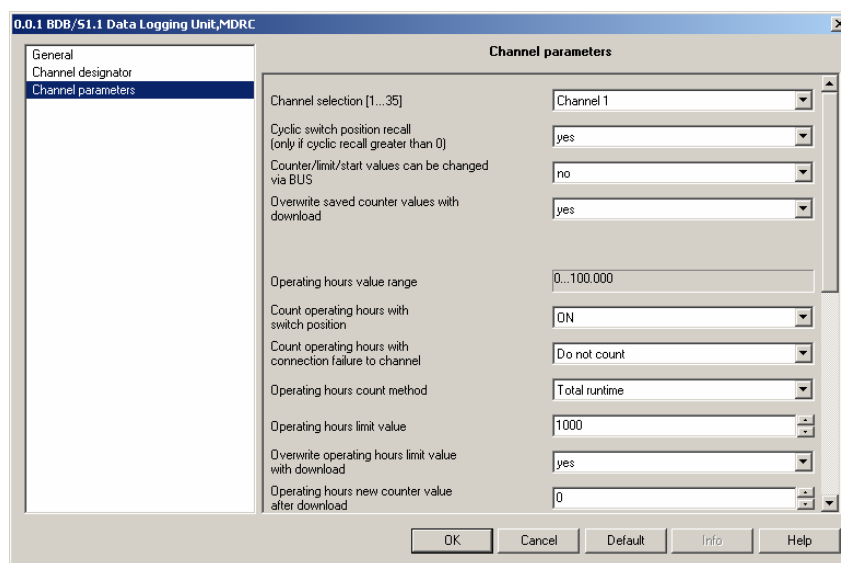


Fig. 6: Parameter window “Channel parameters page 1 of 2”

Note: The parameters for setting the switching operations become visible by scrolling down using the scroll bar on the right hand side.

Channel selection [1...35]

Options: Channel 1...Channel 35

With this parameter you define which channels are to be programmed.

Cyclic switch position recall (only if cyclic recall greater than 0)Options: no/yesOption *no* = do not recall switch positionOption *yes* = recall switch position

With this parameter recall of the switch position is activated.

Note: The cycle time for this purpose is set in the parameter *Switch positions cyclic recall every [0...255 hours, 0 = deactivated]* in the parameter window "General".

If the switch positions are recalled cyclically, ensure that on the recalling device, e.g. a switch actuator channel, the R flag is set in the communication object to be recalled. Otherwise the Data Logging Unit can not recall the switch position.

Counter/limit/start values can be changed via BUS

Options: no/yes

Option *no* = Counter/limit/start values can not be changed via BUS

Option *yes* = Counter/limit/start values can be changed via BUS

Note: The communication objects
"Channel 1 operating hours start/limit value – Change/read" and
"Channel 1 switching operations start/limit value –
Change/read" are always visible.

How can the counter/limit/start values be changed?

Before the counters, start and limit values are changed a "1" must be received on the communications object "Enable delete/overwrite - System".

If a "1" is received the enable to delete/overwrite the operating data is issued and a time window of 10 seconds is activated. The time window closes automatically 10 seconds after the last change and the communications object value is reset to "0" and sent on the bus.

The time window remains active for at least 10 seconds after the last close command.

What is the counter value?

The counter value signifies the current operating hours and switching operations in the Data Logging Unit.

What is the limit value?

The limit value is only relevant when counting upwards. A limit value can be defined by a parameter. The limit value can also be modified via the bus. If the limit value is reached the communication object "Channel 1 operating hours - Alarm" sends a "1".

Note: Thereafter counting will continue up to the end value of 100,000. The counter stops at 100,000.

What is the start value?

The start value is only relevant when counting downwards. A start value can be defined by a parameter. The start value can also be modified via the bus. Counting down to zero starts at the start value. If the value "0" is reached the communication object "Channel 1 operating hours - Alarm" sends a "1".

Note: The counter stops at zero.

Overwrite saved counter values with download

Options: no/yes

Option *no* = saved counter values are not overwritten

Option *yes* = saved counter values are overwritten and the following parameters appear

Note: The counter value can also be modified via the bus.

If the option *yes* is selected, the following parameters are displayed.

Operating hours new counter value after download

Options: 0...100.000

With this parameter a new counter value is set for the operating hours after download.

Note: If the operating hours are counting as a remaining run time (downwards counter), a plausibility test is undertaken.

Example: If a start value of 2,500 is set and the new counter value is set to 3,500, the new counter value is automatically corrected to 2,500, as the new counter value can not be greater than the start value.

Switching operations new counter value after download

Options: 0...4.294.967.295

With this parameter a new counter value is set for the switching operations after download.

Note: If the switching operations are counting as a remaining run time (downwards counter), a plausibility test is undertaken.

Example: If a start value of 2,500 is set and the new counter value is set to 3,500, the new counter value is automatically corrected to 2,500, as the new counter value can not be greater than the start value.

Operating hours value range

This parameter serves as a note or remark.

The value range is between 0 and 100,000.

Count operating hours with switch position

Options: ON/
 OFF/
 ON and OFF (always)

With this parameter you set the switch state at which the operating hours are to be counted.

Option *ON* = counting is undertaken at a communication object value of "1", i.e. at a communication object value of "1" the operating hours counter is started and the counting stops at a value of "0".

Option *OFF* = counting is undertaken at a communication object value of "0", i.e. at a communication object value of "0" the operating hours counter is started and the counting stops at a value of "1".

Option *ON and OFF (always)* = counting is undertaken at a communication object value of "0" and "1". After the Data Logging Unit is powered up the operating hours counter will run permanently.

Thus for example the total connection time of equipment in the ABB i-bus® system can be measured.

Note: Internally the Data Logging Unit counts exactly to the second, the output of the operating hours telegram occurs for example at a full 60 minutes, 120 minutes etc.

Count operating hours with connection failure to channel

Options: Count/
 Do not count/
 Dependent on last switch position

Option *Count* = the operating hours continue to count.

Option *Do not count* = the operating hours are not counted, i.e. as soon as the connection to the channel has been established the count will continue.

Option *Dependent on last switch position* = depending on the last communication object value the count will or will not continue.

Note: Connection failures can now only be determined on channels which are cyclically recalled, i.e. reaction only according to the options, otherwise counting continues.

When does counting continue?

This is dependent of the parameter setting at *Count operating hours with switch position*.

Operating hours count method

Options: Total runtime/Remaining runtime

Option *Total runtime* = counting upwards (incremental counter) beginning at 0.

Option *Remaining runtime* = counting downwards (decremental counter) beginning at the start value.

Note: All details in hours.

If the option *Total runtime* is selected, the following two parameters are displayed.

Operating hours limit value

Options: 0...1000...100,000

The limit value for the operating hours is set with this parameter. If this value is reached the communication object "Channel 1 operating hours - Alarm" sends a "1".

Note: Thereafter counting will continue up to the end value of 100,000. The counter value stops at 100,000.

Overwrite operating hours limit value with download

Options: no/yes

Option *no* = operating hours limit value is not overwritten

Option *yes* = operating hours limit value is overwritten

Note: Changes of the limit value via the bus with a download is not taken into consideration. The parameterised value is set as a limit value.

If the option *Remaining runtime* is selected, the following two parameters are displayed.

Operating hours start value

Options: 0...1000...100,000

The start value for the operating hours is set with this parameter. Counting down to zero starts at the start value. If the value "0" is reached the communication object "Channel 1 operating hours - Alarm" sends a "1".

Note: The counter stops at zero.

Overwrite operating hours start value with download

Options: no/yes

Option *no* = operating hours start value is not overwritten

Option *yes* = operating hours start value is overwritten

Note: Changes of the start value via the bus with a download is not taken into consideration. The parameterised value is set as a start value.

3.2.3.2 Parameter window “Channel parameters page 2 of 2”

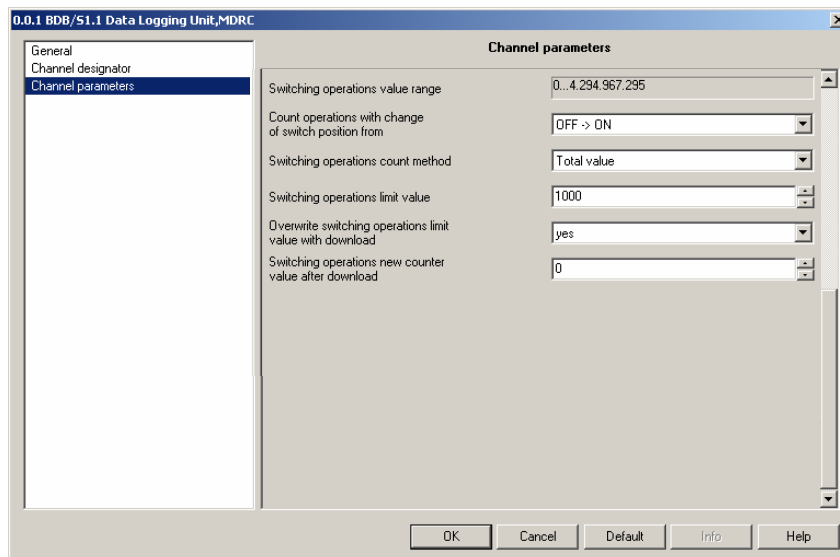


Fig. 7: Parameter window “Channel parameters page 2 of 2”

Switching operations value range

This parameter serves as a note or remark.

The value range is between 0 and 4,294,967,295.

Count operations with change of switch position from

Options: ON -> OFF/
 OFF -> ON/

With this parameter the switch operation is defined.

Option *ON -> OFF* = a switch operation is counted if switching occurs from an ON telegram to an OFF telegram.

Option *OFF -> ON* = a switch operation is counted if switching occurs from an OFF telegram to an ON telegram.

Switching operations count method

Options: Total value/Remaining value

Option *Total value* = counting upwards beginning at 0.

Option *Remaining value* = counting downwards beginning at the start value

Note: A 1 = 1 switching operation.

If the option *Total value* is selected, the following two parameters are displayed.

Switching operations limit value

Options: 0...1000...4.294.967.295

The limit value for the switching operations is set with this parameter. If this value is reached the communication object "Channel 1 switching operations - Alarm" sends a "1".

Note: Thereafter counting will continue up to the end value of 4.294.967.295. The counter value stops at 4.294.967.295.

Overwrite switching operations limit value with download

Options: no/yes

Option *no* = switching operations limit value is not overwritten

Option *yes* = switching operations limit value is overwritten

Note: Changes of the limit value via the bus with a download is not taken into consideration. The parameterised value is set as a limit value.

If the option *Remaining value* is selected, the following two parameters are displayed.

Switching operations start value

Options: 4.294.967.295...1000...0

The start value for the switching operations is set with this parameter. Counting down to zero starts at the start value. If the value "0" is reached the communication object "Channel 1 switching operations - Alarm" sends a "1".

Note: The counter stops at zero.

Overwrite switching operations start value with download

Options: no/yes

Option *no* = switching operations start value is not overwritten

Option *yes* = switching operations start value is overwritten

Note: Changes of the start value via the bus with a download is not taken into consideration. The parameterised value is set as a start value.

3.2.4 Channel parameter settings “Same for all channels”

If the option *Same for all channels* is selected in the parameter *Channel parameter settings* in the parameter window *General* is selected, the following parameter window appears

3.2.4.1 Parameter window “Channel parameters page 1 of 2”

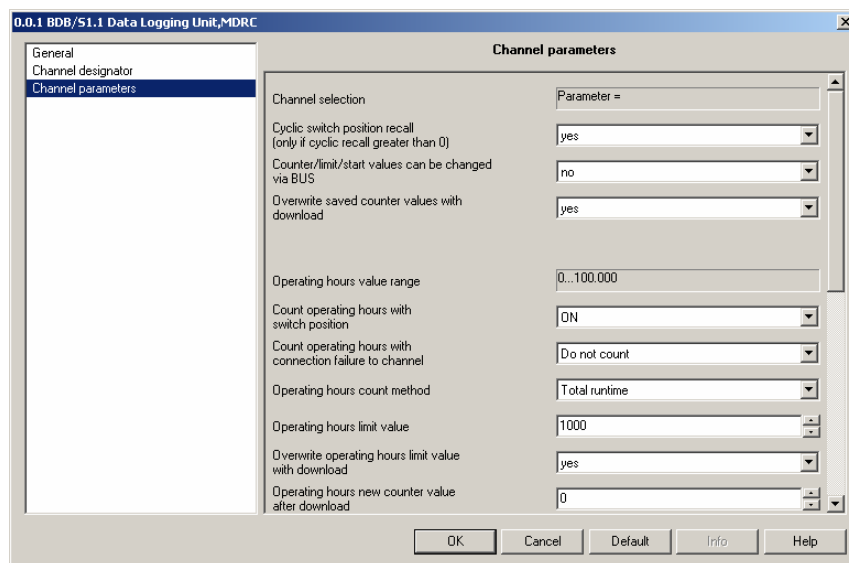


Fig. 8: Parameter window “Channel parameters page 1 of 2”

Channel selection

This parameter serves as a note or remark.

This indicates in the parameter window *General* in the parameter *Channel parameter settings* that the option *Same for all channels* has been selected.

Note: All further parameters can be taken from the description in the chapter channel parameter settings “Individual for each channel”.

3.2.4.2 Parameter window “Channel parameters page 2 of 2”

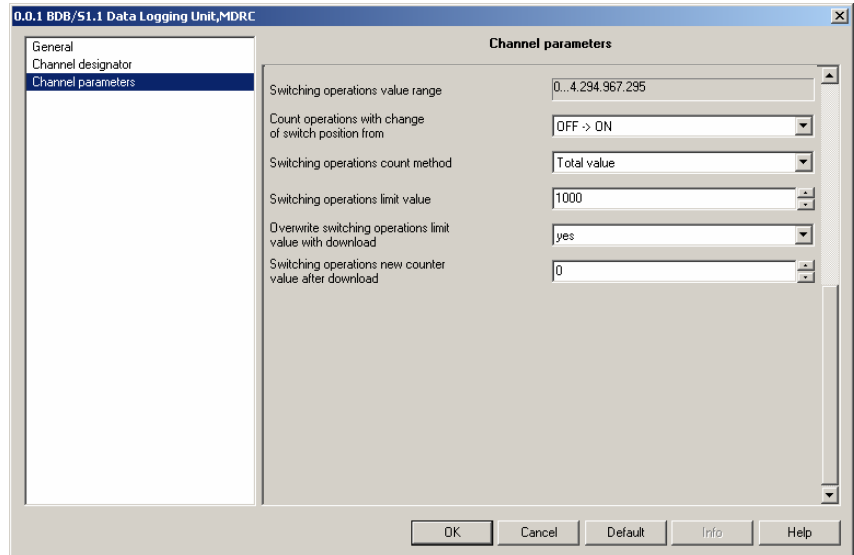


Fig. 9: Parameter window “Channel parameters page 2 of 2”

Note: The limit descriptions should be taken from the chapter channel parameter settings “Individual for each channel”.

3.3 Communication object

3.3.1 Channel 1

Number	Object Function	Name	Length	C	R	W	T	U
0	received	Channel 1 switch position	1 bit	C	-	W	T	U
1	Number	Channel 1 operating hours	4 Byte	C	R	W	T	-
2	Change/read	Channel 1 operating hours start/limit value	4 Byte	C	R	W	T	-
3	Alarm	Channel 1 operating hours	1 bit	C	R	-	T	-
4	Number	Channel 1 switching operations	4 Byte	C	R	W	T	-
5	Change/read	Channel 1 switching operations start/limit value	4 Byte	C	R	W	T	-
6	Alarm	Channel 1 switching operations	1 bit	C	R	-	T	-

Fig. 10: Communication objects channel 1, 0...6

No.	Function	Object name	Data type	Flags
0	Received	Channel 1 switch position	EIS 1, 1-Bit DTP 1.001	C, W, T, U
<p>Receives the current 1-bit switching telegram of the channel to be recorded, e.g. from a switching actuator.</p> <p>If the switch positions are recalled cyclically, ensure that on the recalling device, e.g. a switch actuator channel, the R flag is set in the communication object to be recalled. Otherwise the Data Logging Unit can not recall the switch position.</p>				
1	Number	Channel 1 operating hours	EIS 11, 4 bytes DTP 12.001	C, R, W, T
<p>Contains the current number (= counter value) of operating hours</p> <p>With a bus voltage failure the current counter value is saved in the BDB/S.</p> <p>Via the parameter <i>Overwrite saved counter values with download</i> and the option <i>yes</i> a further parameter <i>Operating hours new counter value after download</i> opens.</p> <p>A new counter value can be defined with this.</p> <p>The counter value can also be modified via the bus.</p> <p>Before the current values can be changed, the communication object "Enable delete/overwrite - System" must receive a "1".</p>				
2	Change/read	Channel 1 operating hours start/limit value	EIS 11, 4 bytes DTP 12.001	C, R, W, T
<p>The operating hours start or limit value can be changed via the bus.</p> <p>The communication object is always visible.</p> <p>On bus voltage failure with modified operating hours start or limit value is saved in BDB/S.</p> <p>Only after a renewed download of the application program is the start or limit value – if set – is overwritten.</p> <p>Before the start or limit values are changed "1" must be received on the communications object "Enable delete/overwrite - System".</p>				
3	Alarm	Channel 1 operating hours	EIS 1, 1-Bit DTP 1.001	C, R, T
<p>Sends a "1", as soon as the set operating hours limit value is reached when counting upwards.</p> <p>When counting downwards a "1" is sent as soon as zero is reached.</p> <p>As soon as the communication object <i>248 Send all operating data – System</i> receives a "1", the communication object <i>Channel 1 operating hours – Alarm</i> is sent.</p> <p>Telegram value "1" = limit value reached</p> <p>Telegram value "0" = limit value not reached</p>				

Table 3: Communication objects channel 1, 0...3

No.	Function	Object name	Data type	Flags
4	Number	Channel 1 switching operations	EIS 11, 4 bytes DTP 12.001	C, R, W, T
<p>Contains the current number (= counter value) of switching operations</p> <p>With a bus voltage failure the current counter value is saved in the BDB/S.</p> <p>Via the parameter <i>Overwrite saved counter values with download</i> and the option <i>yes</i> a further parameter <i>Switching operations new counter value after download</i> opens. A new counter value can be defined with this.</p> <p>The counter value can also be modified via the bus.</p> <p>Before the current values can be changed, the communication object "Enable delete/overwrite - System" must receive a "1".</p>				
5	Change/read	Channel 1 switching operations start/limit value	EIS 11, 4 bytes DTP 12.001	C, R, W, T
<p>The switching operation start or limit value can be changed via the bus.</p> <p>The communication object is always visible.</p> <p>With bus voltage failure the modified switching operation start or limit value is saved.</p> <p>Only after a renewed download of the application program is the start or limit value – if set – is overwritten.</p> <p>Before the start or limit values are changed "1" must be received on the communications object "Enable delete/overwrite - System".</p>				
6	Alarm	Channel 1 switching operations	EIS 1, 1-Bit DTP 1.001	C, R, T
<p>Sends a "1", as soon as the set switching operations limit value is reached when counting upwards. When counting downwards a "1" is sent as soon as zero is reached.</p> <p>As soon as the communication object 248 <i>Send all operating data – System</i> receives a "1", the communication object <i>Channel 1 switching operations – Alarm</i> is sent.</p> <p>Telegram value "1" = limit value reached</p> <p>Telegram value "0" = limit value not reached</p>				

Table 4: Communication objects channel 1, 4...6

3.3.2 Channel 2...35

No.	Function	Object name	Data type	Flags
7 ... 13	See communication object 0...6	Channel 2		
No.	Function	Object name	Data type	Flags
14 ... 20	See communication object 0...6	Channel 3		
No.	Function	Object name	Data type	Flags
21 ... 27	See communication object 0...6	Channel 4		
No.	Function	Object name	Data type	Flags
28 ... 34	See communication object 0...6	Channel 5		
No.	Function	Object name	Data type	Flags
35 ... 41	See communication object 0...6	Channel 6		
No.	Function	Object name	Data type	Flags
42 ... 48	See communication object 0...6	Channel 7		
No.	Function	Object name	Data type	Flags
49 ... 55	See communication object 0...6	Channel 8		
No.	Function	Object name	Data type	Flags
56 ... 62	See communication object 0...6	Channel 9		
No.	Function	Object name	Data type	Flags
68 ... 74	See communication object 0...6	Channel 10		
etc.	etc.	etc.		

Table 5: Communication objects channel 2...35, 6...244

3.3.3 General

Number	Object Function	Name	Length	C	R	W	T	U
245	Recall all switch positions	System	1 bit	C	-	W	-	-
246	Send all operating data	System	1 bit	C	-	W	-	-
247	Enable delete/overwrite	System	1 bit	C	-	W	-	-

Fig. 11: Communication objects General 245...247

No.	Function	Object name	Data type	Flags
245	Recall all switch positions	System	EIS 1, 1-Bit DTP 1.001	C, W
<p>A recall of all switch positions of the monitored channels is started.</p> <p>Telegram value "1" = recall Telegram value "0" = do not recall</p>				
246	Send all operating data	System	EIS 1, 1-Bit DTP 1.001	C, W
<p>Send the current operating data via the communication objects</p> <p>"Channel X switching operations – Number", "Channel X operating hours – Number", "Channel X switching operations – Alarm" and "Channel X operating hours – Alarm"</p> <p>Telegram value "1" = send Telegram value "0" = do not send</p>				
247	Enable delete/overwrite	System	EIS1, 1 Bit DTP 1.001	C, W
<p>If a "1" is received the enable to delete/overwrite of the operating data is issued and a time window of 10 seconds is activated. The time window closes automatically 10 seconds after the last change and the communications object value is reset to "0" and sent on the bus.</p> <p>Via the communications object "Delete all operating data - System" all operating data can be deleted in the Data Logging Unit.</p> <p>When counting upwards the counter value is set to zero. When counting downwards the counter value is set to start value.</p> <p>The operating hours counter, start and limit values, the switching operations counter, start and limit values can be modified via the respective communication objects via the bus.</p> <p>Telegram value "1" = time window active Telegram value "0" = time window not active</p>				

Table 6: Communication objects General 245...247

Number	Object Function	Name	Length	C	R	W	T	U
248	Delete all operating data	System	1 bit	C	-	W	-	-
249	In operation	System	1 bit	C	R	-	T	-

Fig. 12: General communication objects 248 and 249

No.	Function	Object name	Data type	Flags
248	Delete all operating data	System	EIS 1, 1-Bit DTP 1.001	C, W
<p>Deleting of the operating data switching operations and operating hours. Deleting applies for all channels.</p> <p>If a "1" is received the values of the communication objects "Channel X switching operations – Number" and "Channel X operating hours – Number" are set to zero counting up and set to the start value when counting down.</p> <p>Before the operating data is deleted a "1" must be received on the communications object "Enable delete/overwrite - System".</p> <p>Telegram value "1" = delete Telegram value "0" = do not delete</p>				
249	In operation	System	EIS1, 1 Bit DTP 1.003	C, R, T
<p>This communication object is only active if "yes" has been selected for the parameter Send cyclic "In operation" telegram. As long as the communication object is activated it sends an In operation telegram.</p> <p>Telegram value "1" system in operation</p>				

Table 7: General communication objects 248 and 249

4 Planning and application

In this section you will find some tips for practical use of the Data Logging Unit.

4.1 Application fields

4.1.1 Application 1

This Unit can be used for example, in an office complex in order to record the operating life of fluorescent tubes.

For example, a reference office in the office complex is taken and from this data the switch on duration and switching operations are recorded.

Based on these values it is possible to determine what the service life of the fluorescent tubes will be. This will allow you to make assumption with regard to the maintenance expenditure and effort in the office complex.

4.1.2 Application 2

The Unit can be used for example in a functional building to record the switch on times of pumps in the heating system.

The service life of the pumps can be derived from the switch on time. This enables co-ordination of prompt pump maintenance.

4.1.3 Application 3

This Unit can be used for example in a department store to record the operating duration of the motors in the escalators.

A maintenance plane can be created based on the recorded use. The plan can be co-ordinated so that the operations in the department store are not affected.

4.1.4 Application 4

The Unit can be used for example in a hotel to record the operating life of filters in the air conditioning.

A maintenance plan can be created using this data.

4.2 Reaction on bus voltage failure

With bus voltage failure the Data Logging Unit permanently saves the operating hours and switching operations.

4.3 Reaction on bus voltage recovery

Recall of the current counter states and update of the communication objects.

Appendix

A.1 Scope of delivery

The Data Logging Unit is supplied with the following parts.
Please check the items received using the following list.

- 1 pc. BDB/S 1.1 Data Logging Unit, MDRC
- 1 pc. installation and operating instructions
- 1 pc. bus connection terminal (red/black)

A.2 Directory of drawings

Fig. 1:	BDB/S 1.1	6
Fig. 2:	Circuit diagram	7
Fig. 3:	Dimension drawing	8
Fig. 4:	"General" parameter window	12
Fig. 5:	Parameter window "Channel designator"	16
Fig. 6:	Parameter window "Channel parameters page 1 of 2"	17
Fig. 7:	Parameter window "Channel parameters page 2 of 2"	24
Fig. 8:	Parameter window "Channel parameters page 1 of 2"	27
Fig. 9:	Parameter window "Channel parameters page 2 of 2"	28
Fig. 10:	Communication objects channel 1, 0...6	29
Fig. 11:	Communication objects General 245...247	32
Fig. 12:	General communication objects 248 and 249	33

A.3 Directory of tables

Table 1:	Technical data	6
Table 2:	Application program.....	7
Table 3:	Communication objects channel 1, 0...3	29
Table 4:	Communication objects channel 1, 4...6	30
Table 5:	Communication objects channel 2..35, 6...244	31
Table 6:	Communication objects General 245...247	32
Table 7:	General communication objects 248 and 249	33
Table 8:	Ordering details of the Data Logging Unit, MDRC	XI

A.4 Index

Assignment of the physical address 6, 10
Bus voltage 6, 9
Cleaning 10
Commissioning requirements 9
Current consumption, bus 6
Leakage loss, bus 6
Limit values 4, 19
Maintenance 10
Operating hours 20, 21, 23, 29
Power supply 6

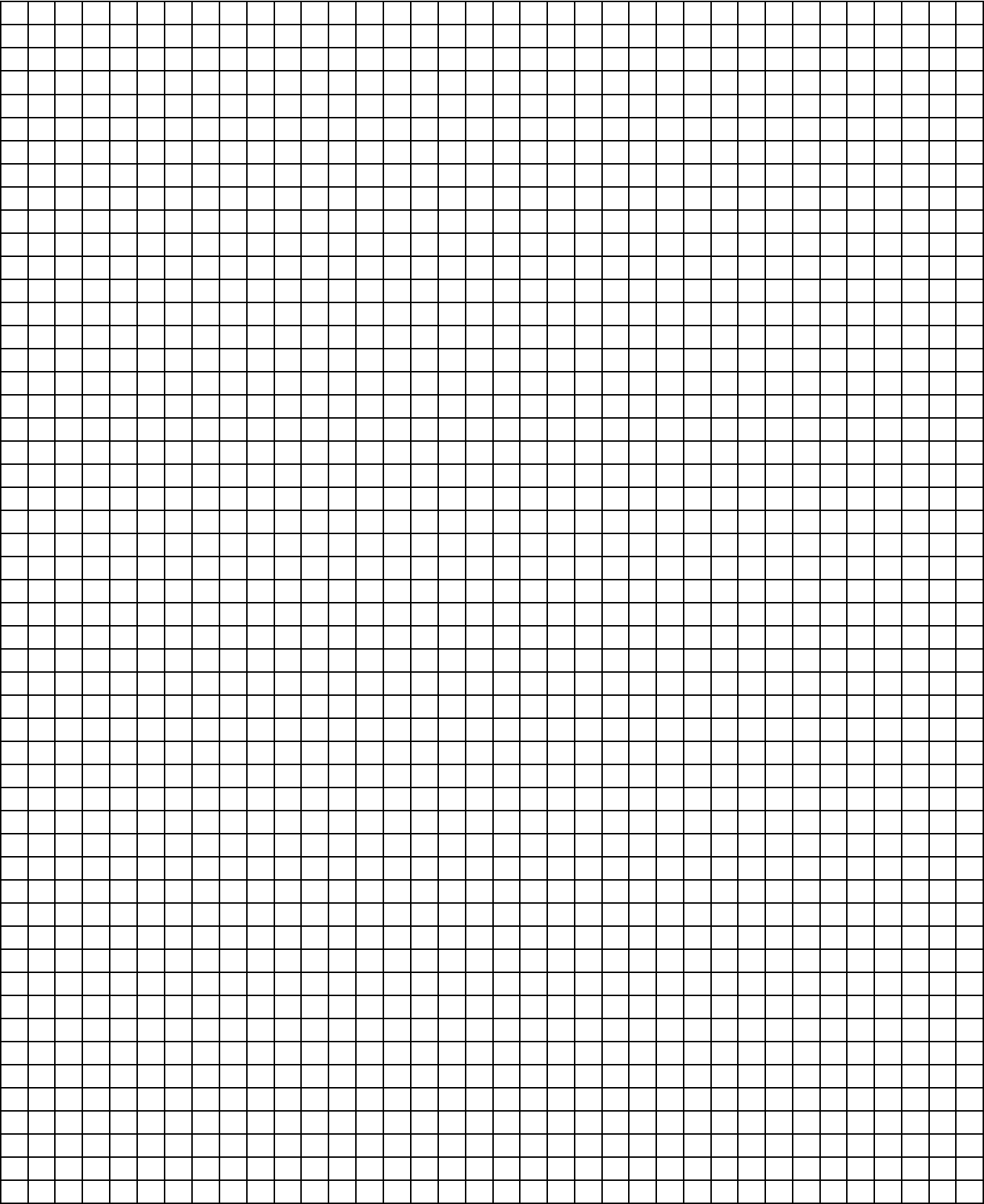
Programming 7, 10
Remaining runtime 23
Remaining value 25, 26
Start values 19
Supplied state 10
Switch operation 24, 25, 30
Switching operations 24, 25, 26, 30, 32, 33, 34
'Total runtime' 23
Total value 25

A.5 Ordering information

Short description	Designation	Order No.	bbn 40 16779 EAN	Price group	Unit weight 1 pc. [kg]	Pack unit [Pcs]
BDB/S 1.1	Data Logging Unit, MDRC	2CDG 110 067 R0011	657 53 2	26	0,1	1

Table 8: Ordering details of the Data Logging Unit, MDRC

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The information in this leaflet is subject to change without further notice.

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