Product Manual

# ABB i-bus® EIB / KNX
# EIB Monitoring Unit EUB/S 1.1

Intelligent Installation Systems

This manual describes the function of the EIB monitoring module EUB/S 1.1 with the Application program “EIB Monitoring/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.

# Contents

# 1 General

The EIB Monitoring Unit EUB/S 1.1 is an EIB / KNX modular installation device with a module width of 2 space units. The unit is used to monitor up to 100 devices in EIB / KNX installations. The devices (bus members) are monitored to ensure their presence and minimum functionality (send and receive).

## 1.1 Product and functional overview

Devices can be monitored via the physical address (PA) or via a group address telegram (GA). Overall there are four monitoring modes available:

**Monitoring mode: Poll physical address cyclically**
With this mode of monitoring the unit cyclically polls the physical address of the devices to be monitored to ensure that they are still present. The EUB/S sends a polling request to the device to be monitored. If the device is present and in operation it will respond and the EUB/S detects the device. If there is no response after a certain time, the EUB/S evaluates a failure.

**Monitoring mode: Poll physical address by object**
With this mode of monitoring the devices to be monitored can be polled by other bus members in the EIB / KNX system. For example, devices can be polled via a pushbutton or a time switch at a certain time. If a connection cannot be established to the monitoring device, it will be evaluated as a failure.

**Monitoring mode: Receive group address cyclically**
This mode of monitoring is also referred to as passive monitoring. Telegrams which are cyclically sent by the device being monitored are evaluated. If the telegrams are not received for a definable time, it will be evaluated as a failure.
For this monitoring mode it is necessary that the devices being monitored can send telegrams cyclically.

**Monitoring mode: Poll group address cyclically**
This mode of monitoring is also referred to as active monitoring. With active monitoring the EIB Monitoring Unit cyclically sends telegrams to the device to be monitored and evaluates the telegrams received. If the EIB Monitoring Unit does not receive a response telegram within an adjusted time, it will be evaluated as a failure.

# 2 Device technology


Fig. 1: EUB/S 1.1

The EIB Monitoring Unit EUB/S 1.1 enables monitoring of up to 100 devices in EIB / KNX systems. The bus devices (members) are monitored to ensure their presence and minimum functionality (send and receive).

The monitoring occurs by four different monitoring modes. Furthermore, devices can be combined in up to 5 groups for monitoring purposes.

### 2.1.1 Technical Data

| | | |
|---|---|---|
| **Power supply** | – Operating voltage<br>– Power consumption<br>– Leakage loss | 21 … 30 V DC, via EIB<br>Max. 10 mA<br>Max. 200 mW |
| **Connections** | – EIB / KNX | Bus connection terminal |
| **Operating and display elements** | – Red LED and button | For assignment of the physical address |
| **Enclosure** | – IP 20 | According to DIN EN 60 529 |
| **Safety class** | – II | According to DIN EN 61 140 |
| **Isolation category** | – Overvoltage category<br>– Pollution degree | III to DIN EN 60 664-1<br>2 to DIN EN 60 664-1 |
| **EIB / KNX safety extra low voltage** | – SELV 24 V DC | |
| **Temperature range** | – Operation<br>– Storage<br>– Transport | – 5 °C...+ 45 °C<br>– 25 °C...+ 55 °C<br>– 25 °C...+ 70 °C |
| **Design** | – Modular installation device (REG)<br>– Dimensions<br>– Module width<br>– Mounting depth | Modular installation device, Pro*M*<br>90 x 36 x 64,5 mm (H x W x D)<br>2 modules at 18 mm<br>64,5 mm |
| **Installation** | – On 35 mm mounting rail | According to DIN EN 60 715 |
| **Mounting position** | – As required | |
| **Weight** | – 0.1 kg | |
| **Housing, colour** | – Plastic housing, grey | |
| **CE norm** | – In accordance with the EMC guideline and low voltage guideline | |
| **Certification** | – EIB / KNX to EN 50 090-1, -2 | |

Tab. 1: Technical Data

| Application program | Number communication objects | Max. number of group addresses | Max. number of associations |
|---|---|---|---|
| **EIB Monitoring/1** | 232 | 254 | 255 |

Tab. 2: Application program

Note: The programming requires EIB Software Tool ETS2 V1.1.3a or higher. If ETS3 is used a ".VD3" type file must be imported. The application program is available in the ETS2 / ETS3 at ABB/Security and Monitoring / Controller.

Note: Programming a device during monitoring can cause failures in operation. Therefore the monitoring of devices should be blocked while programming.

Note: Monitoring via the physical address might not be possible for some devices or can affect operation. Those devices have to be monitored via a group address telegram.

Examples:
**– Display and Control Tableau MT 701.2**
Monitoring or polling via the physical address is not possible for this device. Monitoring only via group address telegram.

**– Universal Concentrator UK/S 32.2**
During a monitoring request via the physical address, this device doesn't react on input signals and doesn't update outputs respectively.

## 2.2 Connection diagram

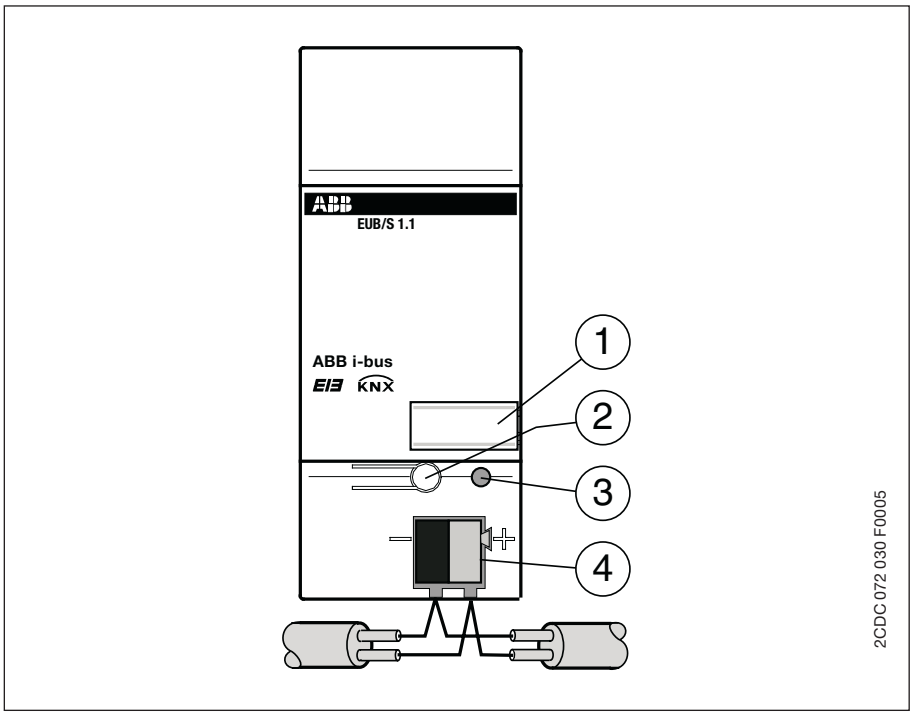


Fig. 2: Connection diagram

**1** Label carrier
**2** Programming button
**3** Programming LED (red)
**4** Bus connection terminal

## 2.3 Dimension drawing

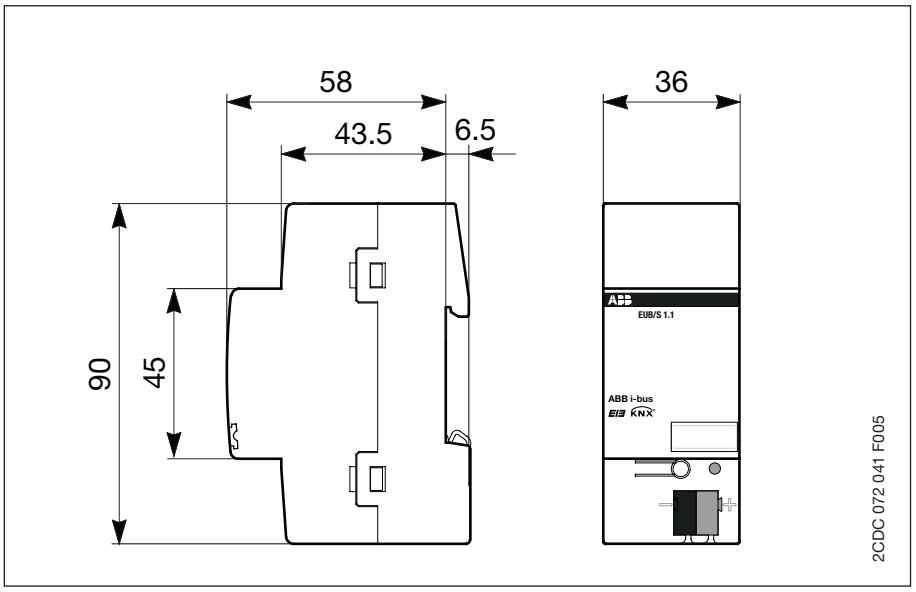


Fig. 3: Device dimensions

## 2.4 Assembly and installation

The EIB Monitoring Unit EUB/S 1.1 is suitable for installation in the distribution board or small enclosures for fast installation on 35 mm mounting rails to DIN EN 60 715.

The mounting position can be selected as required.

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

# 3 Commissioning

## 3.1 Overview

The *"EIB monitoring/1.1"* application program is available for the EIB monitoring unit. The programming requires EIB Software Tool ETS2 **V1.2a** or higher. If ETS3 is used a ".VD3" type file must be imported.

**Supplied state**
The device is supplied with the physical address 15.15.255. The program is already pre-installed. In order to completely reprogram the unit, it must be discharged before programming via the ETS.

**Cycle times**
In order to keep the bus load and telegram traffic by using the EIB Monitoring Unit as low as possible, minimum cycle times have been set as default for the *Poll physical address cyclically* and *Poll group address cyclically* modes:

| Devices to be monitored | Minimum preset cycle time |
|---|---|
| Devices 1..6 | 10 s |
| Devices 7..18 | 1 min |
| Devices 19..100 | 10 min |

Tab. 3: Preset cycle times

Note: In order to keep the bus load as low as possible with monitoring mode *Receive group address cyclically*, the monitoring cycles of cyclically sending devices should be adjusted longer than 10 minutes.

## 3.2 Parameter

In the following sections the individual parameter windows with their respective parameters are described in detail. Underlined parameters which are listed by the options are default parameters.

### 3.2.1 Parameter window “General”

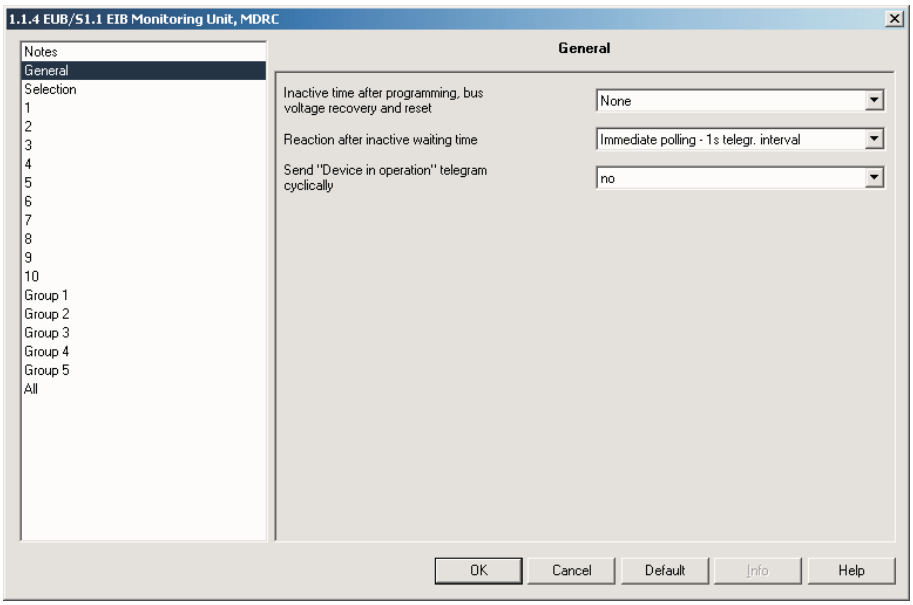


Fig. 4: “General” Parameter window

**Inactive time after programming, bus voltage recovery and reset**
Options: None / 1s / ... / 40s / 1min / ... / 40min / 1h / ... / 10h / 24h

All object values are deleted after bus voltage recovery, programming and reset. A so-called inactive time can be programmed. During this time no telegrams will be sent and received telegrams will not be evaluated.

**Reaction after inactive waiting time**
Options: no immediate polling of all devices
Immediate polling - 1s telegr. interval
…
Immediate polling - 10s telegr. interval

After the inactive time has timed out, either the monitoring with parameterised individual monitoring times can start or an immediate poll of all monitored devices can be undertaken. The time between the polling telegrams is adjustable.

**Send “In operation” telegram cyclically**
Options: no/yes

Cyclical telegrams can be sent with this parameter. These telegrams can be used to monitor the operation of the EIB Monitoring Unit. If for example the value “1” is sent cyclically to an actuator with the staircase lighting function, the failure of the EIB Monitoring Unit can be signalled if the telegram is not received.
If the option *yes* is selected, the respective parameter *Cycle time* will be displayed.

**Cycle time**
Options: 10s / … / 40s / 1min / … / 40min / 1h / … / 10h / 24h

With this parameter you can determine the intervals at which the EIB Monitoring Unit should send telegrams for the purpose of monitoring operation.

### 3.2.2 Parameter window “Selection”

The EIB Monitoring Unit EUB/S 1.1 enables monitoring of up to 100 devices. In the parameter window *Selection* you can determine the number of devices to be monitored.

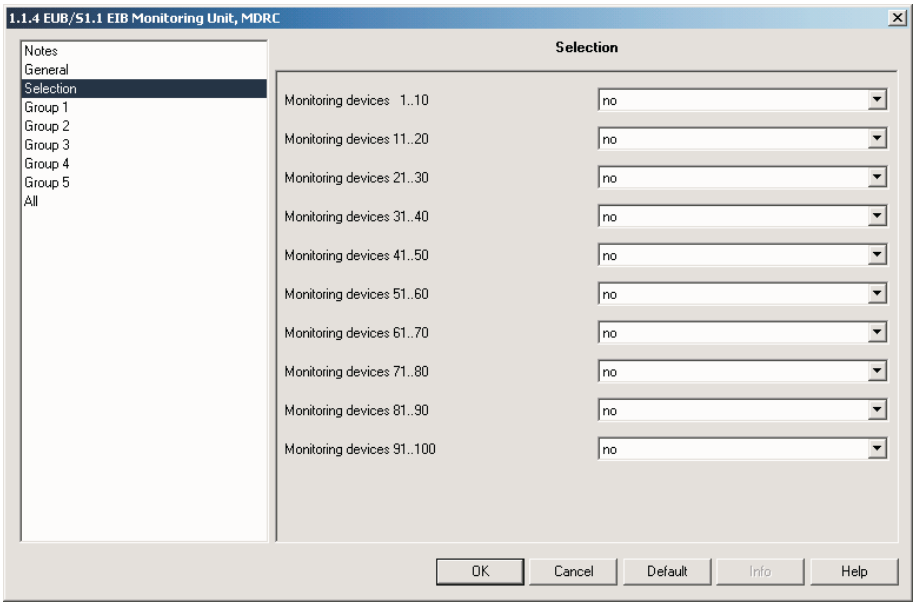


Fig. 5: Parameter window “Selection”

**Monitoring devices xx..xx**
Options: no/yes

If for example the parameter *Monitoring devices 1..10* is enabled with option *yes*, devices 1 to 10 can be parameterised. If 100 devices have to be monitored, all parameters in this parameter window must be confirmed with *yes*.

### 3.2.3 Parameter window “1...100”

There is one parameter window for every device to be monitored.
The monitoring mode can be set separately for the individual devices.

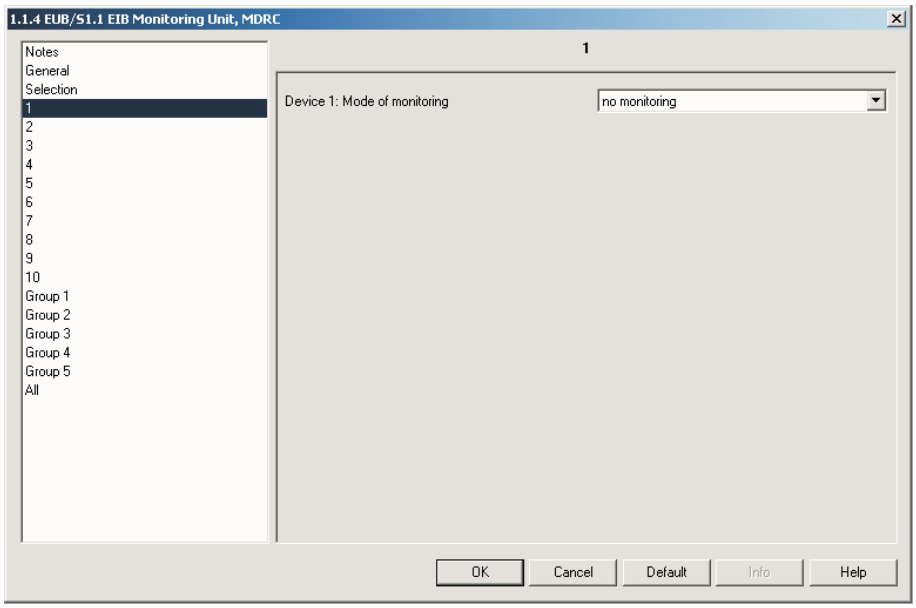


Fig 6: Parameter window “x: Mode of monitoring”

**Device x: Mode of monitoring**
Options: no monitoring
Poll physical address cyclically
Poll physical address by object
Receive group address cyclically
Poll group address cyclically

The functions of the parameter values for the modes of monitoring are explained in the following four sections.

### 3.2.3.1 Mode of monitoring “Poll physical address cyclically”

If a device is polled via the physical address, a cyclical transport connection is established to the monitoring device. If a status response acknowledgement of the device being monitored is not received, it will be evaluated as a failure.

If the monitoring mode *Poll physical address cyclically* has been selected, the following parameter window will be displayed in the ETS3.

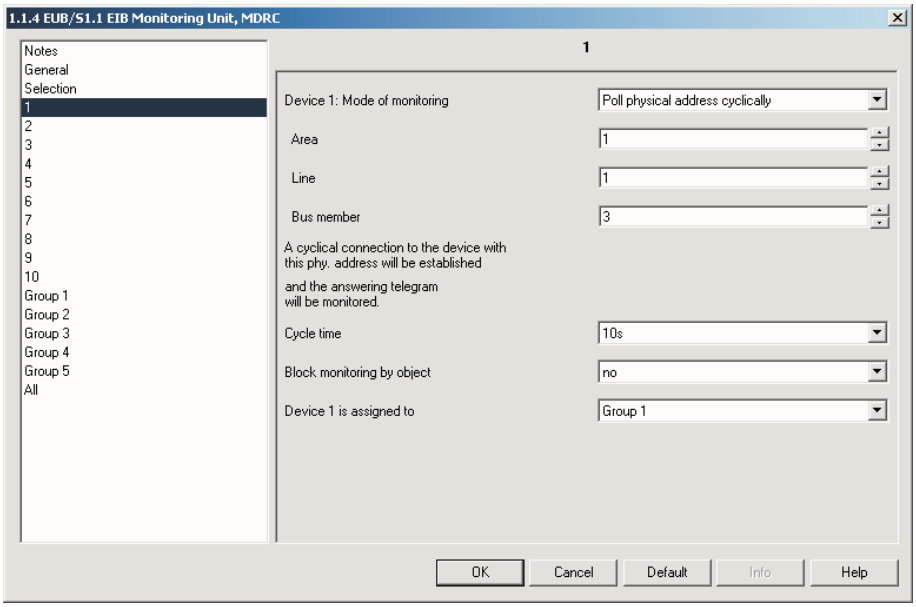


Fig 7: Parameter window “x: Poll physical address cyclically”

With the parameters *Area, Line* and *Bus member* the physical address of the respective device to be monitored in the EIB / KNX system is set.

**Area**
Options: 1…15

Here you define the area in which the devices to be monitored are located.

**Line**
Options: 1…15

Here you define the line in which the devices to be monitored are located.

**Bus member**
Options: 1…255

Here you define the device number of the device to be monitored in the system.

**Cycle time**
Options: 10s / … / 40s / 1min / 10min / … / 40min / 1h / … / 10h / 24h

With this parameter you can determine the intervals at which a connection has to be established to the devices to be monitored.

**Block monitoring by object**
Options: no/yes

With this function the connection to a device is blocked by an object. This is necessary for example in order to commission a device. If the option *yes* is selected, the respective parameter *Blocking is limited by time* will be displayed.

**Blocking is limited by time**
Options: 10s / … / 1min / 10min / … / 40min / 1h / … / 10h / 24h / no

Here you define how long the monitoring of the device via the object has to be blocked.

**Device x is assigned to**
Options: no group
Group 1
Group 2
Group 3
Group 4
Group 5

Each device can be assigned to one of five groups. In one group the collective message and other functions are assigned. For more details see section 3.2.4.

### 3.2.3.2 Mode of monitoring “Poll physical address by object”

With this mode of monitoring it is possible to initiate monitoring by an external device (e.g. pushbutton, timer).
If the monitoring mode *Poll physical address by object* is activated, the following parameter window will be displayed in the ETS3.

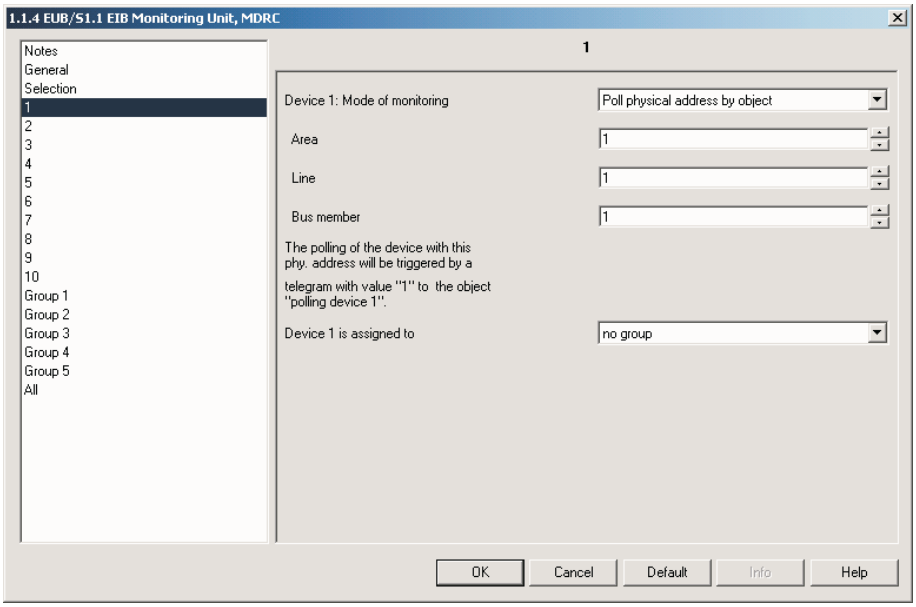


Fig. 8: Parameter window “x: Poll physical address by object”

With the parameters *Area, Line* and *Bus member* the physical address of the respective device to be monitored is set.

**Area**
Options: 1…15

Here you define the area in which the devices to be monitored are located.

**Line**
Options: 1…15

Here you define the line in which the devices to be monitored are located.

**Bus member**
Options: 1…255

Here you define the device number of the device to be monitored in the system.

**Device x is assigned to**
Options: no group
Group 1
Group 2
Group 3
Group 4
Group 5

Each device can be assigned to one of five groups. In one group the collective message and other functions are assigned. For more details see section 3.2.4.

### 3.2.3.3 Mode of monitoring “Receive group address cyclically”

With mode of monitoring *Receive group address cyclically* (passive monitoring), the device to be monitored sends a telegram cyclically which is received by the EIB Monitoring Unit. A requirement for this mode is that the device to be monitored can send telegrams cyclically. If this mode of monitoring is selected the following parameter window will be displayed in the ETS3.

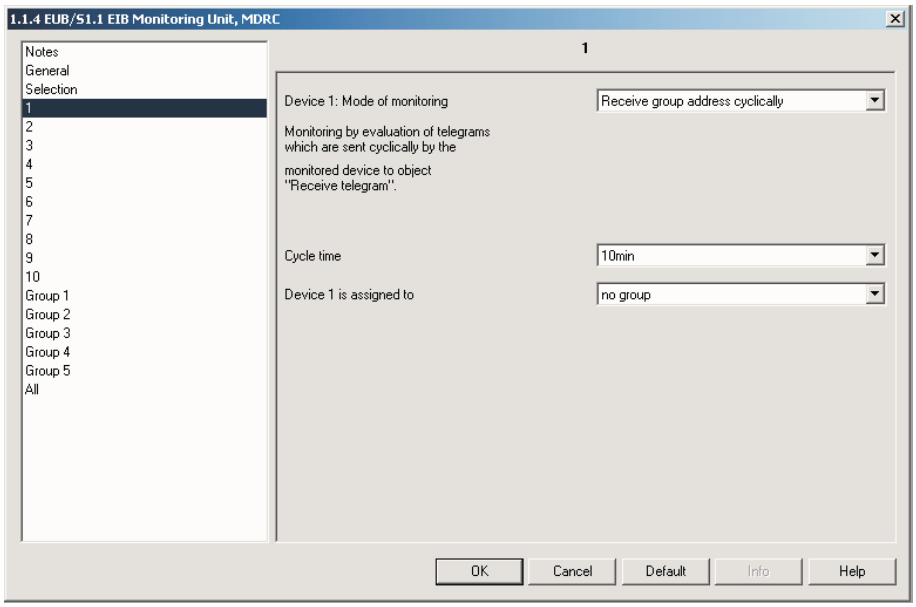


Fig. 9: Parameter window “x: Receive group address cyclically”

**Cycle time**
Options: 10s / … / 40s / 1min / 10min / … / 40min / 1h / … / 10h / 24h

The cycle time of the EUB/S should be at least twice as long as the time the device to be monitored sends cyclically the group address. This should be done to avoid in case of a delay, that the device to be monitored will be evaluated as failure.

**Device x is assigned to**
Options: no group
Group 1
Group 2
Group 3
Group 4
Group 5

Each device can be assigned to one of five groups. In one group the collective message and other functions are assigned. For more details see section 3.2.4.

### 3.2.3.4 Mode of monitoring “Poll group address cyclically”

With this mode of monitoring a device can be monitored while the EIB Monitoring Unit sends cyclical telegrams to the device to be monitored and evaluates the response telegrams.

Notes: The read flag must be set for the object to be polled in the monitored device.

If several devices use the group address to be polled, the read flag has to be set only in the device to be monitored.

The assigned group address of the object to be polled must be set as “send” in the ETS.

If *Poll group address cyclically* mode is selected, the following parameter window will be displayed in the ETS3.

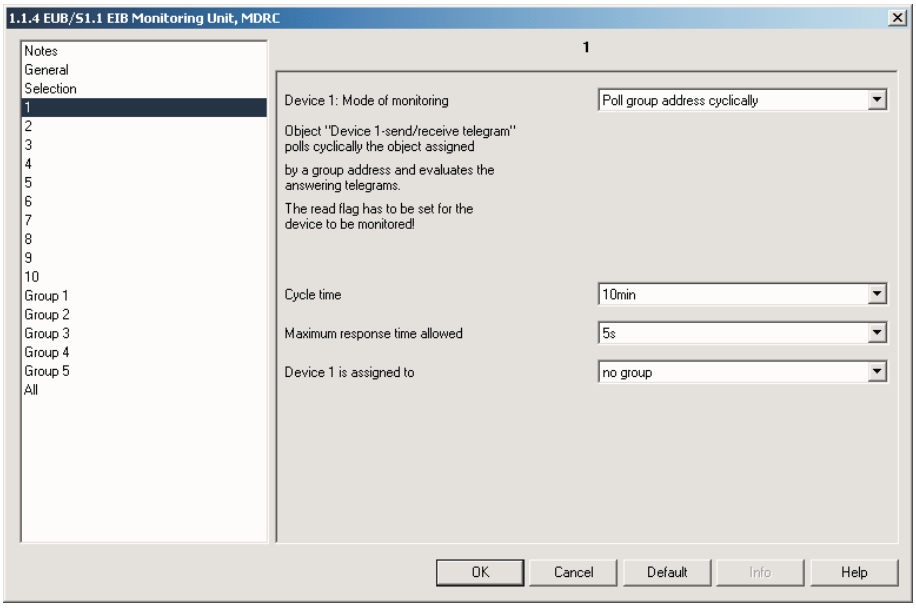


Fig. 10: Parameter window “x: Poll group address cyclically”

**Cycle time**
Options: 10s / … / 40s / 1min / 10min / … / 40min / 1h / … / 10h / 24h

The cycle time is used to adjust the intervals in which the unit should send polling telegrams to the device to be monitored.

**Maximum response time allowed**
Options: 500ms / … / 1s / … / 5s / … / 10s

This parameter is used to adjust the time within the expected response telegram should be received. If the unit can not receive a response telegram within this time, it will be evaluated as a failure.

**Device x is assigned to**
Options: no group
Group 1
Group 2
Group 3
Group 4
Group 5

Each device can be assigned to one of five groups. In one group the collective message and other functions are assigned. For more details see section 3.2.4.

### 3.2.4 Parameter window “Group 1..5”

Each monitored device can be assigned to any group. Five groups are available for this purpose.

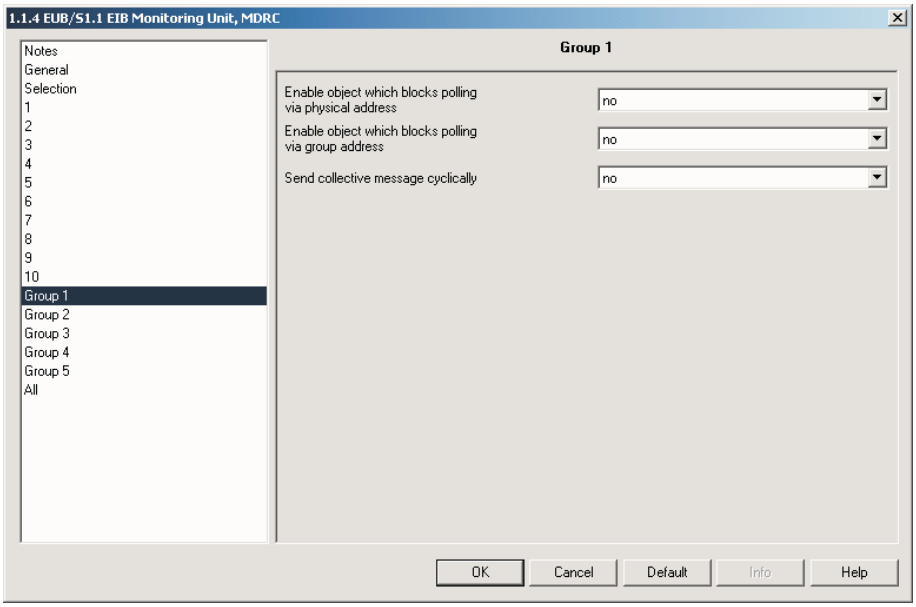


Fig. 11: Parameter window “Group 1..5”

**Enable object which blocks polling via physical address**
Options: no/yes

If the option *yes* is selected, the object *Block connection to phy. addr.* is enabled. With this object the monitoring of devices which are polled via the physical address and which have been assigned to this group can be blocked. The respective parameter *Blocking is limited by time* will be displayed.

**Blocking is limited by time**
Options: 10s / … / 1min / 10min / … / 40min / 1h / … / 10h / 24h / no

Here you define how long the polling of devices of this group has to be blocked.

**Enable object which blocks polling via group address**
Options: no/yes

If the option *yes* is selected the object *Block telegram reporting* is enabled. With this object the monitoring of the devices which are polled via the group address and which have been assigned to this group can be blocked.
The independent parameter *Blocking is limited by time* will be displayed.

**Blocking is limited by time**
Options: 10s / … / 1min / 10min / … / 40min / 1h / … / 10h / 24h / no

Here you define how long the polling of devices of this group has to be blocked.

**Send collective message cyclically**
Options: no
yes – every 10min
…
yes – every 1h
…
yes – every 24h

A collective message of the respective group can be sent with this parameter.

### 3.2.5 Parameter window “All”

In this parameter window a higher level collective message which applies for all monitored devices can be defined. Corresponding with the parameters of the parameter window *Group 1-5*, the same parameters are used for all devices and do not relate to a specific group.

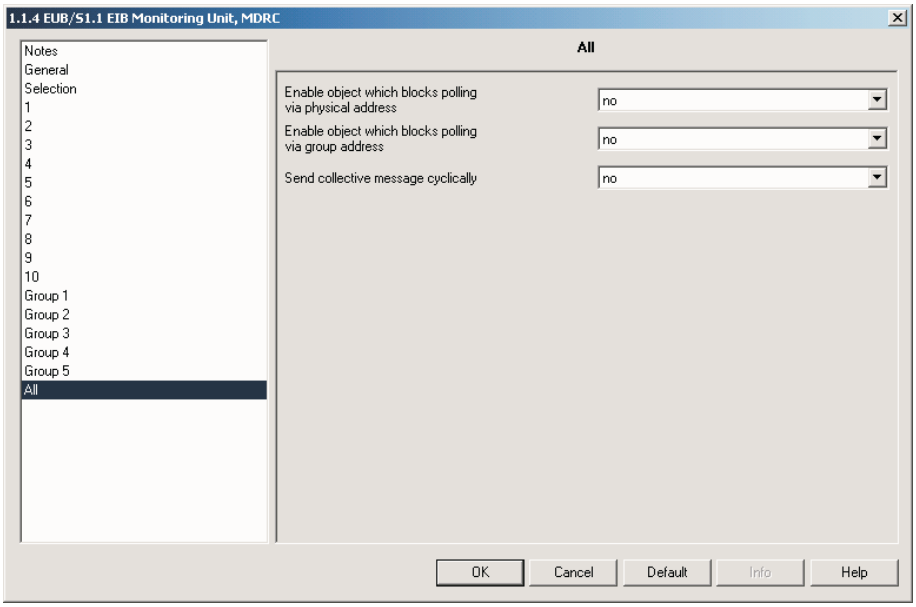


Fig. 12: Parameter window “All”

**Enable object which blocks polling via physical address**
Options: no/yes

If the option *yes* is selected an object is enabled. With this object the monitoring of all devices which are polled via the physical address can be blocked. The respective parameter *Blocking is limited by time* will be displayed.

**Blocking is limited by time**
Options: 10s / … / 1min / 10min / … / 40min / 1h / … / 10h / 24h / no

Here you define how long polling via the physical address of all devices has to be blocked.

**Enable object which blocks polling via group address**
Options: no/yes

If the option *yes* is selected an object is enabled. With this object the monitoring of all devices which are polled via the group address can be blocked. The respective parameter *Blocking is limited by time* will be displayed.

**Blocking is limited by time**
Options: 10s / … / 1min / 10min / … / 40min / 1h / … / 10h / 24h / no

Here you define how long polling via the group address of all devices has to be blocked.

**Send collective message cyclically**
Options: no
yes – every 10min
…
yes – every 1h
…
yes – every 24h

With this parameter a collective message of all devices to be monitored can be sent cyclically.

### 3.3 Communication object

| No. | Function | Object name | Data type | Flags |
|---|---|---|---|---|
| **1, 3, … 199** | **Failure** | **Device xx** | **1 Bit EIS1 DPT 1.001** | **C, R, T** |
| This object is used to indicate the failure of a monitored device. A failure has occurred if it is not possible to poll a physical address 3times or if an expected group address telegram has not been received 3times in a row. Object values will only be updated by alteration.<br>0 : Operational<br>1 : Failure | | | | |
| **2, 4, … 200** | **Block connection to phy. addr.** | **Device xx** | **1 Bit EIS1 DPT 1.001** | **C, W** |
| With this object the cyclical polling of physical addresses (PA) is blocked.<br>Mode of monitoring “Poll address cyclically”<br>0 : Enable polling<br>1 : Block polling | | | | |
| **2, 4, … 200** | **Polling** | **Device xx** | **1 Bit EIS1 DPT 1.001** | **C, W** |
| This object initiates polling of the physical address of a device to be monitored.<br>Mode of monitoring “Poll physical address by object”<br>0 : No reaction<br>1 : Start polling | | | | |
| **2, 4, … 200** | **Receive telegram** | **Device xx** | **1 Bit EIS1 DPT 1.001** | **C, W, Upd** |
| This object receives cyclical telegrams from a device to be monitored. If no telegrams are received after a programmed time, this is evaluated as a failure. The failure is signalled by the object *Failure*.<br>Mode of monitoring “Receive group address cyclically” | | | | |
| **2, 4, … 200** | **Send/receive telegram** | **Device xx** | **1 Bit EIS1 DPT 1.001** | **C, R, T, Upd** |
| This object cyclically polls an object assigned via the group address and evaluates the response telegram. If no telegrams are received after a programmed time, this is evaluated as a failure. The failure is signalled by the object *Failure*.<br>Mode of monitoring “Poll group address cyclically” | | | | |
| **202 207 … 222** | **Block connection to phy. addr.** | **Group 1 Group 2 … Group 5** | **1 Bit EIS1 DPT 1.001** | **C, W** |
| With this object the cyclical polling of physical addresses of the devices of a group is blocked.<br>0 : Enable polling<br>1 : Block polling | | | | |
| **204 209 … 224** | **Block telegram reporting** | **Group 1 Group 2 … Group 5** | **1 Bit EIS1 DPT 1.001** | **C, W** |
| With this object the polling of the devices of a group via the group address is blocked.<br>0 : Enable polling<br>1 : Block polling | | | | |

Tab. 4: Communication objects part 1

| No. | Function | Object name | Data type | Flags |
|---|---|---|---|---|
| **205<br>210<br>…<br>225** | **Collective message** | **Group 1<br>Group 2<br>…<br>Group 5** | **1 Bit EIS1<br>DPT 1.001** | **C, R, T** |
| Sends cyclically a status message of devices assigned to a group to be monitored. A failure occurs if one of the devices to be monitored in the group can not be detected. If all devices of a group will again be detected, the object value will be automatically set to “0”.<br>0 : No fault<br>1 : Fault | | | | |
| **227** | **Block connection to phy. addr.** | **All devices** | **1 Bit EIS1<br>DPT 1.001** | **C, W** |
| Blocks polling of all devices which are polled via the physical address (PA).<br>0 : Enable polling<br>1 : Block polling | | | | |
| **229** | **Block telegram reporting** | **All devices** | **1 Bit EIS1<br>DPT 1.001** | **C, W** |
| Blocks polling of all devices which are polled via a group address.<br>0 : Enable polling<br>1 : Block polling | | | | |
| **230** | **Collective message** | **All devices** | **1 Bit EIS1<br>DPT 1.001** | **C, R, T** |
| Sends cyclically the status of all devices to be monitored. A failure occurs if one of the devices to be monitored in the system can not be detected.<br>0 : No fault<br>1 : Fault | | | | |
| **231** | **Status byte** | **Device** | **1 Byte<br>(non-EIS)** | **C, R, T** |
| The EIB Monitoring Unit sends information about the different poll states to this object.<br>Bit-by-bit coding:<br>Bit 0: The cyclical polling of devices is interrupted by polling via an object.<br>Bit 1: The polling via the physical address is blocked via an object.<br>Bit 2: The polling via the group address is blocked via an object.<br>Bit 3-7: Not in use (=0)<br>A code table for the status byte can be found in section 4.1. | | | | |
| **232** | **In operation** | **Device** | **1 Bit EIS1<br>DPT 1.001** | **C, R, T** |
| The EIB Monitoring Unit sends cyclical telegrams with the value “1” with this object. This telegram can be used for example by other devices for monitoring operation of the EUB/S. If for example the telegram with the value “1” is sent cyclically to an actuator with the staircase lighting function, the failure of the EIB Monitoring Unit can be signalled if the telegram is not received. | | | | |

Tab. 4: Communication objects part 2

# 4 Appendix

## 4.1 Status byte – code table

| Status value | Hexadecimal value | Monitoring via the group address telegram is blocked | Monitoring via the physical address is blocked | The cyclical polling of devices is interrupted by polling via an object |
|---|---|---|---|---|
| | | Bit 2 | Bit 1 | Bit 0 |
| 0 | 00 | | | |
| 1 | 01 | | | ■ |
| 2 | 02 | | ■ | |
| 3 | 03 | | ■ | ■ |
| 4 | 04 | ■ | | |
| 5 | 05 | ■ | | ■ |
| 6 | 06 | ■ | ■ | |
| 7 | 07 | ■ | ■ | ■ |

Tab. 5: Status byte

If the value of the status byte changes, it is sent.

## 4.2 Directory of drawings



## 4.3 Directory of tables

## 4.4 Ordering details

| Designation | **Ordering details** | | **bbn 40 16779** | Price group | Unit weight 1 pc. [kg] | Pack unit [Pcs] |
|---|---|---|---|---|---|---|
| | **Short designation** | Order No. | **EAN** | | | |
| EIB Monitoring Unit, MDRC | **EUB/S 1.1** | 2CDG 110 066 R0011 | **64991 9** | | 26 | 0.1 |

Tab. 6: Ordering information

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

Pub. No. 2CDC 513 023 D0201

**Your EIB-Partner**